Unit Hazardous Materials Coordinator

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Record of Changes

Identification of Change		Date Entered	Signature
Change Number	Date		
1.0	8 Dec 02	8 Dec 02	c/o Vicinia Corporation
1.1	20 Feb 03	20 Feb 03	c/o Vicinia Corporation
1.2	7 Dec 03	7 Dec 03	c/o Vicinia Corporation
1.3	27 Feb 04	27 Feb 04	c/o Vicinia Corporation
1.4	14 Oct 04	14 Oct 04	c/o Vicinia Corporation
1.5	15 Jan 05	15 Jan 05	c/o Vicinia Corporation
1.6	9 May 05	9 May 05	c/o Vicinia Corporation
1.7	22 Sep 05	22 Sep 05	c/o Vicinia Corporation
1.8	7 Nov 05	7 Nov 05	c/o Vicinia Corporation
1.9	14 Feb 06	14 Feb 06	c/o Vicinia Corporation
1.10	30 Apr 06	30 Apr 06	c/o Vicinia Corporation
1.11	31 May 06	31 May 06	c/o Vicinia Corporation
1.12	20 Oct 06	20 Oct 06	c/o Vicinia Corporation
1.13	19 Jan 07	19 Jan 07	c/o Vicinia Corporation
1.14	26 Feb 07	26 Feb 07	c/o Vicinia Corporation
1.15	16 Nov 07	16 Nov 07	c/o Vicinia Corporation
1.16	4 Dec 07	4 Dec 07	c/o Vicinia Corporation
1.17	30 Jan 08	30 Jan 08	c/o Vicinia Corporation
1.18	30 May 08	30 May 08	c/o Vicinia Corporation
1.19	6 Jul 08	6 Jul 08	c/o Vicinia Corporation
1.20	10 Sep 08	10 Sep 08	c/o Vicinia Corporation
1.21	6 Jan 09	6 Jan 09	c/o Vicinia Corporation
1.22	30 Apr 09	30 Apr 09	c/o Vicinia Corporation
1.23	22 Sep 09	22 Sep 09	c/o Vicinia Corporation
1.24	19 Jul 10	19 Jul 10	c/o Vicinia Corporation
1.25	10 Nov 10	10 Nov 10	c/o Vicinia Corporation
1.26	6 Jan 11	6 Jan 11	c/o Vicinia Corporation
1.27	18 May 11	18 May 11	c/o Vicinia Corporation
1.28	6 Sep 11	6 Sep 11	c/o Vicinia Corporation
1.29	12 Jan 12	12 Jan 12	c/o Vicinia Corporation
1.30	17 Mar 12	17 Mar 12	c/o Vicinia Corporation
1.31	14 Jun 12	14 Jun 12	c/o Vicinia Corporation
1.32	6 Sep 12	6 Sep 12	c/o Vicinia Corporation
1.33	30 Jan 13	30 Jan 13	c/o Vicinia Corporation
1.34	16 Sep 13	16 Sep 13	c/o Vicinia Corporation
1.35	02 Jan 14	02 Jan 14	c/o Vicinia Corporation
1.36	10 Sep 14	10 Sep 14	c/o Vicinia Corporation
1.37	9 Dec 14	9 Dec 14	c/o Vicinia Corporation
1.38	27 Aug 15	27 Aug 15	c/o Vicinia Corporation
1.39	7 Jan 16	7 Jan 16	c/o Vicinia Corporation
1.40	11 May 16	11 May 16	c/o Vicinia Corporation
1.41	30 Aug 16	30 Aug 16	c/o Vicinia Corporation
1.42	13 Jan 17	13 Jan 17	c/o Vicinia Corporation
1.43	26 May 17	26 May 17	c/o Vicinia Corporation
1.44	1 Aug 17	1 Aug 17	c/o Vicinia Corporation
1.45	13 Sep 17	13 Sep 17	c/o Vicinia Corporation
1.46	11 Feb 18	11 Feb 18	c/o Vicinia Corporation
1.47	27 May 18	27 May 18	c/o Vicinia Corporation
1.48	9 Sep 18	9 Sep 18	c/o Vicinia Corporation
1.49	1 Nov 18	1 Nov 18	c/o Vicinia Corporation
1.50	4 Feb 19	4 Feb 19	c/o Vicinia Corporation
1.51	17 May 19	17 May 19	c/o Vicinia Corporation
1.52	15 Oct 19	15 Oct 19	c/o Vicinia Corporation
1.53	14 Feb 20	14 Feb 20	c/o Vicinia Corporation
1.54	14 Oct 20	14 Oct 20	c/o Vicinia Corporation
1.55	17 Mar 21	17 Mar 21	c/o Vicinia Corporation
1.56	4 Jun 21	4 Jun 21	c/o Vicinia Corporation
1.57	21 Sep 21	21 Sep 21	c/o Vicinia Corporation
1.58	24 Feb 22	24 Feb 22	c/o Vicinia Corporation
1.59	19 Oct 22	19 Oct 22	c/o Vicinia Corporation
1.60	17 Jun 23	17 Jun 23	c/o Vicinia Corporation
1.61	22 Oct 23	22 Oct 23	c/o Vicinia Corporation

HAZMAT References

Description	Reference (NDID, Catalogue #, URL)
HAZMAT Terms and Concepts	
A-GG-040-004/AG-001 • Chapter 1 Introduction to Hazardous Materials Programs in DND/CF	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter01_e.pdf
A-GG-040-004/AG-001 • HAZMAT Glossary	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001_e.pdf
HAZMAT Selection and Procurement	
A-GG-040-004/AG-001 • Chapter 6 Procurement of Hazardous Materials	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter06_e.pdf
HAZMAT Use, Handling and Labeling	
A-GG-040-004/AG-001 • Chapter 16 Workplace Hazardous Material Information System (WHMIS) • Chapter 17 Material Safety Data Sheets (MSDS)	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter16_e.pdf http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter17_e.pdf
WHMIS Symbols	A-JS-000-085/DA-000 9906 CLS
HAZMAT Storage and Inspections	
Handbook on the Safety Program Development and Evaluation Technique (SPDET)	http://vcds.mil.ca/dsafeg/polpgms/manuals/SpdetManual/00native/a-gg-040-007-ag-001-Apr02_b.pdf
A-GG-040-004/AG-001 • Chapter 7 Hazardous Material Storage and Inventory • Chapter 8 General Hazardous Material Storage Facilities • Chapter 9 Hazardous Material Storage Facilities	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter07_e.pdf http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter08_e.pdf http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter09_e.pdf
Hazardous Materials Compatibility Chart	https://acims.mil.ca/org/4CDSG/eCR/20200304-UN-1006-1-SafetySvcs-AI%206.208%20HMM%20-%20Annex%20F%20-%20Compatibility%20Chart.pdf
National Fire Code of Canada (2020)	https://nrc.canada.ca/en/certifications-evaluations-standards/codes-canada/codes-canada-publications/national-fire-code-canada-2020
National Building Code of Canada (2020)	https://nrc.canada.ca/en/certifications-evaluations-standards/codes-canada/codes-canada-publications/national-building-code-canada-2020
HAZMAT Transport, Issue and Disposal	
A-GG-040-004/AG-001 • Chapter 11 Hazardous Waste / Recyclable Material Management • Chapter 12 Hazardous Waste Management Activity - Provincial and Territorial Legalisation	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter11_e.pdf http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter12_e.pdf
2020 Emergency Response Guide Book	https://tc.canada.ca/en/dangerous-goods/canutec/2020-emergency-response-guidebook
HAZMAT Inventories and MSDS	
A-GG-040-004/AG-001 • Chapter 7 Hazardous Material Storage and Inventory • Chapter 17 Material Safety Data Sheets (MSDS)	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter07_e.pdf http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter17_e.pdf
WHMIS 2015 – Fact Sheets	https://ccohs.ca/oshanswers/chemicals/whmis_ghs/general.html
HMRA – Database (ADM Mat)	http://materiel.mil.ca/en/policy-library-tools-policy-procedure/hazmat.page

HAZMAT References

Description	Reference (NDID, Catalogue #, URL)
HAZMAT Spills and Response	
A-GG-040-004/AG-001 • Chapter 13 Hazardous Material Spill Response	http://vcds.mil.ca/dsafeg/polpgms/manuals/HazmatSafetyManag/00native/A-GG-040-004-AG-001Chapter13_e.pdf
First Measures for Emergency Intervention – Hydrocarbon Spill	07-0704(English) 07-0705 (French)
A Guide to Spill Prevention for National Defence Spill Prevention	DGPA Creative Services – 97CS-2398
HAZMAT Legislation and Standards	
Canadian enviroOSH Legislation and standards	http://www.ccohs.ca/legislation/
Department of Justice Canada – Consolidated Legistation	https://laws-lois.justice.gc.ca/eng/acts/
Health Canada – Environmental	https://www.canada.ca/en/health-canada/services/environmental-workplace-health.html
WHMIS – Health Canada & Workplace Health	http://www.hc-sc.gc.ca/ewh-semt/occup-travail/whmis-simdut/index-eng.php
Canadian Occupational Health and Safety	http://www.ccohs.ca
Canada Labour Code - Part II: Occupational Health and Safety	https://laws-lois.justice.gc.ca/eng/acts/L-2/
Hazardous Products Act	http://laws-lois.justice.gc.ca/eng/acts/H-3
Hazardous Products Regulations	http://laws-lois.justice.gc.ca/eng/regulations/SOR-2015-17/index.html
Transport Canada	http://www.tc.gc.ca/eng/menu.htm
2020 Emergency Response Guide Book	A-LM-007-005/AX-004 https://tc.canada.ca/en/dangerous-goods/canutec/2020-emergency-response-guidebook
Environment and Climate Change Canada	https://www.canada.ca/en/environment-climate-change.html
Transport Canada – Transport Dangerous Goods Primer	http://www.tc.gc.ca/eng/tdg/publications-primer_e-263.htm
National Joint Council – Occupational Health and Safety Directive – Part XI – Hazardous Substances	https://www.njc-cnm.gc.ca/directive/d7/v23/s261/en#s261-tc-tm
Hazardous Waste – British Columbia Ministry of Environment	http://www2.gov.bc.ca/gov/topic.page?id=4C31A8F4F63B414D807AE4CF35EF9E36
Hazardous Waste Management - Alberta Environment	https://www.alberta.ca/hazardous-waste-management.aspx
Hazardous Materials and Safe Waste Management – Saskatchewan Environment	https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/hazardous-materials-and-safe-waste-management
Hazardous Waste Program – Manitoba Environmental Services	https://www.gov.mb.ca/sd/waste_management/hazardous_waste/index.html
Hazardous Waste – Ontario Ministry of Environment	http://www.ontario.ca/environment-and-energy/hazardous-waste-management-business-and-industry
Hazardous Materials – Quebec	http://www.mddep.gouv.qc.ca/matieres/dangereux-en/index.htm
Waste Dangerous Goods - Nova Scotia Environment	http://www.novascotia.ca/nse/ea/burnside.dangerous.goods.facility.relocation.asp
Hazardous Wastes – PEI	https://www.princeedwardisland.ca/en/information/communities-land-and-environment/generator-hazardous-waste
Waste Management – Newfoundland and Labrador	https://www.gov.nl.ca/ecc/env-protection/waste/
New Brunswick Environment	https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/land_waste.html
Department of the Environment Nunavut	https://www.gov.nu.ca/environment
Northwest Territories Environment and Natural Resources	http://www.enr.gov.nt.ca/
Yukon Government - Environment	https://yukon.ca/en/department-environment
HAZMAT Useful Info	
ADM(IE) - Environment	http://intranet.mil.ca/en/infrastructure-environment/environment/environment-index.page
Defence Energy and Environment Strategy	https://www.canada.ca/en/department-national-defence/corporate/reports-publications/dees.html

HAZMAT References

Description	Reference (NDID, Catalogue #, URL)
Occupational Health and Safety (OHS) Secretariat	http://intranet.mil.ca/en/health-safety-security/safety.page
MARPAC Formation Safety and Environment	http://esquimalt.mil.ca/fse
MARLANT Formation Safety and Environment	http://halifax.mil.ca/MarlantSafetyEnvironment/index.html
DLE – Director Land Environment	http://acims.mil.ca/org/dle/default.aspx
3 CDSG Environment & Safety	https://acims.mil.ca/org/3CDSG/envsafe/default.aspx
3 CDSB Garrison Wainwright Environment	http://acims.mil.ca/org/Wainwright/GRN%20Wainwright%20Environment/Forms/AllItems.aspx
3 CDSG Garrison Wainwright Safety Services	http://acims.mil.ca/org/Wainwright/Safety/default.aspx
4 CDSG Environmental Services	https://acims.mil.ca/org/4CDSG/SitePages/Environment%20Services.aspx
4 CDSG Safety Services	https://acims.mil.ca/org/4CDSG/SitePages/Safety%20Services.aspx
4 CDSG Safety - HazMat	https://acims.mil.ca/org/4CDSG/SitePages/Hazardous%20Materials%20Safety.aspx
4 CDSG – Documentation (4 Division Hazardous Materials Management Plan, 4 CDD Hazardous Materials Management)	https://acims.mil.ca/org/4CdnDiv/Page/4CDD.aspx#DSAF
5 CDSG Environmental Services Branch	http://acims.mil.ca/org/5CDSGEnvOrg/default.aspx
5 CDSG General Safety	http://acims.mil.ca/org/5CdnDiv/SafetySvcs/SitePages/Home.aspx
4TH Cdn Div TC Meaford – Environment	http://acims.mil.ca/org/4CDTC_Meaford/SitePages/Environment%20Sect.aspx
CFB Kingston Environment	http://acims.mil.ca/org/CFB%20Kingston/base-environment/default.aspx
A4 Construction Engineering Environment and Hazmat	http://winnipeg.mil.ca/cms/en/a4ce/a4ceenvhazmat.aspx
3 Wing Bagotville	http://bagotville.mil.ca/3Ere/BSE/stand/bse_f.asp
4 Wing Cold Lake Environment & Hazmat	http://documents.coldlake.mil.ca/WCommand/WEnv http://documents.coldlake.mil.ca/WCommand/Hazmat
5 Wing Goose Bay Environment & Hazmat	http://rcaf.mil.ca/en/goose-bay/goosebay-main.page
9 Wing Gander Environment & Hazmat	http://rcaf.mil.ca/en/gander/chiefofstaff/wing-environment.page
12 Wing Shearwater Safety (ERPs)	http://shearwater.mil.ca/en/safety/
14 Wing Greenwood Environment & Hazmat	http://greenwood.mil.ca/EN/programs/environment-and-hazardous-materails/prevent-pollution/hazardous-materials.aspx
16 Wing Borden Environment Health and Safety	http://borden.mil.ca/50/EHS/ehs_eng.asp
17 Wing Winnipeg Environment & Hazmat	http://17wing.winnipeg.mil.ca/cms/en/home/organizations/hazmat.aspx
19 Wing Environment Comox	http://comox.mil.ca/din_locl/organizations/wing_logistics/environment/index.aspx
22 Wing North Bay Environment & Hazmat	http://rcaf.mil.ca/en/22-wing/wing-enviro.page
CFB Borden EH&S – web site CFB Borden EH&S – SharePoint	http://borden.mil.ca/8/1.aspx?lang=eng https://collaboration-cmp.forces.mil.ca/sites/CFB%20Borden/TECHSVCS/BaseEnvO/SitePages/Home.aspx
CCME Environmental Quality Guidelines	https://ccme.ca/en/resources
General Environmental & Hazardous Materials Awareness Training (GEAT & GHMAT)	http://winnipeg.mil.ca/cms/en/A4CE/A4CEEnvHazmat/Subjects/GeneralEnvironmentalAwarenessTraining.aspx
Maritime Command Environmental Briefing (MCEB) Videos	http://esquimalt.mil.ca/fse/Training/S&E_Awareness_Briefing/Training_Videos.htm

SPECIFICATION

UNIT HAZARDOUS MATERIALS COORDINATOR

Managing Authority:

UNIT HAZARDOUS MATERIALS COORDINATOR (UHMC)

Section 1 – General

Introduction

1. Applicable to the following components/MOCs:

Special Force	Primary Reserve	Regular Force	Civilian Classification
Non-applicable	Any	Any	Any

Scope

2. Possession of this qualification will enable personnel to provide advice/support to the Unit Commanding Officer on hazardous materials (HAZMAT) subject matter.

Working Conditions

3. The working conditions for this qualification are not more stringent than those listed in the applicable Occupational Specification or in the Officer/Non-commissioned Members General Specification (OGS/NCMGS).

Selection Requirements

4. Personnel must meet the following requirements to be selected for this specialty:
   a. be approved by the Unit Commanding Officer and eligible for employment as a Unit Hazardous Materials Coordinator (UHMC);
   b. have good oral and written communications skills; and
   c. have demonstrated an ability to work independently.

Method of Qualification

5. Personnel shall be awarded the qualification by one of the following methods:
   a. after completion of the UHMC Course;
   b. by previous employment;
   c. in-service course(s) that include(s) the content of the Unit HAZMAT Coordinator Course; or
   d. a similar out-service course.

6. The authority for awarding the qualification is: Base Environment Officer or Base HazMat Officer.

Section 2 – Performance Requirements

Tasks

1. Advise on selection of HAZMAT for use within the workplace
2. Advise on procurement of HAZMAT for use within the workplace
3. Advise on reception of HAZMAT from suppliers
4. Advise on use of HAZMAT in the workplace
5. Advise on handling of HAZMAT for the purpose of storage and for distribution
6. Advise on storage of HAZMAT
7. Advise on transport of HAZMAT / coordination of HAZMAT delivery
8. Advise on issue of HAZMAT to users
9. Advise on disposal of HAZMAT through local disposal system
10. Maintain Unit HAZMAT inventory
11. Maintain Material Safety Data Sheets
12. Inspect HAZMAT storage and use areas
13. Adhere to HAZMAT procedures, plans and programs
14. Maintain Unit HAZMAT plan
15. Participate in audit, review and verification of HAZMAT procedures, plans and programs
16. Promote HAZMAT awareness
17. Ensure all Unit personnel have necessary and appropriate HAZMAT training
18. Coordinate spill response
19. Liaise with Base HAZMAT Officer

Skills (1, 2, 3, 4, 5 – levels described on the following page) ..... **Level**

1. Interpreting HAZMAT documentation 3
2. Written communication 2
3. Oral communication 2
4. Locating/extracting information from publications, correspondence, documents .. 2

Knowledge (1, 2, 3, 4, 5 – levels described on the following page) ..... **Level**

1. HAZMAT procedures, plans and programs 3
2. HAZMAT inspections, audits, and reviews 3
3. HAZMAT inventories and Safety Data Sheets (SDS) 3
4. Spill prevention, preparedness, response and reporting 3
5. HAZMAT policies 2
6. DAOD 4003-1, Hazardous Materials Management 2
7. Individual responsibility – due diligence 2
8. HAZMAT lifecycle management 2
9. HAZMAT legislation and regulations 1
10. Hazardous waste management 1
11. Environment, Health and Safety (EH&S) procedures, plans and programs 1
12. Sustainable Development Strategy 1

Description of skill and knowledge levels

Level	**Task / Skill**	**Knowledge**
1	The level of proficiency required to perform parts or elements of duties and tasks under continuous supervision	An awareness of the basic definitions and concepts associated with a topic or a body of knowledge
2	The level of proficiency normally required to perform duties and tasks under non-continuous supervision	The level of understanding of definitions and basic concepts which enables the relating of this knowledge to job requirements
3	The level of proficiency required to independently and safely perform duties and tasks	The level of understanding of theory and principles of a topic or body of knowledge that is usually gained through formal training and job experience and which enables critical thought and independent performance
4	The level of proficiency which usually can be acquired by considerable training and extensive practical job experience	The level of knowledge which is gained from formal training and education and considerable job experience. This knowledge enables the synthesis/integration of theory facts and practical lessons learned to support the identification of solutions to non-routine problems
5	The level of proficiency indicated by a mastery of techniques and expert application of procedures	A recognized level of expertise, which includes a mastery of theory and application, related to a given body of knowledge

DAOD 4003-1

Hazardous Materials Management

Identification

Date of Issue	1998-01-30
Application	This is an order that applies to members of the Canadian Forces (CF) and a directive that applies to employees of the Department of National Defence (DND).
Supersession	CFAO 36-55, Hazardous Materials Management
Approval Authority	Issued under authority of the Assistant Deputy Minister (Infrastructure and Environment) (ADM(IE)).
Enquiries	Director, Environmental Protection (D Env P)

Definitions

Delegated Procurement Authority	The delegated procurement authority is the individual given responsibility to obtain HAZMAT. **(autorité déléguée en matière d'achat)**
Hazardous Material (HAZMAT)	HAZMAT is any material that, if handled improperly, can endanger human health and well-being or the environment or equipment. Some examples of HAZMAT are poisons, corrosive agents, flammable substances, ammunition and explosives. **(matières dangereuses)**
HAZMAT Control Authority	The HAZMAT control authority is an individual acting on the authority of the Commanding Officer to approve the introduction or continued use of a HAZMAT. **(matières dangereuses)**
Technical Authority	The technical authority is the individual responsible for providing information, guidance and advice on the technical aspects of a product. **(autorité fonctionnelle)**

Operating Principles

Background

HAZMAT, if improperly used or handled, could endanger the environment and the health of personnel, or damage vital military material. Federal and provincial governments have established laws and regulations for the use, storage, transport and disposal of HAZMAT.

The DND and the CF HAZMAT management activities must meet or exceed the letter and spirit of all applicable federal acts, regulations, policy and guidelines and, where appropriate, be compatible with provincial acts, regulations and guidelines and municipal and international standards.

Prime Directive

HAZMAT shall be selected, procured, handled, used, stored, transported and disposed of in a manner that protects human health, the environment and equipment and meets legal requirements. Due diligence shall be exercised in carrying out those duties and responsibilities that are associated with such protection.

Due Diligence

In the course of their action or duty, all individuals shall maintain a reasonable standard of care for the environment and for the health and safety of others. That reasonable standard of care is known as "due diligence". In exercising due diligence, individuals have a duty to:

- know and obey federal laws and regulations on handling HAZMAT;
- respect provincial laws and municipal bylaws where appropriate;
- exercise caution;
- prepare for risks that a thoughtful and reasonable person would foresee; and
- respond to risks and incidents as soon as practicable.

Procurement

Where practicable, HAZMAT procurement shall be decentralized and delegated to an appropriate level.

Use and Storage

Every effort shall be made to:

- reduce HAZMAT usage;
- avoid or minimize the creation of pollutants and wastes; and
- limit the storing of HAZMAT to quantities necessary to meet operational requirements.

Life Cycle Management

The life cycle aspects of HAZMAT management (initial selection, procurement, handling, use, storage, transportation and disposal) shall be given appropriate consideration in DND and CF planning. Emphasis should be placed on whether the HAZMAT need be acquired, given its characteristics.

The use of the DND material management information system for life cycle management of HAZMAT is mandatory.

Organizations, Units and Other Elements

All organizations, units and other elements in contact with HAZMAT shall:

- take appropriate action to ensure that their areas of responsibility or concern are adequately covered by developing necessary procedures and instructions that reflect DND policy, technology, industry best practices, laws of Canada and, where appropriate, international standards;
- appoint an individual as HAZMAT control authority to review and, if appropriate, approve the introduction into or continued use of, HAZMAT in the workplace and ensure the safe storage and disposal of HAZMAT;
- have an emergency response plan in place to deal with HAZMAT problems that may arise; and
- ensure that CF members and DND employees are trained in the handling, use, storage and disposal of hazardous waste to the degree necessary, depending upon their contact with HAZMAT.

Responsibilities

Overview

For each of the following activities involving HAZMAT there are specific responsibilities for selected individuals:

- Initial Selection;
- Procurement;
- Transportation;
- Use; and
- Handling, Storage and Disposal.

Initial Selection

During the initial selection of HAZMAT, the HAZMAT control authority, the technical authority and users are responsible to perform the following actions:

- consider choices;
- select material;
- conduct tests and trials;
- assess risk;
- obtain technical data including Material Safety Data Sheets (MSDS); and
- develop specifications.

Procurement

During the procurement of HAZMAT, the delegated procurement authority and the technical authority are responsible to perform the following actions:

- select the source of supply and the means of procurement;
- identify and approve products against approved lists; and
- make appropriate material data entries.

Use

During the use of HAZMAT, users and their supervisors are responsible to perform the following actions:

- follow engineered controls;
- use Personal Protective Equipment (PPE);
- review the MSDS;
- make appropriate data entries; and
- provide spill response.

Transportation

The transport of HAZMAT requires carriers, shippers and receivers to:

- package, label and place symbols and placards;
- load and unload;
- record manifests;
- choose the appropriate mode of transportation; and
- provide spill response

Note – The transportation of HAZMAT shall be in accordance with the *Transport of Dangerous Goods Act and Regulations*.

Handling, Storage and Disposal

Anyone who handles, stores or disposes of HAZMAT is responsible to perform the following actions in accordance with procedures established:

Handling

- receive, issue, package, decant and label HAZMAT;
- have PPE available and use where necessary; and
- provide spill response.

Storage

- ensure compatibility of HAZMAT;
- select a proper storage site (consider HAZMAT, site preparation, risk of fire, detectors, showers and fire alarms);
- use and have available PPE;
- control access and provide security; and
- provide spill response.

Disposal

- ensure compatibility of hazardous waste;
- select an appropriate waste handling location (consider HAZMAT, site preparation, risk of fire, detectors, showers and fire alarms);
- control access and provide security;
- test and classify waste;
- select a disposal option (consider minimizing, reusing, recycling);
- select a disposal contractor;
- make appropriate data entries; and
- provide spill response.

Civil Legal Liabilities

A person who causes damage to the environment and contravenes a federal or provincial law, or endangers human health, is liable on conviction in civilian court to a fine, or to imprisonment for certain offences, or to both.

References

Source References

- *Canadian Environmental Protection Act* and Regulations
- *Canada Labour Code*, Part II and Regulations
- *Hazardous Products Act* and Regulations
- *Transportation of Dangerous Goods Act* and Regulations

Related References

- A-GG-040-004/AG-001, *Hazardous Materials Safety*
- A-LM-187-004/JS-001, *The Safe Storage, Handling and Disposal of Hazardous Materials*
- 1996 North American Emergency Response Guidebook, Transport Canada

Policy, Library & Tools

Hazardous Materials Reference Application

Materiel Group Instructions

DGMPD Instructions

Operation Honour Phase II - Materiel Group Direction

Designation of Commanding Officers in the Materiel Group

Arrivals, departures and centralized processes

Resources for new employees

Hazardous Materials Reference Application (HMRA)

The mandatory use of the HMRA by the Department of National Defence (DND) and Canadian Armed Forces (CAF) ensures the department protects the health and safety of employees, as well as, the environment (Hazardous Materials Management Framework, CANFORGEN 093/11).

HMRA has a Holdings Module which records Hazardous Materials (HazMat) on site to comply with legislative and emergency response requirements. HMRA provides product ranking to assist with the selection of a preferred product in terms of health, safety, and the environment.

The Directorate of Supply Chain Operations (DSCO) manages the HMRA on behalf of ADM(Mat) providing the following services:

- provides assistance to users (by phone or e-mail)
- delivers HMRA training
- maintains reference data (pick lists) used throughout HMRA
- creates statements of requirements for new functionality and troubleshoots errors

Contact HMRA's mailbox for the following requests:

- requiring assistance using HMRA (when local base support is not available)
- entering new product records (SDS) into HMRA
- resetting passwords
- adding records to List of Values (LoV)
  - section names
  - room names
  - storage names
- reporting bugs
- designing ad hoc reports
- suggesting areas of improvements

Useful Links

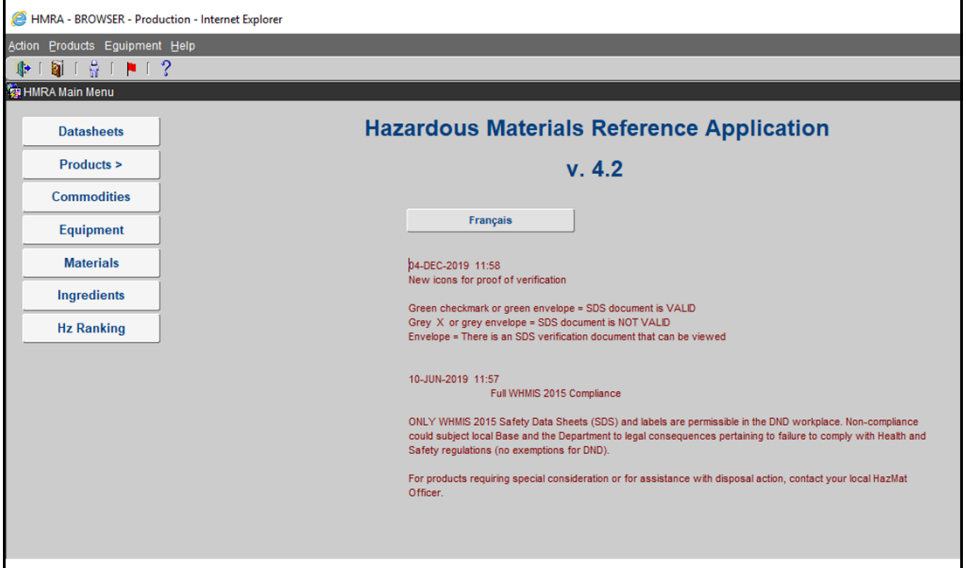
The following links provide access to HMRA based on the user's profile:

- HMRA – Full access
- Browser – Read only access to SDS, Product Ranking module
- Safety Data Sheet (SDS) – Read only access to SDS module
- Requests for an HMRA user profile can be sent to one's Local Administrator (DOC, 139 KB) or the HMRA mailbox

HMRA Product Selection

- The tool assists in choosing HAZMAT products for the workplace. The example finds a preferred adhesive.
- No password is needed if using the HMRA Browser.
- Each slide progressively chooses the product, obtains the SDS, and examines other risks associated with the product.

1



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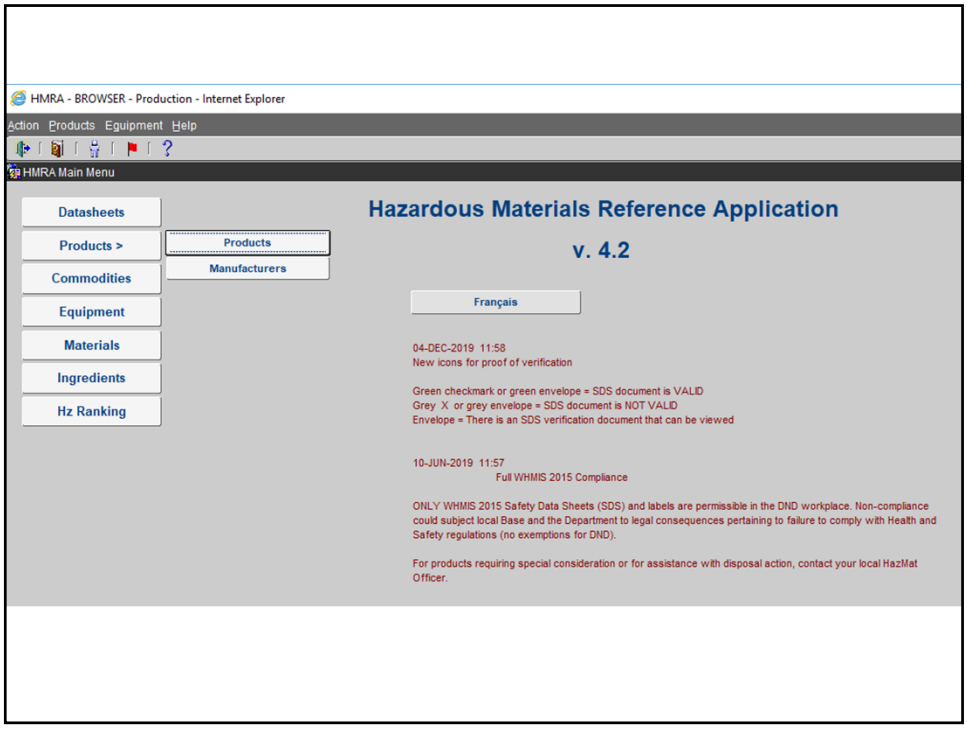
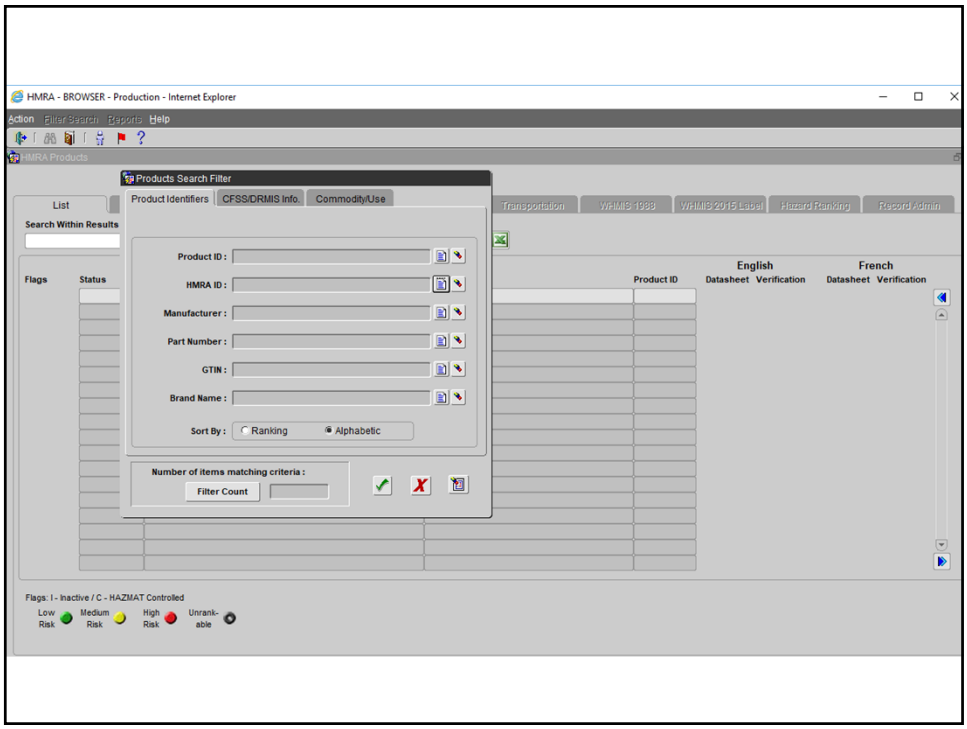
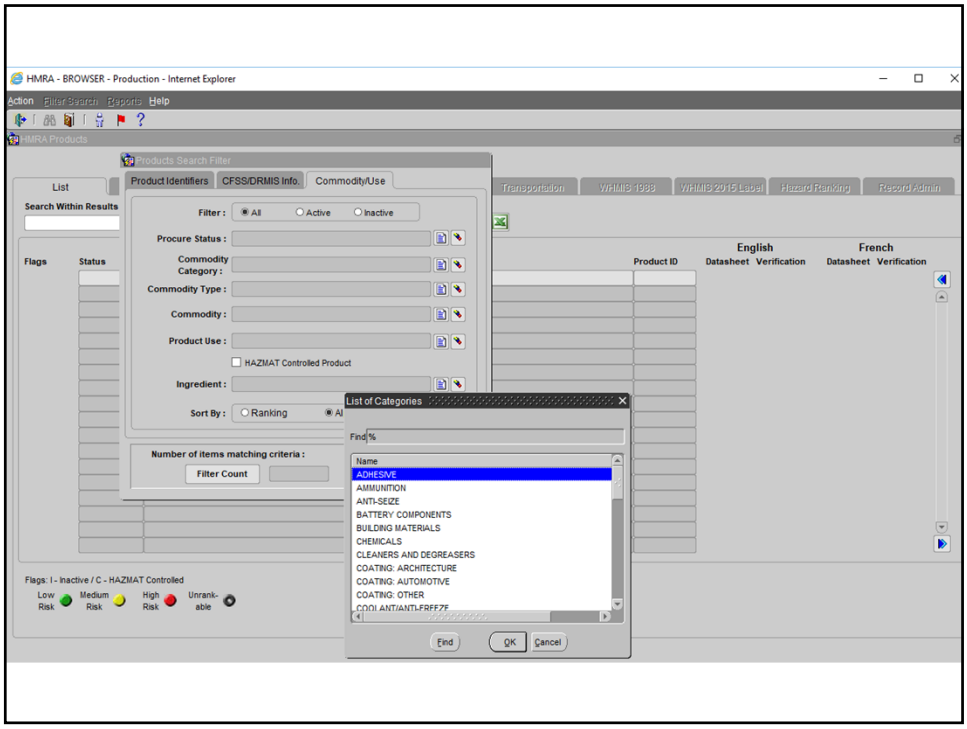

HMRA - BROWSER - Production - Internet Explorer
Action Products Equipment Help
HMRA Main Menu
Datasheets
Products >
Commodities
Equipment
Materials
Ingredients
Hz Ranking
Products
Manufacturers
Hazardous Materials Reference Application
v. 4.2
Français
04-DEC-2019 11:58
New icons for proof of verification
Green checkmark or green envelope = SDS document is VALID
Grey X or grey envelope = SDS document is NOT VALID
Envelope = There is an SDS verification document that can be viewed
10-JUN-2019 11:57
Full WHMIS 2015 Compliance
ONLY WHMIS 2015 Safety Data Sheets (SDS) and labels are permissible in the DND workplace. Non-compliance could subject local Base and the Department to legal consequences pertaining to failure to comply with Health and Safety regulations (no exemptions for DND).
For products requiring special consideration or for assistance with disposal action, contact your local HazMat Officer.

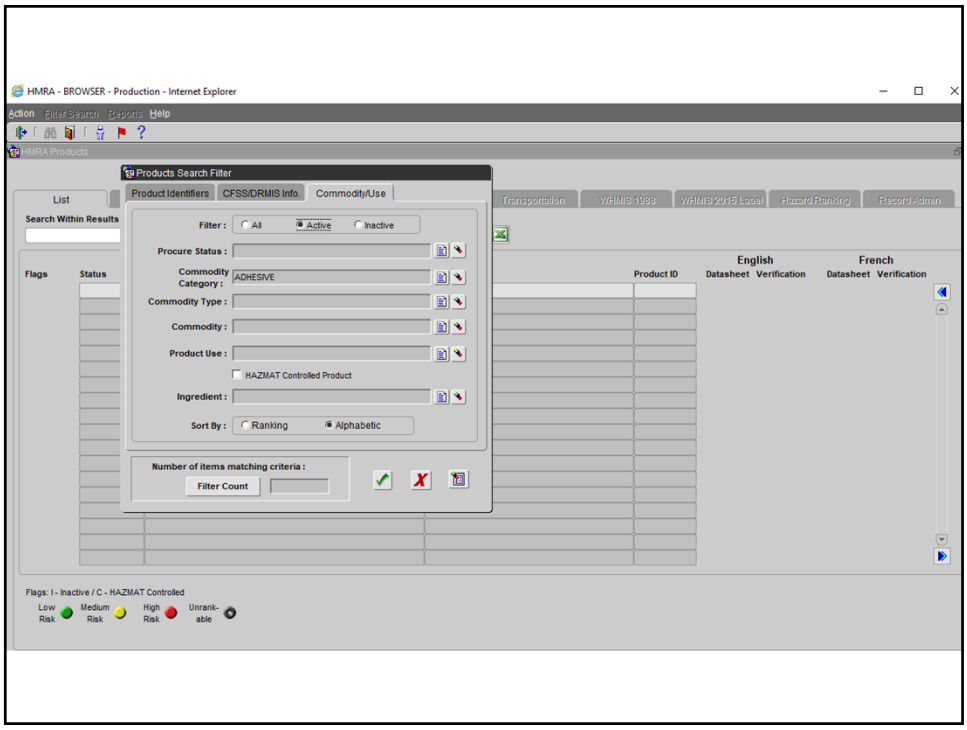
3


HMRA - BROWSER - Production - Internet Explorer
Action Filter Search Reports Help
HMRA Products
Products Search Filter
Product Identifiers
CFSS/DRMIS Info.
Commodity/Use
List
Search Within Results
Product ID :
HMRA ID :
Manufacturer :
Part Number :
GTIN :
Brand Name :
Sort By : Ranking Alphabetic
Number of items matching criteria :
Filter Count
Transportation
WHMIS 1988
WHMIS 2015 Label
Hazard Ranking
Record Admin
Flags
Status
Product ID
English
Datasheet Verification
French
Datasheet Verification
Flags: I - Inactive / C - HAZMAT Controlled
Low Risk
Medium Risk
High Risk
Unrank-able

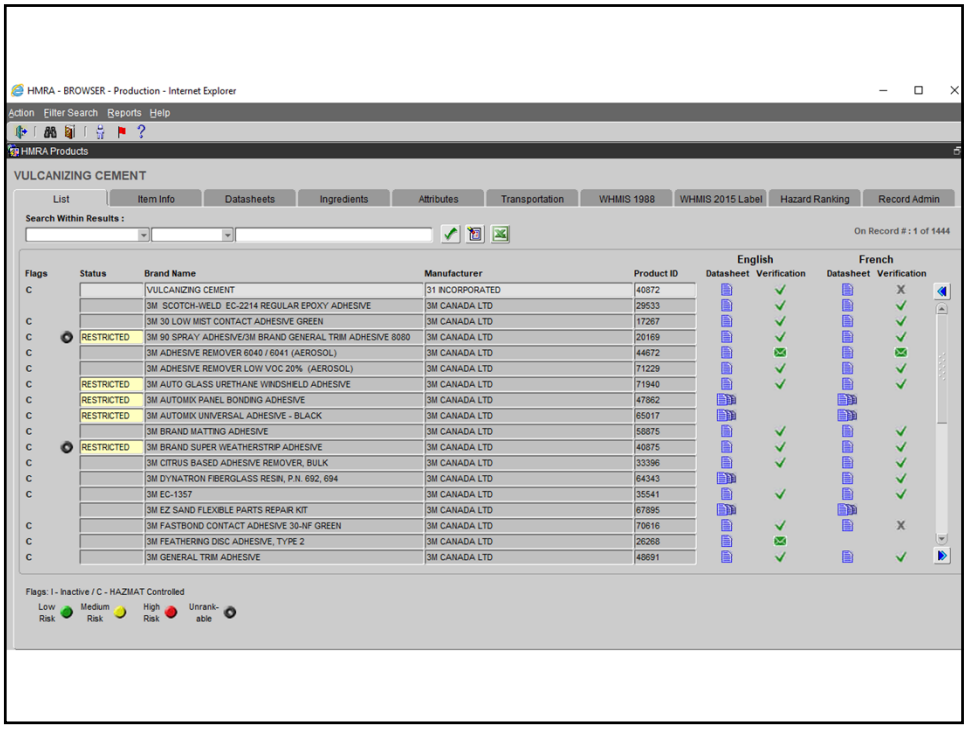
4


HMRA - BROWSER - Production - Internet Explorer
Action Filter Search Reports Help
HMRA Products
Products Search Filter
Product Identifiers
CFSS/DRMIS Info.
Commodity/Use
List
Search Within Results
Flags
Status
Filter : All Active Inactive
Procure Status :
Commodity Category :
Commodity Type :
Commodity :
Product Use :
HAZMAT Controlled Product
Ingredient :
Sort By : Ranking
Number of items matching criteria :
Filter Count
List of Categories
Find %
Name
ADHESIVE
AMMUNITION
ANTI-SEIZE
BATTERY COMPONENTS
BUILDING MATERIALS
CHEMICALS
CLEANERS AND DEGREASERS
COATING: ARCHITECTURE
COATING: AUTOMOTIVE
COATING: OTHER
Find
OK
Cancel
Transportation
WHMIS 1988
WHMIS 2015 Label
Hazard Ranking
Record Admin
Product ID
English
Datasheet Verification
French
Datasheet Verification
Flags: I - Inactive / C - HAZMAT Controlled
Low Risk
Medium Risk
High Risk
Unrank-able

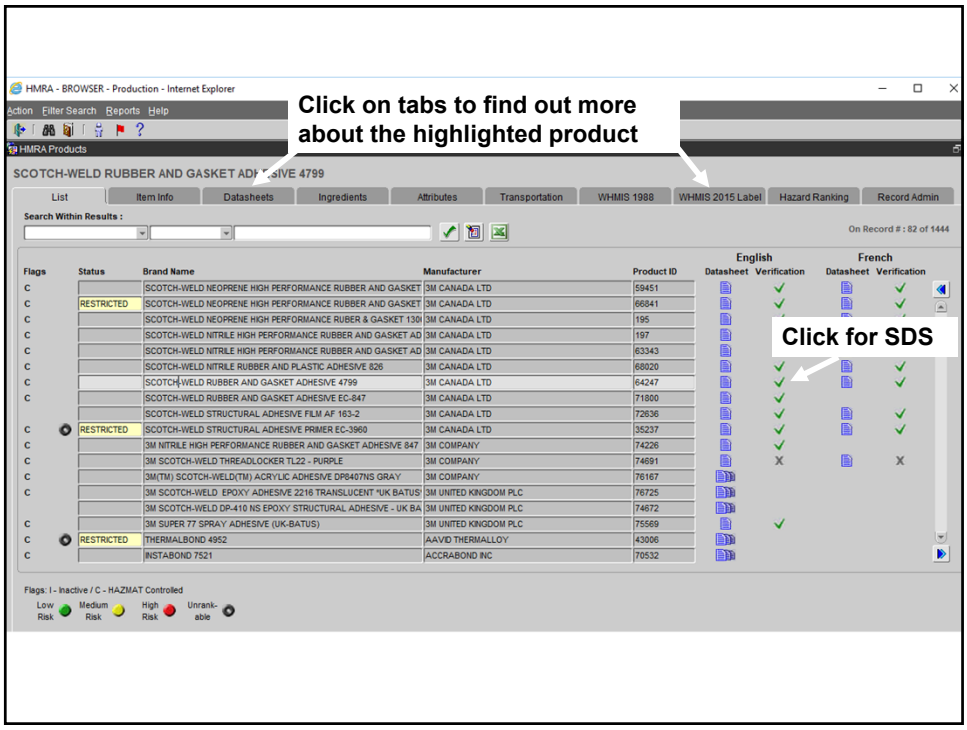
5


HMRA - BROWSER - Production - Internet Explorer
Action Filter Search Reports Help
HMRA Products
Products Search Filter
Product Identifiers
CFSS/DRMIS Info.
Commodity/Use
List
Search Within Results
Flags
Status
Filter : All Active Inactive
Procure Status :
Commodity Category : ADHESIVE
Commodity Type :
Commodity :
Product Use :
HAZMAT Controlled Product
Ingredient :
Sort By : Ranking Alphabetic
Number of items matching criteria :
Filter Count
Transportation
WHMIS 1988
WHMIS 2015 Label
Hazard Ranking
Record Admin
Product ID
English
Datasheet Verification
French
Datasheet Verification
Flags: I - Inactive / C - HAZMAT Controlled
Low Risk
Medium Risk
High Risk
Unrank-able

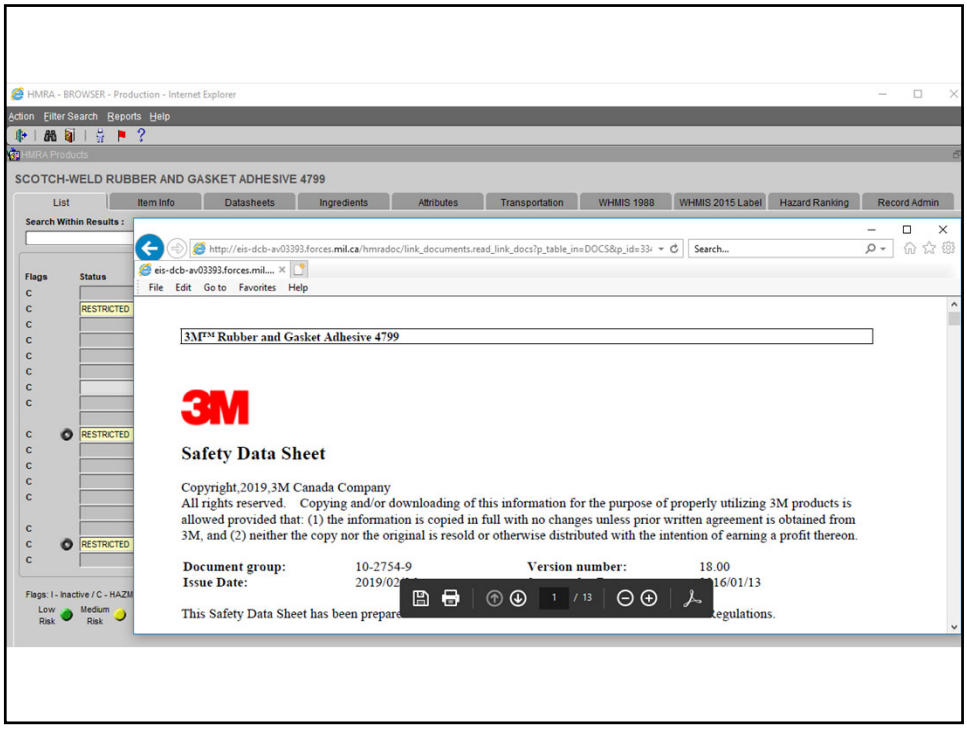
6


HMRA - BROWSER - Production - Internet Explorer
Action Filter Search Reports Help
HMRA Products
VULCANIZING CEMENT
List Item Info Datasheets Ingredients Attributes Transportation WHMIS 1988 WHMIS 2015 Label Hazard Ranking Record Admin
Search Within Results :
On Record # : 1 of 1444
Flags Status Brand Name Manufacturer Product ID English Datasheet English Verification French Datasheet French Verification
C VULCANIZING CEMENT 31 INCORPORATED 40872
3M SCOTCH-WELD EC-2214 REGULAR EPOXY ADHESIVE 3M CANADA LTD 29533
C 3M 30 LOW MIST CONTACT ADHESIVE GREEN 3M CANADA LTD 17267
C RESTRICTED 3M 90 SPRAY ADHESIVE/3M BRAND GENERAL TRIM ADHESIVE 8080 3M CANADA LTD 20169
C 3M ADHESIVE REMOVER 6040 / 6041 (AEROSOL) 3M CANADA LTD 44672
C 3M ADHESIVE REMOVER LOW VOC 20% (AEROSOL) 3M CANADA LTD 71229
C RESTRICTED 3M AUTO GLASS URETHANE WINDSHIELD ADHESIVE 3M CANADA LTD 71940
C RESTRICTED 3M AUTOMIX PANEL BONDING ADHESIVE 3M CANADA LTD 47862
C RESTRICTED 3M AUTOMIX UNIVERSAL ADHESIVE - BLACK 3M CANADA LTD 65017
C 3M BRAND MATTING ADHESIVE 3M CANADA LTD 58875
C RESTRICTED 3M BRAND SUPER WEATHERSTRIP ADHESIVE 3M CANADA LTD 40875
C 3M CITRUS BASED ADHESIVE REMOVER, BULK 3M CANADA LTD 33396
C 3M DYNATRON FIBERGLASS RESIN, P.N. 692, 694 3M CANADA LTD 64343
C 3M EC-1357 3M CANADA LTD 35541
3M EZ SAND FLEXIBLE PARTS REPAIR KIT 3M CANADA LTD 67895
C 3M FASTBOND CONTACT ADHESIVE 30-NF GREEN 3M CANADA LTD 70616
C 3M FEATHERING DISC ADHESIVE, TYPE 2 3M CANADA LTD 26268
C 3M GENERAL TRIM ADHESIVE 3M CANADA LTD 48691
Flags: I - Inactive / C - HAZMAT Controlled
Low Risk Medium Risk High Risk Unrank-able

7


HMRA - BROWSER - Production - Internet Explorer
Click on tabs to find out more about the highlighted product
Action Filter Search Reports Help
HMRA Products
SCOTCH-WELD RUBBER AND GASKET ADHESIVE 4799
List Item Info Datasheets Ingredients Attributes Transportation WHMIS 1988 WHMIS 2015 Label Hazard Ranking Record Admin
Search Within Results :
On Record # : 82 of 1444
Click for SDS
Flags Status Brand Name Manufacturer Product ID English Datasheet English Verification French Datasheet French Verification
C SCOTCH-WELD NEOPRENE HIGH PERFORMANCE RUBBER AND GASKET 3M CANADA LTD 59451
C RESTRICTED SCOTCH-WELD NEOPRENE HIGH PERFORMANCE RUBBER AND GASKET 3M CANADA LTD 66841
C SCOTCH-WELD NEOPRENE HIGH PERFORMANCE RUBBER & GASKET 130 3M CANADA LTD 195
C SCOTCH-WELD NITRILE HIGH PERFORMANCE RUBBER AND GASKET AD 3M CANADA LTD 197
C SCOTCH-WELD NITRILE HIGH PERFORMANCE RUBBER AND GASKET AD 3M CANADA LTD 63343
C SCOTCH-WELD NITRILE RUBBER AND PLASTIC ADHESIVE 826 3M CANADA LTD 68020
C SCOTCH-WELD RUBBER AND GASKET ADHESIVE 4799 3M CANADA LTD 64247
C SCOTCH-WELD RUBBER AND GASKET ADHESIVE EC-847 3M CANADA LTD 71800
SCOTCH-WELD STRUCTURAL ADHESIVE FILM AF 163-2 3M CANADA LTD 72636
C RESTRICTED SCOTCH-WELD STRUCTURAL ADHESIVE PRIMER EC-3960 3M CANADA LTD 35237
C 3M NITRILE HIGH PERFORMANCE RUBBER AND GASKET ADHESIVE 847 3M COMPANY 74226
C 3M SCOTCH-WELD THREADLOCKER TL22 - PURPLE 3M COMPANY 74691
C 3M(TM) SCOTCH-WELD(TM) ACRYLIC ADHESIVE DP8407NS GRAY 3M COMPANY 76167
C 3M SCOTCH-WELD EPOXY ADHESIVE 2216 TRANSLUCENT *UK BATUS 3M UNITED KINGDOM PLC 76725
3M SCOTCH-WELD DP-410 NS EPOXY STRUCTURAL ADHESIVE - UK BA 3M UNITED KINGDOM PLC 74672
C 3M SUPER 77 SPRAY ADHESIVE (UK-BATUS) 3M UNITED KINGDOM PLC 75569
C RESTRICTED THERMALBOND 4952 AAVID THERMALLOY 43006
C INSTABOND 7521 ACCRABOND INC 70532
Flags: I - Inactive / C - HAZMAT Controlled
Low Risk Medium Risk High Risk Unrank-able

8


HMRA - BROWSER - Production - Internet Explorer
Action Filter Search Reports Help
HMRA Products
SCOTCH-WELD RUBBER AND GASKET ADHESIVE 4799
List
Item Info
Datasheets
Ingredients
Attributes
Transportation
WHMIS 1988
WHMIS 2015 Label
Hazard Ranking
Record Admin
Search Within Results :
Flags
Status
RESTRICTED
3M™ Rubber and Gasket Adhesive 4799
3M
Safety Data Sheet
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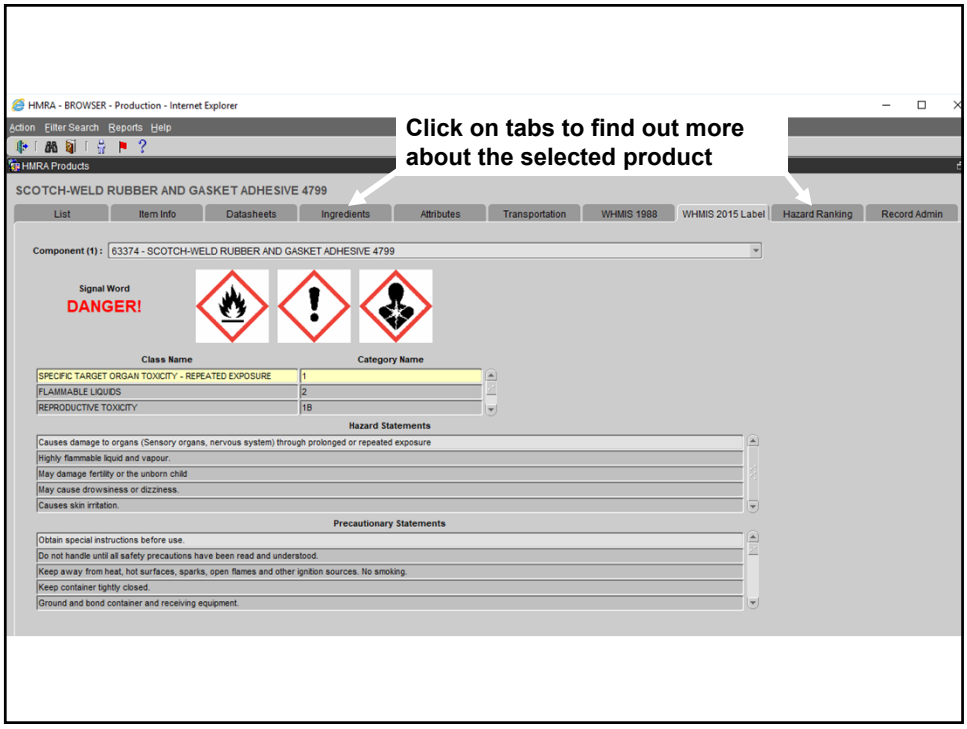
Document group: 10-2754-9
Version number: 18.00
Issue Date:
Low Risk
Medium Risk

9


HMRA - BROWSER - Production - Internet Explorer
Action Filter Search Reports Help
HMRA Products
Click on tabs to find out more about the selected product
SCOTCH-WELD RUBBER AND GASKET ADHESIVE 4799
List
Item Info
Datasheets
Ingredients
Attributes
Transportation
WHMIS 1988
WHMIS 2015 Label
Hazard Ranking
Record Admin
Component (1) :
63374 - SCOTCH-WELD RUBBER AND GASKET ADHESIVE 4799
Signal Word
DANGER!
Class Name
Category Name
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE
1
FLAMMABLE LIQUIDS
2
REPRODUCTIVE TOXICITY
1B
Hazard Statements
Causes damage to organs (Sensory organs, nervous system) through prolonged or repeated exposure
Highly flammable liquid and vapour.
May damage fertility or the unborn child
May cause drowsiness or dizziness.
Causes skin irritation.
Precautionary Statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.

10

4 Div HMRA Policy for Max Quantity and Quantity

SOURCE REFERENCES:

A. DAOD 4003-1 Hazardous Materials Management
B. CAO 11-69 Hazardous Materials Management
C. A-GG-040-004/AG-001 GSP, HMS & MM
D. ADM(Mat) HMRA Guide – HAZMAT Inventory
E. 4 CDD SS-001 Hazardous Materials Management

SUPERSEDED ORDER: NIL

APPLICATION: This directive applies to the following DND/CAF facilities: Bases, Armouries, Garrisons, Formations and Units. It does not apply to deployed operations. This directive is applicable to all personnel of The Department of National Defence/Canadian Armed Forces (DND/CAF), Defence Construction Canada (DCC), Canadian Forces Housing Agency (CFHA), Personnel Support Program (PSP), Public Services and Procurement Canada (PSPC) performing work under contract for DND, facility maintenance contractors and all external contractors operating within 4 Cdn Div, and all persons granted access.

EFFECTIVE DATE: 20 Oct 22

DATE REVIEWED: 20 Oct 22

REVIEWED BY: Isabelle Fortin

OPI/BRANCH: ADM(Mat) DSCO

APPROVING AUTHORITY: 4 Div Sr HAZMAT O

Introduction:
In order to increase the utilization rate of the Hazardous Materials Reference Application (HMRA) amongst the units in 4 Div, the first step for the Unit Hazardous Materials Coordinator (UHMC) must be made as easy as possible.

Below is a summary of the policy update. This can be a temporary policy “pivot” before pivoting back to the status quo of equally weighting quantity and max quantity once units make significant improvement across 4 Div.

New 4 Div HMRA policy:
In order to increase HMRA ease of use among units, ensuring the accuracy of the maximum quantity (max quantity) column for each product must be prioritized over the "quantity" column because max quantity is more relevant for fire safety to inform fire fighters of the worst case scenario of quantities of stored HAZMAT. Max quantity needs to be updated less frequently than quantity, which will save time and effort for UHMCs.

No policy change for:

- It is still important to ensure that the **container size** is accurate.
- Maintain a safety data sheet (SDS) for each product at the Unit Safety Board and at the HAZMAT locker, petroleum, oil, and lubricant (POL) shed, or individual storage area (ISA).
- It is still important to add and remove **HAZMAT products** (rows) to ensure that the HMRA holdings report is an accurate digital representation of the HAZMAT storage areas in the workplace.
- It is still important to pay attention to the **"procure status"** column where "prohibited," "discontinued," and "duplicate records" must be avoided. Prohibited and discontinued products must be discarded as hazardous waste.
- Pay extra attention to "restricted" HAZMAT products because they are more hazardous to worker health than products without this warning. If possible, restricted products should be avoided.

Adding and removing products to HMRA HAZMAT storage areas changes the number of rows, which will automatically update the "date last modified" in the holdings report.
As well, renaming storage areas, HAZMAT lockers, and POL sheds would also automatically update the "date last modified."

Policy intention:
This simplification will hopefully encourage unit COs and UHMCs to improve their compliance with army HAZMAT requirements. This policy pivot is especially timely with the annual Halloween due date for units to update their HMRA holdings. ADM(Mat) staff generate a report **every Halloween (31 Oct)** on all units and pay close attention to certain data points, such as the date last modified, number of duplicate records, and number of prohibited/discontinued/restricted HAZMAT products. ADM(Mat) compares the annual HMRA inventory report to previous years to look for improvement over time.

These Fact Sheets summarize key requirements of WHMIS 2015 which incorporates the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) for Canadian Workplaces. See **WHMIS.org** for more information.

WHMIS 2015 – An Overview

What is GHS?

GHS is an international initiative to standardize chemical hazard classification and communication globally. GHS has been adopted by many of Canada's trading partners, including the United States.

WHMIS is a national hazard communication system that provides information on the safe use of hazardous products in Canadian workplaces. GHS has not replaced WHMIS. WHMIS has incorporated GHS elements, resulting in new **standardized**:

- Classification criteria
- Label requirements
- Safety data sheet (SDS) requirements (formerly material safety data sheet)

Classification

Classification criteria have changed for WHMIS 2015. WHMIS retains the same level of protection it previously offered, and incorporates some new hazard classes, e.g. Aspiration Hazard. See the *WHMIS 2015 Hazard Classes* Fact Sheet for more information.

Supplier Labels

Supplier labels have a few new requirements. Most of the label elements are standardized. Most hazard classes and categories have a prescribed signal word, hazard statements, pictogram(s), and precautionary statement(s). Supplier labels continue to be required in both English and French. See the *WHMIS 2015 Supplier Labels* Fact Sheet for more information.

Hazard communication is more standardized with prescribed hazard statements, signal words, pictograms and precautionary statements.

Safety Data Sheets (SDSs)

SDSs follow a standard 16-section format with specific information requirements.

SDSs continue to be required in both English and French.

The SDSs must be accurate at the time of sale or import, for each sale or import. For further information, see the *WHMIS 2015 Safety Data Sheets* Fact Sheet.

Confidential Business Information – Trade Secrets

There are no significant changes to the trade secrets rules.

Roles, Responsibilities and Duties

The current roles and responsibilities for suppliers, employers and workers remain unchanged in WHMIS 2015.

Suppliers still provide labels and SDSs to customers. See the *WHMIS 2015 Information for Suppliers and Importers* Fact Sheet for more information.

Employers still ensure that all hazardous products are properly labelled and make up-to-date SDSs readily available to workers. Employers also provide worker education and training and ensure appropriate control measures to protect the health and safety of workers. See the *WHMIS 2015 Information for Employers* Fact Sheet for more information.

Workers still participate in WHMIS training programs, take necessary steps to protect themselves and their co-workers, and participate in identifying and controlling hazards.

Transition

To allow time for suppliers, employers and workers to adjust to the new system, WHMIS 2015 implementation will take place over a multi-year transition period.

Visit whmis.gc.ca or WHMIS.org for more information.

CCOHS
Canadian Centre for Occupational Health and Safety

WHMIS 2015

Workplace Hazardous Materials Information System

f a c t s h e e t s

These Fact Sheets summarize key requirements of WHMIS 2015 which incorporates the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) for Canadian Workplaces. See **WHMIS.org** for more information.

Pictograms and Their Hazards

WHMIS 2015	Types of Hazards
	**Gases under pressure**
	**Flammables** (gases, aerosols, liquids, solids), **Pyrophoric** (liquids, solids, gases), **Self-reactive substances and mixtures**, **Self-heating substances and mixtures**, **Substances and mixtures which, in contact with water, emit flammable gases**, **Organic peroxides**
	**Oxidizing** (liquids, solids, gases)
	**Acute toxicity** (fatal or toxic)
	**Carcinogenicity, Germ cell mutagenicity, Respiratory sensitization, Reproductive toxicity, Specific target organ toxicity - single exposure, Specific target organ toxicity - repeated exposure, Aspiration hazard**
	**Acute toxicity** (harmful), **Skin irritation, Eye irritation, Skin sensitization, Specific target organ toxicity - single exposure** (respiratory irritation or drowsiness or dizziness)
	**Corrosive to metals, Skin corrosion, Serious eye damage**
	**Self-reactive substances and mixtures, Organic peroxides**
	**Biohazardous infectious materials**

WHMIS 2015 does not incorporate the GHS Explosives and Environmental Hazard Classes.

	**Explosives**
	**Hazardous to the aquatic environment**
	**Hazardous to the ozone layer**

The requirements for pictograms are based on the severity of the hazard. In some cases no pictogram is required.
For Physical and Health Hazards Not Otherwise Classified, the supplier must use a WHMIS 2015 pictogram appropriate for the hazard.

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WHMIS 2015

Workplace Hazardous Materials Information System

fact sheets

These Fact Sheets summarize key requirements of WHMIS 2015 which incorporates the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) for Canadian Workplaces. See **WHMIS.org** for more information.

Hazard Classes

Physical Hazard Classes

Combustible Dusts
Corrosive to Metals
Flammable Aerosols
Flammable Gases
Flammable Liquids
Flammable Solids
Gases Under Pressure
Organic Peroxides
Oxidizing Gases
Oxidizing Liquids
Oxidizing Solids
Pyrophoric Gases
Pyrophoric Liquids
Pyrophoric Solids
Self-Heating Substances and Mixtures
Self-Reactive Substances and Mixtures
Simple Asphyxiants
Substances and Mixtures Which, in Contact with Water, Emit Flammable Gases
Physical Hazards Not Otherwise Classified

Health Hazard Classes

Acute Toxicity
Aspiration Hazard
Biohazardous Infectious Materials
Carcinogenicity
Germ Cell Mutagenicity
Reproductive Toxicity
Respiratory or Skin Sensitization
Serious Eye Damage/Eye Irritation
Skin Corrosion/Irritation
Specific Target Organ Toxicity - Repeated Exposure
Specific Target Organ Toxicity - Single Exposure
Health Hazards Not Otherwise Classified

WHMIS 2015 is based on the 5th revised edition of the GHS. See WHMIS.org for more information.

WHMIS 2015 does not incorporate the GHS Explosives and Environmental Hazard Classes.

Explosives

Hazardous to the aquatic environment
Hazardous to the ozone layer

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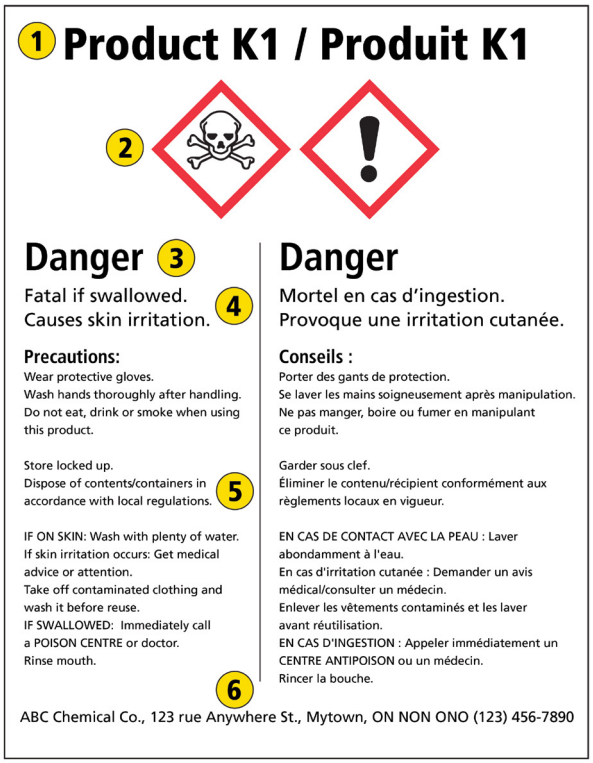
These Fact Sheets summarize key requirements of WHMIS 2015 which incorporates the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) for Canadian Workplaces. See **WHMIS.org** for more information.

Supplier Labels

The product label is the worker's first source of information about the hazards of a product and how to use it safely. In WHMIS 2015, supplier labels for hazardous workplace products must display the information elements shown below.



Note: General labelling requirements

Supplier labels must be bilingual (English/French), easy to read, and durable. If the label is lost, damaged, or no longer readable, the product must be relabelled.

The pictogram(s), signal word and hazard statement(s) must be grouped together on a label.

1. Product Identifier

The product name exactly as it appears on the container and on the Safety Data Sheet (SDS).

2. Hazard Pictograms

Hazard pictograms, determined by the hazard classification of the product. In some cases, no pictogram is required.

3. Signal Word (NEW)

"Danger" or "Warning" is used to emphasize hazards and indicate the severity of the hazard.

4. Hazard Statements

Brief standardized statements of all hazards based on the hazard classification of the product.

5. Precautionary Statements

These statements describe recommended measures to minimize or prevent adverse effects from exposure to the product, including protective equipment and emergency measures. First aid is included in precautionary information.

6. Supplier Identifier

The company which made, packaged, sold or imported the product, and is responsible for the label and SDS. Contact the supplier for additional product information.

Note: Hazardous ingredients

Disclosure of hazardous ingredients on a label is not required under WHMIS 2015. However, the supplier may choose to include them on the label. For a hazardous product that is a substance, the chemical name of the substance must be listed on the SDS. For a hazardous product that is a mixture, the chemical names of the hazardous ingredients that present health hazards must be listed on the SDS.

WHMIS 2015 is based on the 5th revised edition of the GHS. See WHMIS.org for more information.

CCOHS
Canadian Centre for Occupational Health and Safety

WHMIS 2015

Workplace Hazardous Materials Information System

fact sheets

These Fact Sheets summarize key requirements of WHMIS 2015 which incorporates the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) for Canadian Workplaces. See **WHMIS.org** for more information.

Safety Data Sheets

Safety Data Sheets (SDSs) are an essential component of WHMIS 2015. Employers and workers use the information on an SDS to protect themselves from hazards and for safe handling and use.

	SDS Section	Information Requirements (partial list)
1	**Identification**	Product identifier, recommended use and restrictions on use, supplier contact information, emergency phone number.
2	**Hazard identification**	Classification (hazard class and category), label elements (including hazard pictogram, signal word, hazard statement and precautionary statements) and other hazards (e.g. thermal hazards).
3	**Composition/information on ingredients**	For a hazardous product that is a substance: the chemical name, synonyms, CAS No. and the chemical name of impurities, stabilizing solvents and stabilizing additives where classified and that contribute to the classification of the product. For a hazardous product that is a mixture: for ingredients that present a health hazard, the chemical name, synonyms, CAS No. and concentration. Note: Confidential Business Information Rules may apply.
4	**First-aid measures**	First-aid measures by route of exposure as well as most important symptoms/effects.
5	**Fire-fighting measures**	Suitable (and unsuitable) extinguishing media, specific hazards, special equipment and precautions for fire fighters.
6	**Accidental release measures**	Protective equipment, emergency procedures, methods and materials for containment and clean up.
7	**Handling and storage**	Precautions for safe handling, conditions for storage, including any incompatibilities.
8	**Exposure controls/ personal protection**	Exposure limits, engineering controls, personal protective equipment.
9	**Physical and chemical properties**	Appearance, odour, odour threshold, pH, melting/freezing point, boiling point and range, flash point, upper and lower flammable or explosive limits.
10	**Stability and reactivity**	Reactivity, chemical stability, possible hazardous reactions, conditions to avoid, incompatible materials, hazardous decomposition products.
11	**Toxicological information**	Description of various toxic effects by route of entry, including effects of acute or chronic exposure, carcinogenicity, reproductive effects, respiratory sensitization.
12	**Ecological information***	Aquatic and terrestrial toxicity (if available), persistence and degradability, bioaccumulative potential, mobility in soil.
13	**Disposal considerations***	Safe handling and methods of disposal, including contaminated packaging.
14	**Transport information***	UN number and proper shipping name, hazard classes, packing group.
15	**Regulatory information***	Safety, health and environmental regulations specific to the product.
16	**Other information**	Other information, including date of the latest revision of the SDS.

The SDSs must be accurate at the time of sale or import, for each sale or import. SDSs must be updated when significant new data become available. Suppliers must provide this new information at the time of sale.

* Sections 12 to 15 require the headings to be present. The supplier has the option to not provide information in these sections.

WHMIS 2015 is based on the 5th revised edition of the GHS. See WHMIS.org for more information.

CCOHS
Canadian Centre for Occupational Health and Safety

Safety Data Sheet

1 - Identification

Trade Name: WD-40 Bulk **Product Use:** Cleaner, Lubricant **Restrictions on Use:** None identified **SDS Date Of Preparation:** August 2, 2021	**Canadian Office:** WD-40 Products [Canada] Ltd. P.O. Box 220 Toronto, Ontario M9C 4V3 **Information Phone #:** (416) 622-9881 **Emergency Phone # 24 hr:** Canutec: (613) 996-6666 - Designated for use only in the event of chemical emergencies involving a spill, leak, fire exposure or accident involving chemicals

2 – Hazards Identification

WHMIS 2015/GHS Classification:
Flammable Liquid Category 3
Aspiration Toxicity Category 1
Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)

Note: This product is a consumer product and is labeled in accordance with the Consumer Chemicals and Containers Regulations (CCCR) which take precedence over WHMIS 2015 labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Label Elements:

DANGER!
Flammable liquid and vapor.
May be fatal if swallowed and enters airways.
May cause drowsiness or dizziness.

Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid breathing mists or vapors.
Use only outdoors or in a well-ventilated area.
Wear eye protection.
Response
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
In case of fire: Use water fog, dry chemical, carbon dioxide or foam to extinguish.

Storage
Store locked up.
Store in a well-ventilated place. Keep cool. Keep container tightly closed.
Disposal
Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	WHMIS 2015/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	50-70%	Flammable Liquid Category 3 Aspiration Toxicity Category 1 Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)
Petroleum Base Oil	Mixture	30-35%	Not Hazardous

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
Signs and Symptoms of Exposure: Harmful or fatal if swallowed. Aspiration of liquid into the lungs during swallowing or vomiting may cause lung damage. May cause eye and respiratory irritation. Inhalation of mists or vapors may cause drowsiness, dizziness and other nervous system effects. Skin contact may cause drying of the skin.
Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Specific Hazards Arising from the Chemical: Flammable liquid and vapor. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.
Methods and Materials for Containment/Cleanup: Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use with adequate ventilation. Keep away from heat, sparks, hot surfaces and open flames. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children.
Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials. NFPA 30 Class II Liquid.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA (Inhalable) ACGIH TLV (as mineral oil) 5 mg/m3 TWA, 10 mg/m3 STEL Canada- Québec (as oil mist, mineral) 5 mg/m3 TWA, 10 mg/m3 STEL Canada- Ontario (as oil mist, mineral) 1 mg/m3 TWA British Columbia (as Oil mist-mineral, severely refined)

The Following Controls are Recommended for Normal Consumer Use of this Product
Appropriate Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Safety glasses or goggles recommended.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved organic vapor/particulate or supplied air respirator in accordance with local and national regulations. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light green to amber liquid	Flammable Limits:	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	1 psi @ 38°C (100°F) ASTM D323
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.78 – 0.82 @ 15.6°C (60°F)
Melting/Freezing Point:	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Open Cup (liquid)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas):	Not Applicable	Viscosity:	2.79-2.96 cSt @ 38°C (100°F)
VOC:	533 grams/liter (65%)	Pour Point:	-63°C (-81.4°F) ASTM D-97

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions
Chemical Stability: Stable
Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:
Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.
Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.
Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Chronic Effects: None expected.
Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.
Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:
Acute Toxicity Estimates: Oral > 5,000 mg/kg; Dermal >2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available.
Persistence and Degradability: No data available
Bioaccumulative Potential: No data available
Mobility in Soil: No data available
Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: Excepted from Hazmat (49CFR 173.150 (F)) in non-bulk packaging.
Bulk Packaging: UN1268, Petroleum Distillates, n.o.s., Combustible Liquid, PG III

Canadian TDG Classification: Not regulated as a dangerous good when packages in a small means of containment (See 1.33 Class 3, Flammable Liquids: General Exemption).

IMDG Shipping Description: UN1268, Petroleum Distillates, n.o.s. 3, PG III
ICAO Shipping Description: UN1268, Petroleum Distillates, n.o.s. 3, PG III

NOTE: WD-40 Company does not test containers to assure that they meet the pressure differential and other requirements for transport by air. We do not recommend that our products be transported by air.

15 – Regulatory Information

National Pollutant Release Inventory (NPRI): This product contains the following chemicals that are listed on the NPRI Substance List: Aliphatic Hydrocarbon (64742-47-8) 50-70%

Canadian Environmental Protection Act: All of the ingredients are listed on the Canadian Domestic Substances List or exempt from notification.

16 – Other Information

HMIS Hazard Rating:

Health – 1 (slight hazard), Fire Hazard – 2 (moderate hazard), Physical Hazard – 0 (minimal hazard)

Revision Date: August 2, 2021 Supersedes: April 29, 2020

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

Reviewed by: I. Kowalski Regulatory Affairs Dept.

1071200/ No.0084306

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION

PRODUCT

Product Name: **MOBIL DELVAC 1300 SUPER 15W-40**
Product Description: Base Oil and Additives
SDS Number: 19863
Product Code: 201520403560
Intended Use: Engine oil

COMPANY IDENTIFICATION

Supplier: **Imperial Oil Downstream**
P.O. Box 2480, Station M
Calgary, ALBERTA T2P 3M9 Canada

24 Hour Emergency Telephone	1-866-232-9563
Transportation Emergency Phone Number	1-866-232-9563
Product Technical Information	1-800-268-3183
Supplier General Contact	1-800-567-3776

SECTION 2 HAZARD IDENTIFICATION

This material is considered to be NON-HAZARDOUS according to regulatory guidelines.

This product has been classified in accordance with hazard criteria of the Hazardous Products Regulations (HPR) SOR/2015-17 and the SDS contains all the information required by the HPR SOR/2015-17.

Other hazard information:

Health Hazards Not Otherwise Classified: None as defined under HPR SOR/2015-17.

Physical Hazards Not Otherwise Classified: None as defined under HPR SOR/2015-17.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*	GHS Hazard Codes
ALKYL PHENOL	125643-61-0	1 - < 5%	H413
C14-16-18 ALKYL PHENOL	CONFIDENTIAL	0.1 - < 1%	H317, H373
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	64742-65-0	1 - < 5%	H304
ZINC ALKYL DITHIOPHOSPHATE	113706-15-3	0.1 - < 1%	H303, H315, H318, H401, H411

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4 FIRST-AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >215°C (419°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist

before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with used product. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or earthing procedures. However, bonding and earthing may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Substance Name	Form	Limit/Standard			Note	Source
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Inhalable fraction.	TWA	5 mg/m3			ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following is recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction).

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practise good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Colour: Brown

Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.875
Flammability (Solid, Gas): N/A
Flash Point [Method]: >215°C (419°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapour Density (Air = 1): > 2 at 101 kPa
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20ºC
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 109 cSt (109 mm2/sec) at 40ºC | 14.1 cSt (14.1 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -27°C (-17°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.

Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.
Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies. Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test animals.

CMR Status: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1
2 = IARC 2A
3 = IARC 2B
4 = ACGIH ALL
5 = ACGIH A1
6 = ACGIH A2

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (TDG): Not Regulated for Land Transport

LAND (DOT): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

CEPA: All components of this product are either on the Domestic Substance List (DSL) or are exempt.

Listed or exempt from listing/notification on the following chemical inventories: DSL, ENCS, ISHL, PICCS, TSCA

Special Cases:

Inventory	Status
AIIC	Restrictions Apply
IECSC	Restrictions Apply
KECI	Restrictions Apply
TCSI	Restrictions Apply

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
CARBONIC ACID, MAGNESIUM SALT (1:1)	546-93-0	6
TOLUENE	108-88-3	6

--REGULATORY LISTS SEARCHED--

1 = TSCA 4
2 = TSCA 5a2
3 = TSCA 5e
4 = TSCA 6
5 = TSCA 12b
6 = NPRI

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H303: May be harmful if swallowed; Acute Tox Oral, Cat 5
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H317: May cause allergic skin reaction; Skin Sensitisation, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component table information was modified.
Section 13: Disposal Considerations - Disposal Recommendations information was modified.
Section 15: Canadian List Citations Table information was modified.
Section 15: Special Cases Table information was modified.
Section 16: Copyright - Imperial Oil information was modified.
Section 16: Disclaimer - IOL information was modified.
Section 16: HCode Key information was modified.

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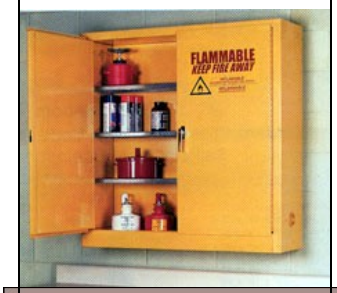
DGN: 7078684 (1029203)

Product Examples

The following are examples of products recommended for HAZMAT management in the workplace. Consult product Safety Data Sheet (SDS) as they are your most accurate source of product information.

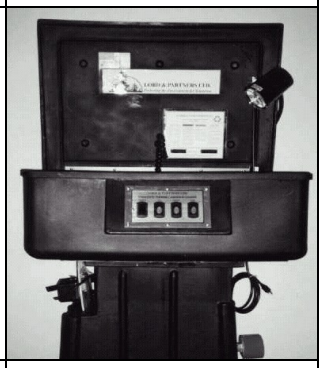
Item	Product	Examples
1	**Chemical storage buildings** are available in different shapes and sizes and can be tailored to meet specific user needs. Some points to consider when procuring a chemical storage building or when verifying existing buildings include: • fire extinguisher attached to outside of building in a weather-resistant case; • use of a skylight versus interior lighting (*e.g.* activities such as evening work will require explosion-proof interior lighting); • secondary containment floor. Provisions for cleanup such as a spill kit and sorbent pads should also be readily available; • doors with three-point locking system to prevent them from opening in the case of a fire or explosion; • each compartment with 2-3 rows of shelving on two walls (back and outer side); • compartment separation requirements will depend on the type of products stored. Incompatibles will require a sealed chemical separation wall, while compatible products could be left together or caged-off with wire mesh if more than one occupant is to use the building; • decanting requirements include grounding, bonding and mechanical ventilation; • interior and exterior finishes must be chemical-resistant to withstand abrasion by product; • building placarded in accordance with NFCC requirements using TDG placards; • moving product in and out of the building can be difficult if the building is elevated. The inclusion of a ramp and/or overhead crane for drums should be considered. Best practices include: • post a compatibility chart at eye level within the building; • post the inventory inside the building; • place applicable SDS within close proximity of the storage cabinet; • promptly clean any spills and properly dispose of waste materials; • post the contact information for the building's OPI in a visible location; • keep access to the building unobstructed; and • locate First Aid equipment within close proximity of the building.	  

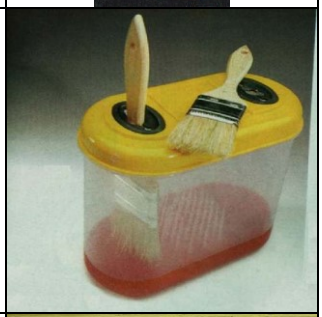
Item	Product	Examples
2	**HAZMAT cabinets** are available in a variety of sizes and types. Several manufacturers have adopted the following colour codes as identifiers: • yellow – for flammables; • blue – for corrosive products; • green – for pesticides; and • red – for combustibles and low flammables. Typical features to look for when selecting a HAZMAT cabinet are: • cabinet meets ULC standards. Most cabinets manufactured in either Canada or the U.S. should meet the government testing parameters followed in each country. In Canada, the cabinet should conform to Underwriters Laboratories of Canada (ULC) standards, which require units to be double-walled and insulated. This provides the necessary fire resistance required by the NFCC. This is absent in UL-approved cabinets; • cabinet size. Cabinets vary from taller than 1.5 m to half that size. They are also available in wall-mounted, under-counter and mobile units; • capacity. The capacity of storage units varies from 50-L to 250-L; • extra shelving space. Consider the purchase of additional shelving, especially when storing aerosol cans and containers 4 L or smaller in the larger cabinets; • sufficient venting. Approved cabinets have ventilation plugs built into the unit. These provide for natural ventilation if desired. Should the plugs be removed, ventilation pipes (bottom and top) should be installed on the exterior of the building to allow for adequate ventilation; • door type. There are several door options, ranging from lockable double doors to self-closing double doors; • secondary containment. Approved storage cabinets have a secondary containment sump; and • labelling and placarding. Labelling of the storage units must follow NFCC requirements. To assist emergency crews in the identification of the contents within the storage unit, the cabinet should be placarded with the appropriate TDG placards. Best practices include: • post a compatibility chart outside or near the cabinet; • post an inventory sheet outside the cabinet; • keep all applicable SDS within close proximity of the storage cabinet; • promptly clean any spills and properly dispose of waste materials; • post the contact information for the cabinet's OPI in a visible location; • ensure all stored products are compatible; • ensure access to the cabinet is unobstructed; and • keep fire protection and First Aid equipment within close proximity to the cabinet.	   
3	**Compressed gas storage** within the workplace is typically done in one of two ways: storing cylinders upright and chained to a wall, or upright and within a secured cage. For detailed instructions on the proper storage and handling of compressed gases, refer to DND publication A-LM-187-004/JS-001 Hazardous Material Manual, Chapter 3 Hazardous Material Storage and Handling, Section 3 Compressed Gases (Class 2) Storage. Best practices include: • store cylinders in a well-ventilated area; • keep away from heat sources and sparks; and • keep protective caps over valves.	

Item	Product	Examples
4	**Secondary containment bins, drip pans and jerry can containers** are useful products in the workplace and vary in size and capacity. For example, smaller bins (0.5-L to 10-L capacity) can be used as secondary containment for cleaning products stored in cleaning closets. Workshop areas require secondary containment for leaking equipment such as generators and small engines. Using a drip pan under these pieces of equipment will contain leaking hydrocarbons. Waste batteries tend to collect in maintenance shops. They are hazardous as they often leak due to rough handling or to failure of the outer casing. Using a drip pan to store products while they await disposal ensures protection from spills. Jerry can containers are useful for temporary fuel points. They come in various colors to aid camouflage and can be stacked two-high. The containers can also be strapped in the back of a vehicle or trailer to allow for better jerry can security and secondary containment. Best practices include: • label tubs and drip pans as per contents. This will avoid any cross-contamination and potential incompatibilities; • wipe drip pans clean when spills do occur. This will avoid any unnecessary cleanups should the pan or tub be tipped over or punctured; and • use these items for temporary storage only. Permanent installations should be considered if prolonged use is required.	  
5	**Flexible drip mats** are useful for passenger vehicles to SMP vehicles, including HLVW. Drip mats typically come in 2’ x 2’, 3’ x 3’ and 3’ x 5’ sizes. Drip mats should have a rope lanyard, which can be tied to the front bumper or driver-side mirror. Drip mats are convenient since they can be rolled or folded and stored in the vehicle while it is in transit. Place a small drip mat (2’ x 2’) under the engine oil pan and radiator of smaller vehicles. Larger vehicles such as MLVW, HLVW and commercial vehicles 5 tonnes or greater generally require a mid-size mat (3’ x 3’) under the oil pan and radiator. Mid-size drip mats are also recommended for vehicles with large differentials. Vehicles with tandem axles require a longer drip mat (3’ x 5’). Best practices include: • change sorbent pads when they are oil soaked or tattered; and • replace worn drip mats (visible holes in the bottom).	
6	**Drain plugs** are recommended for workshop floor drains that do not lead to oil-water separators or other spill containment systems, and/or that discharge to either a sanitary sewer or directly into the stormwater sewer. A spill that discharges into a drain can be quite costly and difficult to clean. Some items to consider when procuring a drain plug are: • ensure plug material is soft and pliable, but still tough and tear resistant; • ensure plug is the right size and shape to fully block the drain; • consider using a metal easy-hold eyebolt for easy installation and withdrawal; • use a high-quality PVC compound to produce an inherently tacky surface that will temporarily bond to uneven surfaces; • maintain the plug’s adhesive properties by cleaning with soap and water; • ensure the plug is highly visible. Bright yellow is best. Personnel should be familiar with the principles and procedures for using spill containment equipment.	

Item	Product	Examples
7	**A drain mat** should be available for drains that are unsuitable for a drain plug or that cannot be plugged on a regular basis. Some items to consider when procuring a drain mat are: • ensure mat is soft and pliable but still tough and tear-resistant; • use a high-quality PVC compound to produce an inherently tacky surface; • maintain the mat's adhesive properties by cleaning with soap and water; • ensure the mat is highly visible. Bright yellow is best; and • sizes vary, so choose the one that best meets your needs. Personnel should be familiar with the principles and procedures for using spill containment equipment.	
8	**Drum carts** are useful for moving 205 L or smaller drums within larger workshops and warehouses. Providing adequate secondary containment for drums is an important consideration when moving any drum between locations. The cart should be equipped with secondary containment and be easy to move over different surfaces (*i.e*. pneumatic wheels are better than solid wheels when moving over rough surfaces). Best practices include: • place sorbent pads under the grate, or a bucket under the spigot, to collect any minor drips; and • ground and bond drums and containers when decanting.	 
9	**Covered spill pallets** are used to store drums indoors. They offer sufficient secondary containment, but no fire protection. Using a proper ULC-approved HAZMAT storage building is therefore recommended for more permanent applications. Best practices include: • place sorbent pads at the bottom of the pallet to ease cleaning of spilled product. • keep pallets unobstructed. This allows for easy inspection; • site pallets away from drains and watercourses; and • place pallets on a level surface to take full advantage of its secondary containment capabilities.	
10	**Low profile spill pallets** are used to store drums indoors. These offer secondary containment and have the capacity to contain 110% of the largest container using interconnecting pallets or bladders. Features to look for in a spill pallet include: • a ramp for wheeling drums onto the pallet; • a removable grate to access the interior of the pallet; and • a drain plug to remove large volumes of spilled material. Best practices include: • place sorbent pads at the bottom of the pallet to ease cleaning of spilled product; and • keep pallets unobstructed. This allows for easy inspection.	
11	**A drum funnel** can be set on the drum top and has a large opening to make pouring product into 205 L drums an easier task. Best practices include: • place bung back on drum after funnel has drained itself off. This is especially important for volatile products; and • bond and ground drum and decanting containers.	

Item	Product	Examples
12	**Building and workshop spill kits** come in a variety of sizes, types and levels of portability. There are many off-the-shelf units available for the workplace. Some items to consider when procuring a spill kit include: • type of product that could be spilled. Consult product SDS to assist in determining the appropriate spill response requirements; • compatibility of spill cleanup material. Material must be compatible with the product being cleaned up. Generally there are two types of sorbent: *universal sorbents,* which are capable of absorbing aggressive chemicals; and *hydrophobic/oilphillic sorbents*, which are capable of absorbing hydrocarbons and repelling water; • type and quantity of PPE. A good spill kit should have PPE for at least two people. Typical PPE for non-aggressive product spills include nitrile gloves, splash proof goggles, chemical-resistant over-boots, protective chemical-resistant coveralls and a hood. Where spilled product is an aggressive chemical, the level of chemical protection offered should be increased; • the mobility of the spill kit. Spill kits with wheels are required when the kit is to be used over a large area. The type of wheel is important: hard castors for hard surfaces; pneumatic tires with swivel castors for uneven surfaces; • the outer container of the spill kit. A leak-proof container can also be used in the cleanup process to contain contaminated materials or to package a leaking drum; • the surrounding terrain. Specialized equipment may be required to prevent spills from reaching watercourses or drains (*e.g.* booms); • plugging methods. A leak may be plugged with a low-cost plugging compound or a more costly patch kit. There are generally three types of compounds: granular, premixed granular and two-part epoxy. Patch kits can include wooden pegs, corks, screws, magnetic strip patch, and inflatable patches; • sorbent materials. Several products are available including sorbent pads, pillows, booms and granules. Pads are convenient for blotting spilled material that has remained on a surface. Pillows are good for pooled-up areas. Booms are good for diverting spill material away from drains, ditches and open watercourses. Booms can also be used for skimming hydrocarbons from the top few inches of water. Granular sorbents are good for earthen or hard surfaces; • duct tape is useful for patching leaking pipes; • drain mats are useful for covering large drains; • drain plugs are useful for plugging drain pipes; • shovels (non-ferrous) are useful in the cleanup of spills; • marker tape such as “SPILL DO NOT ENTER” is good to ensure the safety of workers and the general public; • a sheet of plastic, approximately 3 m x 3 m, is convenient as secondary containment; • a disposal bag – a clear bag is recommended over an opaque bag to ease identification of the bag’s contents; • identification labels (*e.g.* hazardous waste label); • an inventory of equipment contained in the spill kit; and • a security tab. Best practices include: • keep spills in an accessible area as much as possible; and • place a security tab, such as those used for First Aid kits, to secure contents. The kit can be opened with a light tug on the seal. The use of a seal allows for quick visual inspection of the kit. If the seal is broken, a thorough inspection of the kit is required. Most companies selling off the shelf spill equipment have the ability to customize spill kits for the buildings/workshop requirements.	   

Item	Product	Examples
13	**Vehicle spill kits** range in size, portability and the type of response equipment included. There are many off-the-shelf kits available for vehicles. Some items to consider when procuring a vehicle spill kit are: • size of kit. A kit that is too large will either not fit in the vehicle or will be purposely omitted by the operator as they take away from valuable storage space. Kits that are too small will be ineffective; and • colour of kit. Colour is a concern where camouflage and concealment of SMP vehicles is required. A bright yellow kit will most likely not be brought in the assigned vehicle or will be packed away in such a manner that it may be impractical for initial responders to access in the first critical moments. A neutral or camouflage colour will ensure the kit can be stored where needed in the vehicle. Common components of a good spill kit will include the following items (quantities should be determined by the size of the kit and the vehicle): • outer kit bag with instructions, kit inventory, Unit and serial number silkscreen for identification; • pop-up pool – capacities vary from 100 L to 500 L; • a sheet of plastic; • sorbent pads – hydrophobic /oilphilic; • sorbent pads – universal; • disposal bags; • tie wraps; • shovel; • PPE – 2 pairs of nitrile gloves and 2 pairs of splash-proof goggles; • plugging compound; and • granular sorbent. Best practices include: • inspect the kit prior to using the vehicle. This can be accomplished by using a safety seal such as those found on First Aid kits. Prior to departure, the contents of the kit should be verified and replenished as necessary.	 
14	**Environmentally friendly parts washers** are an alternative to solvent-based cleaning units. The cleaning solutions used by these apparatuses are often citrus-based. Although environmentally friendly, they are still somewhat corrosive. Both manufacturer's and military specifications must be consulted prior to using a new parts washer product. Best practices include: • maintain the unit and ensure no product leaks from the tub; • change product when it is determined that cleaning is no longer effective. Dispose of contaminated fluid as hazardous waste; • locate equipment in an accessible place; and • ensure PPE is available at all times.	
15	**Hot water aqueous parts washers** are used for cleaning small engines and machine parts. This equipment is quite versatile and, if used properly, can be economical. Most problems result from users not following manufacturer's directions and failing to use the proper additives, which result in corrosion, and not properly maintaining the parts washer. Best practices include: • keep work area clear of obstructions; • regularly inspect equipment and fittings for leaks; • perform manufacturer's recommended routine maintenance; and • dispose of the skimmed waste as hazardous waste.	

Item	Product	Examples
16	**Fluorescent tube protective storage units** are used for storing spent and new bulbs. Best practices include: • store waste and new fluorescent bulbs in a protected container to prevent accidental breakage; and • mark waste tubes as not serviceable (N/S) to avoid confusing with new tubes.	
17	**Paintbrush cleaning units** have several advantages, including: a clear body through which cleaning fluid is visible; and a lid that holds brushes in place. Best practices include: • remove liquid when finished cleaning brushes; • dispose of contaminated cleaning fluid as hazardous waste; • secure container in an upright position to prevent it from tipping over; and • label container with contents and required WHMIS symbols.	
18	**Refillable aerosol spray containers** are typically used in maintenance shops for bulk products such as penetrating oils, brake cleaners and general-purpose oils. Best practices include: • label containers using WHMIS workplace labels; and • ensure all personnel using the sprayers are familiar with safe use practices.	
19	**Oily waste and steel-wool sealed containers**: • essential whenever solvent cloths and wiping rags or steel wool are used; • remains closed when not in use; • cover opens at an angle of not more than 60° and closes automatically when released; • round construction and elevated bottom encourages circulation of air around the container to disperse heat and prevent spontaneous combustion; and • a one-piece cover facilitates the use of collection bags. Best practices include: • label container with appropriate waste classification; • keep away from combustibles; and • empty weekly.	

Item	Product	Examples
20	**First Aid kits** come in various types and sizes, including the pictured wall-mounted kit complete with appropriate signage. Features to look for when purchasing a First Aid kit: • site the kit in an unobstructed location to provide easy access to users; • secure contents with a safety tab to assist with visual inspections; • ensure contents can address potential hazards in the workspace; • record usage in a logbook; • include an inventory in the kit; and • re-stock the kit after each use. Best practices include: • inspect the kit monthly. If the safety seal has not been broken, then there is no requirement to open the kit; and • use visible overhead signage to permit occupants to see its location from a distance.	
21	**WHMIS Information Stations** are important tools to convey the requirements of WHMIS. A well-presented board will have information on the following: • symbols; • labels; • SDS; • PPE; • Supplier, Employer and Employee rights; and • a holder for the binders containing inventory information and SDS. Best practices include: • locate in close proximity to hazards; • ensure information is accessible to personnel; • ensure all material is bilingual; and • keep information up-to-date.	
22	**Eye wash bottle stations** can be used as an immediate response. Note – wash bottles are not a replacement for eye irrigation stations that provide 15 minutes continuous flow. Best practices include: • replace water and sign inspection tag monthly; and • position in a visible and unobstructed location.	
23	**Emergency showers and/or eyewash stations** are vital for immediate response. Provide continuous flush eye irrigation station in accordance with: • http://www.ccohs.ca/oshanswers/safety_haz/emer_showers.html; and • (ANSI) Standard Z358.1-1998 Emergency Eyewash and Shower Equipment Best practices include: • replace water as directed by manufacture; • conduct monthly inspections (use inspection tag); and • position in a visible and unobstructed location.	
24	**Fire extinguisher storage cabinets** are used to keep extinguishers safely stored in a consistent location. Features to consider when purchasing a cabinet include: • weather-resistant; • clear window at the front allows for quick visual inspections; and • protects inspection tags from the elements. Best practices include: • locate close to hazards; and • inspect and sign inspection tag monthly.	

4 CDD HAZARDOUS MATERIALS MANAGEMENT

NUMBER:	4 CDD SS-001
SOURCE REFERENCES:	A. DAOD 4003-1 Hazardous Materials Management B. CAO 11-69 Hazardous Materials Management C. A-GG-040-004/AG-001 GSP, HMS & MM D. ED 4003-9 Hazardous Materials Management Plans E. Canada Occupational Health and Safety Regulations – Chapter X Hazardous Materials F. 4 Division Hazardous Materials Management Plan G. ED 4003-1 Spill Reporting H. DAOD 3015-1 Management of Green Procurement I. Implementation Directive – 4th Canadian Division Transfer of Hazardous Materials (HAZMAT) Program to Safety Services
RELATED INFORMATION AND LINKS:	A. NIL
SUPERSEDED ORDER:	NIL
APPLICATION:	This directive applies to the following DND/CAF facilities: Bases, Armouries, Garrisons, Formations and Units. It does not apply to deployed operations. This directive is applicable to all personnel of The Department of National Defence/Canadian Armed Forces (DND/CAF), Defence Construction Canada (DCC), Canadian Forces Housing Agency (CFHA), Personnel Support Program (PSP), Public Services and Procurement Canada (PSPC) performing work under contract for DND, facility maintenance contractors and all external contractors operating within 4 Cdn Div, and all persons granted access.
EFFECTIVE DATE:	19 May 22
DATE REVIEWED:	19 May 22
REVIEWED BY:	Mr. Shaun Kelly
OPI/BRANCH:	Safety Services
APPROVING AUTHORITY:	Chief of Staff

1. POLICY STATEMENT

1.1. The hazardous materials (HAZMAT) program is based on the life cycle material management approach. The controlled entry of HAZMAT into the Canadian Armed Forces (CAF) is the most important task to be managed in the process. An educated purchasing management process will impact the entire life cycle management of HAZMAT and as such, informed decisions made from the start of the HAZMAT life cycle will positively impact and influence the 4 Division HAZMAT program.

1.2. The primary goal of managing HAZMAT is to minimize the potential for adverse effects on human health, the environment and Department of National Defence and Canadian Armed Forces (DND/CAF) property and assets. In managing the life cycle of HAZMAT, it is imperative to ensure compliance with federal, provincial and local regulations throughout.

1.3. Due diligence must be exercised in carrying out the duties and responsibilities associated with the safe management of HAZMAT.

2. DEFINITIONS

2.1. Delegated Procurement Authority (DPA). The Delegated Procurement Authority is the individual given responsibility to obtain HAZMAT by the Commanding Officer (CO). The Delegated Procurement Authority is usually the Regimental Quartermaster or unit Supply Officer.

2.2. Due Diligence. A legal term that requires individuals in their course of action or duty to maintain a reasonable standard of care. Standard of care is a duty to: behave responsibly by observing applicable laws and practices; prepare for potential risks; and respond to incidents in a timely manner.

2.3. Hazardous Material (HAZMAT). HAZMAT is any material that, if handled improperly, can endanger human health, the environment or equipment. Some examples of HAZMAT include poisons, corrosive agents, flammable substances, ammunition and explosives.

2.4. Hazardous Material Life Cycle. The initial selection, procurement, use, handling, storage, transportation and disposal of hazardous waste, and matter contaminated by HAZMAT or hazardous waste such as soil, spill response equipment, and disposable personal protective equipment.

2.5. HAZMAT Control Authority (HMCA). The HAZMAT control authority is an individual acting on the authority of the CO to approve the introduction or continued use of a HAZMAT. At the unit level, this is typically the Unit Hazardous Materials Coordinator (UHMC).

2.6. Technical Authority (TA). The technical authority is the individual responsible for providing information, guidance and advice on the technical aspects of a product. The Technical Authority is the BHMO or equivalent.

3. INTRODUCTION

3.1. HAZMAT, if improperly used or handled can endanger the health of personnel or damage infrastructure, equipment and the environment. To prevent potential incidents and to protect personnel and assets, federal and provincial governments have established laws and regulations governing aspects such as use, storage, transportation and disposal.

3.2. Specific DND policies relating to HAZMAT are contained in the references section of this directive.

4. AIM

4.1. The aim of this directive is to define the life cycle, roles and responsibilities, and the procedures governing the development, implementation and administration of activities related to the management of HAZMAT within 4 Cdn Div.

5. HAZMAT INFRASTRUCTURE/FRAMEWORK ROLES & RESPONSIBILITIES

5.1. COMMAND & HQ LEVEL

5.1.1. Division Senior Safety Officer (Div Sr Safe O)
The Division Senior Safety Officer is responsible for providing overarching direction and oversight to the Division HAZMAT management program. In addition, the Div Sr Safe O advises on the safety and health of personnel and their training in accordance with Workplace Hazardous Materials Information System (WHMIS) 2015 regulations.

5.1.2. Division Senior HAZMAT Officer (Div Sr HMO)
The Division Senior HAZMAT Officer provides the day-to-day coordination of the Division HAZMAT Management Program, is the divisional expert on all policy, legislation and regulations pertaining to HAZMAT, and advises spill responders on the proper clean-up and disposal of HAZMAT material in accordance with Ref I (Implementation Directive). The Division Senior HAZMAT Officer is responsible to the Div Sr Safe O and will liaise with other specialist staff for HAZMAT related activities.

5.1.3. Real Property Operations Unit Ontario (RPOU(O))
RPOU(O) is the real property authority for all infrastructure. To maintain compliance, RPOU(O) works in consultation with the Div Sr HMO, Division Environmental Advisor, and Fire Services to properly prioritize and execute HAZMAT related infrastructure projects. Furthermore, RPOU(O) is responsible for the management of fuel storage tanks throughout their life cycles.

5.1.4. Division Environmental Advisor
In consultation with the Div Sr HMO, advises on the potential risks, protection, reporting and sustainment measures of the environment as they relate to HAZMAT. Environmental Services is responsible for the management and reporting requirements of the National Pollutant Release Inventory (NPRI), polychlorinated biphenyls (PCBs), storage tank environmental compliance and halocarbon programs, as well as general spill reporting to external government organizations.

5.1.5. Fire Services
Advises on fire prevention, emergency response requirements, and the respiratory

protection program. Provide emergency HAZMAT spill response service on base/garrison. Act as the HAZMAT emergency response team.

5.1.6. G4

As the Senior Logistics Officer, the G4 coordinates the activities of the following staffs:

5.1.6.1. Supply

Advises procurement, storage, inventory, and issue of HAZMAT as well as the disposal of hazardous wastes in accordance with Ref H (DAOD 3015-1).

5.1.6.2. Transport

Advises on the transportation of HAZMAT, on training and recertification associated with the Transportation of Dangerous Goods (TDG) Act and Regulations, and the investigation of violations of laws and regulations.

5.1.7. Senior Medical Officer

In consultation with the Div Sr HMO and Preventive Medicine (PMed) advises on the toxic effects of HAZMAT and the requirements for personal protective equipment (PPE) for users and, when required, the treatment of injuries.

5.2. BASE/GARRISON/FORMATION LEVEL

5.2.1. Deputy Commander

Is responsible for the implementation of the HAZMAT management program.

5.2.2. HAZMAT Management Committee

The HAZMAT Management Committee is responsible for advising the Commander and staff on HAZMAT management, monitoring the HAZMAT program, ensuring compliance with pertinent laws and regulations, reviewing inspection reports, analyzing HAZMAT incidents to prevent recurrence, identifying training requirements and ensuring the HAZMAT emergency spill response capability is suitably trained and equipped. The HAZMAT spill response plan must be based on Ref C (A-GG-040-004/AG-001) Chapter 13: Hazardous Material Spill Response. The Base HAZMAT Management Committee membership details are in section 2 of the HMMP.

5.2.3. The Base HAZMAT Management Committee membership is:

a) Chairperson: Base Tech Svcs Officer or equivalent

b) Members: RPOU(O) Representative, B Supply O or equivalent, B Transport O or equivalent, B Surgeon, B/Grn Env O, B Fire Chief, BGSO, Unit HAZMAT Coordinators (optional)

c) Executive Secretary: Base HAZMAT Officer

5.2.4. HAZMAT Emergency Response Capability

This capability may be filled by the fire department or a specially trained and formed emergency spill response team. Is responsible for responding, containing and removing any release or potential release of HAZMAT that poses a risk to people, the environment or assets that a single unit is not capable of containing.

5.2.5. Base or Garrison HAZMAT Officer (or equivalent)

As HAZMAT subject matter expert, is responsible to oversee the annual inspection or audit of units, provide guidance on the management of HAZMAT over their entire life cycle, and advise spill responders on the proper clean-up and disposal of HAZMAT material in accordance with Ref I (Implementation Directive). Develop base or garrison HAZMAT policies. The Base HAZMAT Officer is responsible to enforce the HMMP including document control, monitoring and recommendations for improvement. The Base HAZMAT Officer has the role of Technical Authority. Refer to Ref B (CAO 11-69) section 11 for more detail on the responsibilities of the Base HAZMAT Officer.

5.2.6. Base or Garrison Technical Services Officer (or equivalent)

Is responsible for providing overarching direction and oversight on the procurement, acquisition, transport and disposal of HAZMAT, including all requirements associated with the Hazardous Waste Information Network (HWIN). The Base Technical Services Officer is also the chairperson of the Base HAZMAT management committee.

5.2.7. Base or Garrison Supply Officer (or equivalent)

According to Ref B (CAO 11-69) Annex A, is responsible for determining the use of HAZMAT, procurement, acquisition, quality assurance, inventory management, packing and labelling and oversees hazardous waste collection and disposal.

5.2.8. Base or Garrison Environment Officer (B/Grn Env O)

Is responsible to coordinate the base or garrison environment program and initiatives, including the base major HAZMAT spill plan. Ensures base activities do not cause an adverse outcome to the environment. The B/Grn Env O is responsible to provide oversight and advice to unit activities on reporting of HAZMAT spills according to Ref G (ED 4003-1), that occur on or off base to the appropriate department or government agency. Advise on HAZMAT storage locations with the Fire Marshall and BHMO. As well, monitoring environmental regulatory compliance for storage tanks, PCBs, and halocarbons.

5.2.9. Base or Garrison Transport Officer (or equivalent)

According to Ref B (CAO 11-69) Annex A, is responsible for all aspects relating to the transportation of HAZMAT over the course of their life cycle. Advises the base or formation in regards to TDG regulations.

5.2.10. Fire Marshall

Is responsible to ensure fire department personnel are trained to respond to emergencies involving HAZMAT and dangerous goods in order to contain a HAZMAT spill, respond to incidents involving HAZMAT, ensure HAZMAT storage areas comply with NFCC 2015 requirements and provide technical expertise relating to fire safety.

5.2.11. The Supporting Institutional Support Organization

Maintain the capability to support all base-related HAZMAT functions related to selection, procurement, segregation, recycling and disposal. Maintain and manage all hazardous waste stored at, disposed or recycled from the base. The Supporting Institutional Support Organization also acts as the signing authority for hazardous waste disposal and the maintenance of HWIN documentation. Ensures qualification,

training and competency of vehicle operators who are transporting dangerous goods and HAZMAT. Ensures transport personnel adhere to the Transportation of Dangerous Goods Act and Regulations and that they maintain spill control and containment equipment in vehicles.

5.2.12. Base or Garrison General Safety Officer (BGSO)

Manages the BHMO and is responsible for oversight and safety aspects of the base HAZMAT program. Ensure the WHMIS training program and PPE programs are implemented. Ensure that other HAZMAT training, as it is related to the safety of personnel, is conducted throughout the base and that training records are maintained.

5.3. UNIT LEVEL

5.3.1. Commanding Officers

Commanding Officers of Units have overall responsibility for the management of HAZMAT in their Unit. At all levels, commanding Officers must ensure that all activities related to the use of HAZMAT are controlled in such a manner as to limit any potential impacts on human health and the environment. This includes supervision, inspection and documentation of the use of HAZMAT, providing training and awareness on the proper handling and storage of HAZMAT, where possible, eliminating or controlling the use of HAZMAT, ensuring spill control capability exists and providing the selection and training of UHMCs to oversee the day to day activity of HAZMAT handling. The Commanding Officer of a unit must ensure that a trained UHMC is appointed to manage the HAZMAT program on their behalf and ensure a suitable replacement is available in case of absences. As well, the unit is responsible for cleaning up their HAZMAT spills as soon as possible. For major HAZMAT spills that the unit is unable to contain or clean up, follow the appropriate administrative instruction of your base or garrison. Also, ensuring completion of daily visual and weekly recorded inspections of all storage tanks to check for signs of spills, leaks or improper housekeeping, and take appropriate corrective action to minimize contamination and protect the environment.

5.3.2. Unit Hazardous Materials Coordinator

The UHMC will ensure that all unit storage areas are compliant with applicable regulations and policies, all training requirements are identified to commanders, and that management of HAZMAT, over its entire lifespan, is compliant with existing regulations and DND/CAF policies. Included in this would be attending UHMC meetings, inventory maintenance through the Hazardous Materials Reference Application (HMRA), providing awareness training, conducting inspections, assisting with audits, ensuring emergency response preparedness, act as the HAZMAT Control Authority (HMCA) in the unit, and ensuring that Safety Data Sheets (SDSs) are maintained.

5.3.3. Regimental Quartermaster/Unit Supply Officer

Is responsible for the procurement, acquisition, quality assurance, and inventory management of HAZMAT. The Regimental Quartermaster or Unit Supply Officer usually has the role of Delegated Procurement Authority (DPA) because they have signing authority for making HAZMAT purchases.

5.3.4. Workers/Individuals

All individuals are responsible to comply with the applicable legislation, standards, and policies related to HAZMAT management. Individuals are required to report unsafe work conditions as well as any HAZMAT-related incidents within the HAZMAT life cycle

immediately to their supervisor. Individuals must understand the information contained on HAZMAT labels and in SDSs as used in the workplace.

6. HAZARDOUS MATERIALS MANAGEMENT PLAN

6.1. As directed under Reference D, all Bases, Wings, and Formations must develop, implement and maintain HAZMAT management plans.

6.2. All formations and units of 4 Division will comply with their supporting base or garrison policies on the management of HAZMAT.

7. PRODUCT LIFE CYCLE

7.1. All stages of a HAZMAT product's life cycle and its associated management, must be viewed as essential factors in all DND and CAF planning. The life cycle combines selection, procurement, use, transportation, handling, storage and disposal. Specific emphasis should be placed on whether the HAZMAT needs to be acquired initially, given its characteristics.

8. ACQUISITION/PROCUREMENT

8.1. HAZMAT must be selected, procured, handled, used, stored, transported and disposed of in a manner that protects human health, the environment and assets and meets regulatory requirements. Due diligence must be exercised at all times while carrying out those duties and responsibilities. Where practicable, HAZMAT procurement must be decentralized and delegated to an appropriate level.

8.2. Procurement of HAZMAT must be performed through a Delegated Procurement Authority (DPA) having oversight of HAZMAT purchases for the branch, unit, or section. The Regimental Quartermaster or Unit Supply Officer is usually the DPA. The DPA and HMCA must limit the acquisition of HAZMAT in the workplace as to not exceed the requirement levels for current standard tasks and operational objectives. The excessive stocking of HAZMAT is prohibited according to Ref C Chapter 6 paragraph 6. The DPA must first determine if there is a non-hazardous, safer or more environmentally friendly product available.

8.3. All hazardous products or equipment using HAZMAT must be approved by the HMCA before entering the workplace. During the procurement of HAZMAT, the DPA and the Technical Authority (TA) must perform the following actions:

a) Select the source of supply and the means of procurement

b) Consult and coordinate with the HMCA prior to purchase

c) Ensure that the SDS accompanies the product

d) Make appropriate entries into HMRA

8.4. If the SDS is not available in the HMRA database, it must be obtained directly from the product manufacturer or distributor and then sent to the HMRA administrator for approval and to add to the HMRA database. The HMRA system must be maintained and the electronic holdings records must be kept up to date when new products are introduced into the workplace.

9. TRANSPORTATION

9.1. HAZMAT must be transported safely and in compliance with the TDG Act and Regulations. All personnel involved in the transport of HAZMAT and dangerous goods must be trained and certified in TDG to the level needed to fulfill their responsibilities according to Annex B of the HMMP.

9.2. The TDG Act and Regulations set out the rules for packaging, shipping, and identifying dangerous goods that are transported by federally regulated methods. TDG Regulations state that a person who handles, offers for transport or transports dangerous goods must be adequately trained and hold an appropriate training certificate.

10. USE & HANDLING

10.1. HAZMAT must be handled safely and with care throughout the workplace. It is the responsibility of the CO to ensure users of HAZMAT are provided with, and trained in the use of, the proper personal protective equipment (PPE). The requirement for employees to wear PPE should be reduced by emphasizing hazard reduction through product selection and engineering controls as preferred measures. It is the responsibility of the user to properly use the PPE provided to them when handling HAZMAT and products. All users must consult the SDS to determine the appropriate PPE and handling requirements of the material. All HAZMAT must be used in accordance with the applicable manufacturer's guidelines and procedures.

10.2. When receiving, delivering, packaging, or decanting HAZMAT, these products must be labelled and handled in accordance with WHMIS 2015. Every effort must be made to reduce HAZMAT usage and avoid or minimize the creation of pollutants.

11. STORAGE

11.1. Appropriate storage sites must be selected and based upon the risks associated with the product to be stored. It is imperative that chemical compatibility be considered and followed when storing HAZMAT (refer to compatibility chart in Ref F (4 Div HMMP)). All HAZMAT must be stored in appropriate storage cabinets or specifically engineered storage rooms. All designated storage locations must be input into the HMRA locations register for the unit by the UHMC. Holdings inventories and compatibility charts must be posted within the storage location. As defined in Ref G, bulk stacking of HAZMAT is not permitted in DND. Storage areas must be secured when not in use and only accessible to authorized personnel. As well, storage locations must be identified with the proper TDG placards or TDG labels. All ignition sources such as open flames and heat sources must be eliminated from HAZMAT storage areas and aisles, hallways, doorways, exits and entryways must be kept clear.

11.2. Many factors require consideration when siting, planning or modifying HAZMAT-containing buildings, structures or compounds. These include but are not limited to:

a) The site should not be located near sensitive land uses or water bodies;

b) The site slope gradients must be less than 10%;

c) Sites with high ground water tables or large open water bodies are not recommended;

d) Sites should have minimum risk from external hazards, including aircraft crashes, vandalism, mud slides, storm surges, and flooding;

e) Contaminated surface runoff from rain, spills, fire-fighting, etc. must not be allowed to enter public sewers, water bodies, reservoirs, etc;

f) Sites must be quickly serviced by fire departments/emergency teams, ideally with a 5-minute response time;

g) Sites should be selected which do not require the transport of HAZMAT through densely populated areas or environmentally sensitive locations.

12. DISPOSAL

12.1. When shipping hazardous wastes to a disposal or transfer facility, the Base, Garrison, or Unit must comply with the provincial, territorial and local requirements and register their waste under HWIN, use manifests, and use authorized shippers and disposal contractors. It should be noted that inter-provincial movement of wastes have additional federal requirements. All personnel involved in the disposal of hazardous wastes must be trained and certified in the TDG AHUR course or hazardous waste consignor course.

12.2. Appropriately identify any container used to collect or store hazardous waste and ensure compatibility of the hazardous wastes during storage and transport. Hazardous wastes must not be stored onsite for longer than 90 days. The classification of hazardous waste must be available prior to disposal.

12.3. Consideration of the 4Rs (Reduce, Reuse, Recycle and Recover) of pollution prevention must be included throughout the waste disposal process and spill response must be provided as soon as possible in the event that any accidents or spills occur.

13. TRAINING

13.1. All individuals are required to understand what HAZMAT training is required with respect to their individual responsibilities. COs are required to ensure that all personnel receive, understand and maintain a sufficient level of HAZMAT awareness and training. COs must ensure that all units appoint a UHMC and that this individual is trained appropriately including in UHMC, HMRA and small spill response training courses. All personnel are to be trained on WHMIS 2015. Some personnel may be required to obtain TDG training, such as TDG driver training or TDG hazardous waste consignor training. HAZMAT training will be commensurate with the duties and responsibilities of the unit.

14. RECORD KEEPING

14.1. Activities associated with the storage and disposal of hazardous waste must be recorded. The use of the DND material management information system (HMRA) for HAZMAT management is mandatory. The B/Grn Env O may require additional record keeping/reporting requirements (NPRI, PCBs, Spills, etc.).

14.2. According to the HMMP section 8.12 Reporting and Record Keeping Requirements, all documentation pertaining to HAZMAT must be retained and stored for at least 7 years. This documentation includes:

a) Inspection and audit reports

b) HAZMAT incident reports

c) Corrective action plans

d) HMMP

e) Request for approval of a new HAZMAT

f) Manifesting and shipping documents

g) Receipts for HAZMAT and hazardous waste transactions

h) Training records

i) Holding records

j) Records of qualifications

15. EMERGENCY RESPONSE

15.1. When HAZMAT spills occur, they must be promptly reported to the responsible authorities, including the B/Grn Env O, and appropriate actions must be taken to respond, mitigate risks to people, property and the environment, and to control or contain the spill. All units are required to have the ability to respond to spills. Emergency response equipment must be readily available to all emergency response personnel and spill kits must be made readily available to all units where the risk of a spill exists. All bases, garrisons and units will develop, post and maintain emergency response procedures specific to unit operations. Refer to Ref B (CAO 11-69) Annex C and Ref G (ED 4003-1) for more details on emergency spill response.

15.2. With regard to emergency response, the UHMC role is to help prepare the unit to be able to safely respond to and clean up a minor HAZMAT spill. A minor HAZMAT spill is a petroleum, oil, or lubricant (POL) spill that is less than 20 litres in volume of product.

15.3. With regard to emergency response, the BHMO role is to help units prepare to be able to safely respond to and clean up a minor HAZMAT spill. As well, to advise spill responders on the proper clean-up and disposal of HAZMAT in accordance with Ref I (Implementation Directive) in case of a HAZMAT spill.

15.4. A dedicated HAZMAT emergency response team on standby at the grn/base is not required, however, a HAZMAT emergency response capability is required at the unit level. As well, a HAZMAT emergency response capability is required at the grn/base level for a HAZMAT spill that is too big or too dangerous for one unit to contain and clean up.

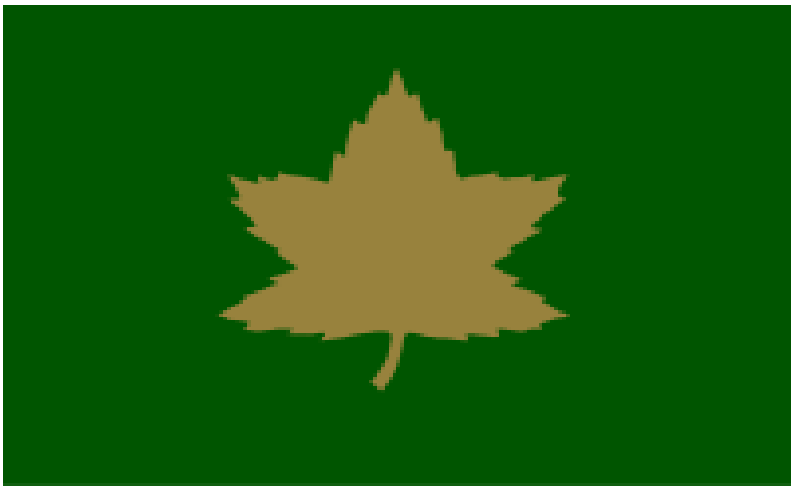
16. AUDITS AND INSPECTIONS

16.1. The primary purpose of audits and inspections are to support COs and their staff in identifying shortcomings in the HAZMAT management program and formulating

recommendations for improvement. Audits and inspections are fundamental tools for determining opportunities for continual performance improvement of HAZMAT management.

16.2. At the base/Grn level, the Base HAZMAT Officer is responsible for inspecting 4 Division units' HAZMAT storage areas periodically as part of a multidisciplinary inspection. At the unit level, the UHMC is responsible for quarterly inspections of HAZMAT storage areas.

4 DIVISION HAZARDOUS MATERIALS MANAGEMENT PLAN



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Date of Issue: 30 Aug 23

REFERENCES

A. Canadian Environmental Protection Act
B. Hazardous Products Act
C. Hazardous Products Regulations
D. Transportation of Dangerous Goods Act
E. Transportation of Dangerous Goods Regulations
F. National Fire Code of Canada 2020
G. Canada Labour Code Part II
H. Canada Occupational Health and Safety Regulations Part X
I. Canadian Army Order 11-69 Hazardous Materials Management
J. DAOD 4003-0 Environmental Protection and Stewardship
K. DAOD 4003-1 Hazardous Materials Management
L. ED 4003-9 Hazardous Materials Management Plans
M. DAOD 3015-1 Management of Green Procurement
N. Treasury Board Hazardous Substance Directive
O. A-GG-040-004/AG-001 Hazardous Materials Safety and Management Manual
P. C-02-040-009/AG-001 General Safety Program Vol. 2, General Safety Standards
Q. Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations
R. R.R.O. 1990, Reg. 347 General – Waste Management
S. Implementation Directive – 4th Canadian Division Transfer of Hazardous Materials (HAZMAT) Program to Safety Services
T. 4 CDD SS-001 Hazardous Materials Management
U. ADM(Mat) Supply Administration Manual (SAM) A-LM-007-100/AG-001

RECORD OF AMENDMENTS

Amendment Number	Authority	Date
1	Div Sr HAZMAT O	21 Feb 2022
2	Div Sr HAZMAT O	4 Jul 2022
3	Div Sr HAZMAT O	30 Aug 2023

SCOPE AND APPLICATION

The Department of National Defence and the Canadian Armed Forces (DND/CAF) hazardous materials (HAZMAT) management activities must meet or exceed the letter and spirit of all applicable federal acts, regulations, policies and guidelines and, where appropriate, be compatible with provincial acts, regulations and guidelines as well as municipal and international standards.

This Hazardous Materials Management Plan (HMMP) is applicable to all personnel of the Department of National Defence (DND), Defence Construction Canada (DCC), Canadian Forces Housing Agency (CFHA), Personnel Support Program (PSP), Public Services and Procurement Canada (PSPC) performing work under contract for DND, and all external contractors operating within 4th Canadian Division (4 Cdn Div). This HMMP provides more detailed direction to Ref T (4 CDD SS-001 Hazardous Materials Management).

The scope of this HMMP is limited to HAZMAT used in the workplace addressed by Transportation of Dangerous Goods (TDG) Classes 2, 3, 4, 5, 6, 8, and 9 except for:

- CEPA Schedule 1 List of Toxic Substances (Environment responsibility)
- Living organisms, biological toxins (PMed responsibility)
- Transportation of HAZMAT (G4 Transportation responsibility)

Outside of this scope:

- TDG Class 1 is Directorate of Ammunition Program responsibility
- TDG Class 7 is Directorate of Nuclear Safety responsibility
- TDG Class 9 asbestos is the building owner responsibility
- Nuisance dust is PMed and OHS/General Safety responsibility
- Potable and non-potable tap water contaminated with HAZMAT, PCBs, halocarbons, and fuel storage tanks are RPOU(O) responsibility

This plan is structured in a manner that reflects the risks of the life cycle management of HAZMAT. It must be stated however, that in most cases a zero risk level is not achievable, but rather risk from using HAZMAT is managed to an acceptable level and continuously evaluated for improvement and further risk reduction strategies.

All units or other supported elements that are assigned to 4 Division (4 Div) must adhere to the HMMP to the extent that it does not impede the operational mission(s) of the unit or element.

The overall responsibility for promulgation and maintenance of this document lies solely with the 4 Cdn Div Commander.

Enquiries: 4 Division Senior Hazardous Materials Officer

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LIST OF ABBREVIATIONS USED

Abbreviation	Expansion
4CDSG	4 Canadian Division Support Group
4 Div	4 Canadian Division
ADM(Mat)	Assistant Deputy Minister (Material)
AI	Administrative Instruction
B/Grn Env O	Base/Garrison Environmental Officer
BHMO	Base Hazardous Materials Officer
BGSO	Brigade General Safety Officer
CAF	Canadian Armed Forces
CAO	Canadian Army Order
CFHA	Canadian Forces Housing Agency
CFLTC	Canadian Forces Logistics Training Centre
CO	Commanding Officer
DAOD	Defence Administrative Orders and Directives
DCC	Defence Construction Canada
DND	Department of National Defence
DND/CAF	Department of National Defence and Canadian Armed Forces
DPA	Delegated Procurement Authority (Regimental Quartermaster or Unit Supply Officer)
DSCO	Directorate of Supply Chain Operations
ED	Environmental Directive
EMS	Environmental Management System
ERP	Emergency Response Plan
HAZMAT	Hazardous Materials
HMCA	Hazardous Materials Control Authority (UHMC)
HMMP	Hazardous Materials Management Plan
HMRA	Hazardous Materials Reference Application
HRMS	Human Resources Management System
MOECP	Ministry of the Environment, Conservation and Parks (Ontario)
NFCC	National Fire Code of Canada 2020
ODS	Ozone Depleting Substances
PCB	Polychlorinated Biphenyls
POL	Petroleum, Oils and Lubricants
PPE	Personal Protective Equipment
PSP	Personnel Support Program
R&D	Repair & Disposal Section
RPOU(O)	Real Property Operations Unit Ontario
RPRA	Resource Productivity and Recovery Authority
SDS	Safety Data Sheet
TA	Technical Authority (BHMO)
TDG	Transportation of Dangerous Goods
UHMC	Unit Hazardous Materials Coordinator
VCDS	Vice Chief of the Defense Staff
WHMIS	Workplace Hazardous Materials Information System 2015

INTRODUCTION

This Hazardous Materials Management Plan (HMMP) outlines the procedures for the responsible management of hazardous materials (HAZMAT) within 4 Div. This HMMP is intended to provide guidance and information on all stages of the HAZMAT life cycle, including; initial selection, procurement, use, handling, storage, transportation and disposal.

This plan incorporates the principles of pollution prevention and the 4R's (reduce, reuse, recycle, and recover) as well as reflecting the intent of the Department of National Defence and Canadian Armed Forces (DND/CAF) policy documents, and the 2012 Chief Review Services Audit of Hazardous Materials Management. Ultimately, this plan provides guidance to units in order to be in compliance with federal and provincial regulations where applicable to HAZMAT.

Until environmentally friendly substitutes become available for current HAZMAT in use, DND must actively practice careful stewardship and management to mitigate and minimize the risks created from HAZMAT use and waste generation.

The primary goal of managing HAZMAT is to minimize the potential for adverse effects on the environment, human health and DND/CAF property and assets. To accomplish this, the HMMP is focused on the assemblage of consistent, standard practices and procedures to be implemented and enforced across 4 Div.

It is important to note that the HMMP is a living document which is continuously reviewed and revised to ensure it meets the most current environmental and health and safety regulations, industry best practice, and DND/CAF policies and procedures.

The measures that apply at the garrison/base level must be adapted to ensure an identical degree of safety in the context of exercises and deployments.

LEGISLATION, POLICY AND DIRECTIVES

This section outlines the legislation, policies, and direction that guide this plan and where you can find a copy of them. This HMMP is supplemental to legislation and policy and is not intended to replace any documentation listed below. This plan must be implemented in combination with all applicable HAZMAT legislation and policy.

ACTS

Canada Labour Code Part II
http://laws-lois.justice.gc.ca/eng/acts/L-2/

Canadian Environmental Protection Act
http://laws-lois.justice.gc.ca/eng/acts/c-15.31/

Hazardous Products Act
http://laws-lois.justice.gc.ca/eng/acts/H-3/

Transportation of Dangerous Goods Act
http://lois-laws.justice.gc.ca/eng/acts/T-19.01/

REGULATIONS

Canada Occupational Health and Safety Regulations
http://laws.justice.gc.ca/eng/regulations/sor-86-304/index.html

Hazardous Products Regulations
http://laws-lois.justice.gc.ca/eng/regulations/SOR-2015-17/

R.R.O. 1990, Reg. 347 General – Waste Management
https://www.ontario.ca/laws/regulation/900347/

PCB Regulations
http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-273/

Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations
https://laws-lois.justice.gc.ca/eng/regulations/sor-2008-197/page-1.html

Transportation of Dangerous Goods Regulations
https://laws-lois.justice.gc.ca/eng/regulations/sor-2001-286/

POLICIES AND PROCEDURES

4 CDD SS-001 Hazardous Materials Management
https://acims.mil.ca/org/4CdnDiv/_layouts/15/DocIdRedir.aspx?ID=N6V7ZNDM2EMK-607758639-329

CAO 11-69 Hazardous Materials Management
http://acims.mil.ca/org/3372/_layouts/DocIdRedir.aspx?ID=EXEC-470230624-336

DAOD 3015-1: Management of Green Procurement
https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/3000-series/3015/3015-1-management-of-green-procurement.html

DAOD 4003-0: Environmental Protection and Stewardship
https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/4000-series/4003/4003-0-environmental-protection-and-stewardship.html

DAOD 4003-1: Hazardous Materials Management
https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/4000-series/4003/4003-1-hazardous-materials-management.html

ED 4003-1/2003 Spill Reporting
http://acims.mil.ca/org/5CdnDiv/SafetySvcs/Hazardous%20Materials/160628-UN-1262-12-Safety%20Svcs-DIR-ED%204003-1%20Spill%20Reporting-BIL.pdf

ED 4003-9 Hazardous Materials Management Plans
https://collaboration-admie.forces.mil.ca/sites/Policy/ApprovedPolicy_Lib/ED%204003-9_e.pdf

Implementation Directive – 4th Canadian Division Transfer of Hazardous Materials (HAZMAT) Program to Safety Services
https://acims.mil.ca/org/4CDSG/Working%20Documents%20Library/20150720-UN-1262-1-4DIVHQ-IMPLEMENTATION%20DIRECTIVE%20-%204%20CDN%20DIV%20TRANS%20OF%20HAZMAT%20PROG%20TO%20SAFETY%20SERVICES.pdf

CODES, STANDARDS AND GUIDANCE DOCUMENTS

A-GG-040-004/AG-001 Hazardous Materials Safety and Management Manual
http://intranet.mil.ca/en/health-safety-security/gen-safety-workplace-hazardous-materials-manual.page

C-02-040-009/AG-001 General Safety Program Vol. 2, General Safety Standards
http://intranet.mil.ca/en/health-safety-security/gen-safety-policies-publication-volume-2.page

National Fire Code of Canada 2020
https://publications.gc.ca/collections/collection_2022/cnrc-nrc/NR24-27-2020-eng.pdf

DEFINITIONS

ACT
A product, such as a statute, decree, or enactment, resulting from a decision by a legislative or judicial body.

BONDING
A safety practice where two objects (tanks, cylinders, etc.) are interconnected with clamps and wire. This equalizes the electrical potential between the objects and helps prevent static spark that can ignite flammable materials transferred between tanks.

BULK STACKING
Containers not stored on shelves or pallet racks that are either; stacked two or more containers high; or having a depth greater than 2.4 m or stored more than two pallets deep.

CARCINOGENICITY
A carcinogen is a cancer producing substance or agent. Agents that cause these effects are generally chronic in nature.

COMPATIBILITY CHART
Identifies the classes of HAZMAT that can be transported and stored together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident.

CONSIGNEE
The person to whom a consignment is being, or is intended to be, transported.

CONSIGNMENT
Dangerous goods transported in a transport unit from one consignor at one location to one consignee at another location.

CONSIGNOR
The person who offers the shipment for transport (normally the shipper).

DANGEROUS GOODS
Materials regulated by TDGA 1992 which may be any of the chemicals identified by name in Schedule I of the TDG regulations or may have chemical properties such that they fall within one of the nine TDG classes.

DECANTING
The transfer of a liquid from one container to another.

DELEGATED PROCUREMENT AUTHORITY (DPA)
The delegated procurement authority is the individual given responsibility to obtain HAZMAT by the Commanding Officer. The Delegated Procurement Authority is usually the Regimental Quartermaster or unit Supply Officer.

DUE DILIGENCE

A legal term that requires individuals in their course of action or duty to maintain a reasonable standard of care. Standard of care is a duty to: behave responsibly by observing applicable laws and practices; prepare for potential risks; and respond to incidents in a timely manner.

ENVIRONMENT

Means the components of the Earth and includes: Air, land and water; All layers of the atmosphere; All organic and inorganic matter and living organisms; and Interacting natural systems that include the three components listed above.

FLASHPOINT (˚C)

The minimum temperature at which sufficient vapour is given off by a liquid to form an ignitable mixture with the air immediately above the surface of the liquid. This term applies mainly to flammable liquids but certain solids such as camphor and naphthalene vaporize slowly at room temperature and therefore have flash points while in the solid state.

GREEN PROCUREMENT

Green procurement means the integration of environmental considerations in the materiel acquisition and support process, including requirement identification and definition, planning, procurement, operation and maintenance, disposal of goods and realty infrastructure, and closure activities in respect of acquired services and facilities.

GROUNDING

A safety practice to conduct any electrical charge to the ground, preventing sparks that could ignite a flammable material.

HAZARDOUS MATERIAL (HAZMAT)

HAZMAT is any material that, if handled improperly, can endanger human health, the environment or equipment. Some examples of HAZMAT include poisons, corrosive agents, flammable substances, ammunition and explosives.

HAZARDOUS MATERIAL LIFE CYCLE

The initial selection, procurement, use, handling, storage, transportation and disposal of hazardous waste, and matter contaminated by HAZMAT or hazardous waste such as soil, spill response equipment, and disposable personal protective equipment.

HAZARDOUS WASTE

Includes those wastes which are potentially hazardous to human health, property and/or the environment due to their nature and quantity, and which require "special" disposal techniques. They are usually HAZMAT which has no further use or they may be derived from a HAZMAT which has become contaminated. The term "special waste" may be used in some provincial and territorial jurisdictions in place of hazardous or HAZMAT waste and may dictate "special" handling or disposal procedures.

HAZMAT CONTROL AUTHORITY (HMCA)

The HAZMAT control authority is an individual acting on the authority of the Commanding Officer to approve the introduction or continued use of a HAZMAT. At the unit level, this is typically the Unit Hazardous Materials Coordinator (UHMC).

HIEARCHY OF CONTROLS

Hierarchy of hazard control is a system used to minimize or eliminate exposure to hazards. Various illustrations are used to depict this system, most commonly a triangle. The hazard controls in the hierarchy are, in order of decreasing effectiveness: elimination, substitution, engineering, administration, personal protective equipment.

INDIVIDUAL STORAGE AREA (ISA)

The term "Individual Storage Area (ISA)" is defined, in the NFCC and refers to the “area occupied by piles, bin boxes, racks or shelves, which is separated from adjacent storage by aisles not less than 2.4 m in width and includes subsidiary aisles providing access to the stored products". The size of an ISA depends upon the commodity concerned.

LOWER EXPLOSIVE LIMIT (LEL), LOWER FLAMMABLE LIMIT (LFL)

The lowest concentration of a material in air that burns or explodes if an ignition source is present at ambient temperatures.

MANIFEST (RPRA)

A RPRA manifest is documentation that accompanies the hazardous waste from its point of origin to its point of disposal. It shows when the hazardous waste changes hands between generators, carriers and receivers and describes the shipment in detail.

OFFICE OF PRIMARY INTEREST (OPI)

The individual or organization named to exercise primary management or leadership responsibility in the execution of an assigned task.

PACKING GROUP

Indicates the degree of danger of a product or substance. Group I, greater danger; Group II, moderate danger; and Group III, minor danger.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Refers to protective clothing and may include goggles or face shield, coveralls, gloves, boots, and appropriate respiratory protection as detailed in the product’s SDS.

RESOURCE PRODUCTIVITY AND RECOVERY AUTHORITY (RPRA)

RPRA is an Ontario provincial government online generator registration and manifesting system for generators, carriers and receivers of subject waste. It provides generators of subject waste with a convenient way to pay fees and use electronic manifesting to record and track the movement of wastes.

SAFETY DATA SHEET (SDS)

The SDS is a supplier-produced document providing detailed technical, hazard and precautionary information with respect to a hazardous (controlled) product and which describes potential health effects of exposure to the product, recommended personal protection for workers, hazard evaluations related to use, storage and handling techniques, first aid and emergency procedures.

TECHNICAL AUTHORITY (TA)

The technical authority is the individual responsible for providing information, guidance and advice on the technical aspects of a product. The Technical Authority is the BHMO or equivalent.

TOXICITY

The quality, relative degree, or specific degree of being toxic or poisonous. The sum of adverse effects of danger posed by a substance to living organisms.

UN NUMBER

The "United Nations" product identification prefix used in conjunction with a four-digit number to identify dangerous goods.

UPPER EXPLOSIVE LIMIT (UEL), UPPER FLAMMABLE LIMIT (UFL)

The highest concentration of a material in air that produces an explosion or fire or that ignites when it contacts an ignition source (high heat, electric arc, spark or flame).

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

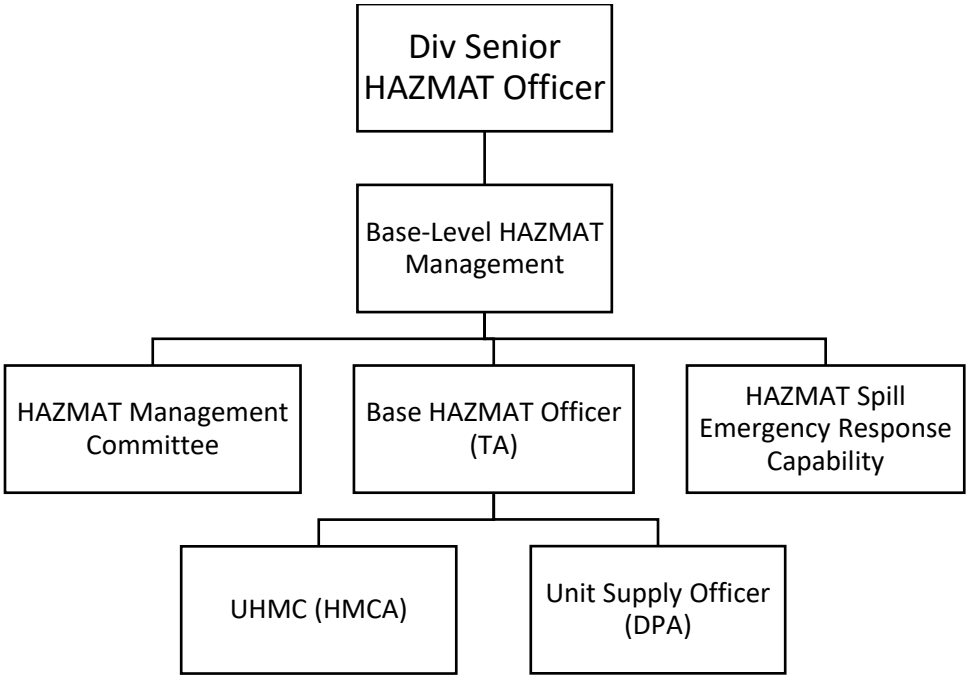
Essentially the "worker's right to know" legislation, WHMIS is a system of identification of controlled (hazardous) products and delivery of hazard information to every workplace where controlled products are in use. WHMIS specifically requires that suppliers classify their products according to standardized hazard classes and that they provide a SDS for every controlled product sold or imported into a Canadian workplace. In turn, employers are responsible for ensuring that HAZMAT used at their workplace(s) is properly identified, labelled and accompanied by a SDS. Employers are also responsible to ensure workers fully understand WHMIS labels and SDSs and can apply this information to their work practices. Workers must comply with training requirements.

WORKPLACE LABEL

A label that is designed and used in accordance with the Workplace Hazardous Material Information System (WHMIS).

The following organizational chart displays the basic structure of HAZMAT management in 4 Div.

4 Div HAZMAT Organizational Structure



1. COMMAND & DIVISION HQ LEVEL RESPONSIBILITIES

1.1 At Command and Div HQ, HAZMAT responsibilities are shared by a number of generalist and specialist staff. Coordination of activities related to the management of HAZMAT is therefore carried out through the normal staffing process. The activities of certain specialists are coordinated as follows:

1.2 Division Senior Safety Officer (Div Sr Safe O)

The Div Sr Safe O is responsible for providing overarching direction and oversight to the Division HAZMAT management program. In addition, the Div Sr Safe O advises on the safety and health of personnel and their training in accordance with WHMIS 2015 regulations.

1.3 Division Senior HAZMAT Officer (Div Sr HMO)

The Div Sr HMO provides the day-to-day coordination of the Division HAZMAT Management Program and is the divisional expert on all policy, legislation and regulations pertaining to HAZMAT, and advises spill responders on the proper clean-up and disposal of HAZMAT material in accordance with Ref S (Implementation Directive). The Div Sr HMO is responsible to the Div Sr Safe O and will liaise with other specialist staff for HAZMAT related activities.

1.4 Real Property Operations Unit Ontario (RPOU(O))

RPOU(O) is the real property authority for all infrastructure. To maintain compliance, RPOU(O) works in consultation with the Div Sr HMO, Division Environmental Advisor, and Fire Services to properly prioritize and execute HAZMAT related infrastructure projects. Furthermore, RPOU(O) is responsible for the management of fuel storage tanks throughout their life cycles.

1.5 Division Environmental Advisor

In consultation with the Div Sr HMO, advises on the potential risks, protection, reporting and sustainment measures of the environment as they relate to HAZMAT. Environmental Services is responsible for the management and reporting requirements of the National Pollutant Release Inventory (NPRI), polychlorinated biphenyls (PCBs), storage tank environmental compliance, halocarbon programs, as well as general spill reporting to external government organizations.

1.6 Fire Services

Advises on fire prevention, emergency response requirements, and the respiratory protection program. Provide emergency HAZMAT spill response service on base/garrison. Act as the HAZMAT emergency response team.

1.7 G4

As the Senior Logistics Officer, the G4 coordinates the activities of the following staffs:

1.7.1 Supply

Advises procurement, storage, inventory, and issue of HAZMAT as well as the disposal of hazardous wastes in accordance with DAOD 3015-1.

1.7.2 Transport

Advises on the transportation of HAZMAT, on training and recertification associated with the Transportation of Dangerous Goods (TDG) Act and Regulations, and the investigation of violations of laws and regulations.

1.8 Senior Medical Officer

In consultation with the Div Sr HMO and PMed advises on the toxic effects of HAZMAT and the requirements for personal protective equipment (PPE) for users and, when required, the treatment of injuries.

2. BASE/GARRISON LEVEL HAZMAT RESPONSIBILITIES

2.1 As per Ref I (CAO 11-69), a HAZMAT Management Program must be established on all bases and detachments to satisfy legal requirements for the protection of personnel, infrastructure, equipment and the environment. An effective program must incorporate:

a) A HAZMAT management infrastructure;
b) Standing operating procedures on HAZMAT specifying the responsibilities of personnel at all levels in the chain of command with respect to HAZMAT;
c) A HAZMAT and spill response training program;
d) Effective communication measures;
e) A system for reporting investigation and significant incidents; and,
f) An inspection and evaluation program.

2.2 A base HAZMAT infrastructure should normally include the following elements:

a) A HAZMAT Management Committee;
b) A Base HAZMAT Officer (BHMO);
c) Unit HAZMAT Coordinators (UHMCs); and,
d) Base HAZMAT emergency spill response capability.

2.3 Base HAZMAT Management Committee

Membership

2.3.1 Chairperson: Base Tech Svcs Officer or equivalent

2.3.2 Members: RPOU(O) Rep, B Supply O or equivalent, B Transport O or equivalent, B Surgeon, B/Grn Env O, B Fire Chief, BGSO, UHMCs (optional)

2.3.3 Executive Secretary: BHMO

2.4 Responsibilities

a) Advising the Comd and staff on HAZMAT management;
b) Monitoring the HAZMAT program, facilitating and implementation of the commander's policies and ensuring compliance with pertinent laws and regulations;

c) Reviewing inspection reports and recommending measures to correct deficiencies;
d) Analyzing HAZMAT incidents and recommending measures to reduce their impact and to prevent recurrence;
e) Identifying and coordinating training requirements; and,
f) Ensuring the HAZMAT Emergency Spill Response capability is suitably equipped and trained.

2.5 **Note:** It is acceptable to incorporate the Base HAZMAT Management Committee into a larger standing Base committee (ex. WOSH) if the membership agrees and all issues that normally would be discussed by the HAZMAT Management Committee are appropriately addressed.

2.6 Deputy Commander

Is responsible for the implementation of the HAZMAT management program.

2.7 HAZMAT Emergency Response Capability

This capability may be filled by the fire department, a specially trained and formed emergency spill response team, or an external contractor. Is responsible for responding, containing and removing any release or potential release of HAZMAT that poses a risk to people, the environment or assets that a single unit is not capable of containing.

2.8 Base or Garrison HAZMAT Officer (BHMO) (or equivalent)

As HAZMAT subject matter expert, is responsible to oversee the annual inspection or audit of units and provide guidance on the management of HAZMAT over their entire life-cycle, and advise spill responders on the proper clean-up and disposal of HAZMAT material in accordance with Ref S (Implementation Directive). Develop base or garrison HAZMAT policies. The BHMO is responsible to enforce the HMMP including document control, monitoring and recommendations for improvement. The BHMO has the role of Technical Authority. See CAO 11-69 section 11 for more detail on the responsibilities of the BHMO.

2.9 Base or Garrison Technical Services Officer (BTSO) (or equivalent)

Is responsible for providing overarching direction and oversight on the procurement, acquisition, transport and disposal of HAZMAT, including all requirements associated with the Resource Productivity and Recovery Authority (RPRA). The Base Technical Services Officer is also the chairperson of the Base HAZMAT management committee.

2.10 Base or Garrison Supply Officer (or equivalent)

According to Ref I (CAO 11-69) Annex A, is responsible for determining the use of HAZMAT, procurement, acquisition, quality assurance, inventory management, packing and labelling and oversees HAZMAT collection and disposal.

2.11 Base or Garrison Environment Officer (B/Grn Env O)

Is responsible to coordinate the base or garrison environment program and initiatives, including the base major HAZMAT spill plan. Ensures base activities do not cause an adverse outcome to the environment. The B/Grn Env O is responsible to provide oversight and advice to unit activities on reporting of HAZMAT spills according to ED 4003-1 that

occur on or off base to the appropriate department or government agency. Advise on HAZMAT storage locations with the Fire Marshall and BHMO. As well, monitoring environmental regulatory compliance for storage tanks, PCBs, and halocarbons.

2.12 Base or Garrison Transport Officer (BTO) (or equivalent)

According to Ref I (CAO 11-69) Annex A, is responsible for all aspects relating to the transportation of HAZMAT over the course of their life cycle. Advises the base or formation in regards to TDG regulations.

2.13 Fire Marshall

Upon request and through routine fire prevention inspections, is responsible to ensure department personnel are trained to respond to emergencies involving HAZMAT and dangerous goods in order to contain a HAZMAT spill, respond to incidents involving HAZMAT, ensure HAZMAT storage areas comply with NFCC 2020 requirements and provide technical expertise relating to fire safety.

2.14 The Supporting Institutional Support Organization

Maintain the capability to support all base-related HAZMAT functions related to selection, procurement, segregation, recycling and disposal. Maintain and manage all hazardous waste stored at, disposed or recycled from the base. The Supporting Institutional Support Organization also acts as the signing authority for hazardous waste disposal and the maintenance of RPRA documentation. Ensures qualification, training and competency of vehicle operators who are transporting dangerous goods. Ensures transport personnel adhere to the Transportation of Dangerous Goods Act and Regulations and that they maintain spill control and containment equipment in vehicles.

2.15 Base or Garrison General Safety Officer (BGSO)

Manages the BHMO and is responsible for oversight and safety aspects of the base HAZMAT program. Ensure the WHMIS training program and PPE programs are implemented. Ensure that other HAZMAT training, as it is related to the safety of personnel, is conducted throughout the base and that training records are maintained.

3. UNIT LEVEL HAZMAT RESPONSIBILITIES

3.1 Commanding Officers

Commanding Officers of Units have overall responsibility for the management of HAZMAT in their Unit. At all levels, Commanding Officers must ensure that all activities related to the use of HAZMAT are controlled in such a manner as to limit any potential impacts on human health and the environment. This includes supervision, inspection and documentation of the use of HAZMAT, providing training and awareness on the proper handling and storage of HAZMAT, where possible, eliminating or controlling the use of HAZMAT, ensuring spill control capability exists and providing the selection and training of Unit Hazardous Materials Coordinators to oversee the day-to-day activity of HAZMAT handling. The Commanding Officer of a unit must ensure that a trained UHMC is appointed to manage the HAZMAT

program on their behalf and ensure a suitable replacement is available in case of absences. As well, the unit is responsible for cleaning up their HAZMAT spills as soon as possible. For major HAZMAT spills that the unit is unable to contain or clean up, follow the appropriate administrative instruction of your base or garrison. Also, ensuring completion of daily visual and weekly recorded inspections of all storage tanks to check for signs of spills, leaks or improper housekeeping, and take appropriate corrective action to minimize contamination and protect the environment.

3.2 Unit Hazardous Materials Coordinator (UHMC)

The UHMC will ensure that all unit storage areas are compliant with applicable regulations and policies, all training requirements are identified to commanders, and that management of HAZMAT, over its entire lifespan, is compliant with existing regulations and DND/CAF policies. Included in this would be attending UHMC meetings, inventory maintenance through HMRA, providing awareness training, conducting inspections, assisting with audits, ensuring emergency response preparedness, act as the HAZMAT Control Authority (HMCA) in the unit, and ensuring that Safety Data Sheets (SDSs) are maintained.

3.3 Unit General Safety Officer (UGSO)

Is responsible to ensure all incidents involving HAZMAT are investigated. The UGSO liaises with other personnel to provide overarching safety advice for the management of HAZMAT. Ensure the WHMIS training program and PPE programs are implemented. Ensure that other HAZMAT training as it is related to the safety of personnel is conducted throughout the base and that training records are maintained. The UGSO is responsible for conducting safety inspections and surveys to verify that the General Safety Program is functioning as intended.

3.4 Unit Environment Officer (U Env O)

Is responsible to coordinate environmental policies, plans, programs, and procedures at the unit level and evaluate environmental performance by coordinating environmental audits, reviews and/or inspections at the Unit. The U Env O must receive reports of spills by the unit upon their occurrence. Ensure that the Spill Report Form is completed after a HAZMAT spill and providing an electronic copy of all reportable spills to the local Grn Env O. Ensure the unit adheres to waste management procedures.

3.5 Regimental Quartermaster/Unit Supply Officer

Is responsible for the procurement, acquisition, quality assurance, and inventory management of HAZMAT. The Regimental Quartermaster or Unit Supply Officer usually has the role of Delegated Procurement Authority (DPA) because they have signing authority for making HAZMAT purchases.

3.6 Workers/Individuals

All individuals are responsible to comply with the applicable legislation, standards, and policies related to HAZMAT management. Individuals are required to report unsafe work conditions as well as any HAZMAT-related incidents within the HAZMAT life cycle immediately to their supervisor. Individuals must understand the information contained on HAZMAT labels and in SDSs in use in the workplace.

4. ASPECTS

4.1 Workplace Procedures

4.1.1 Job Task Analysis

According to Ref O (Hazardous Materials Safety and Management Manual) Chapter 25, these analyses are meant to identify any risks associated with HAZMAT related tasks within the unit. Units handling HAZMAT in any capacity must understand the dangers associated with handling hazardous products in their workplace. These analyses are especially useful for review by newly posted individuals tasked with HAZMAT responsibilities. A standard template can be found in Annex A.

4.1.2 Acquisition/Procurement

4.1.2.1 Where practicable, HAZMAT procurement must be decentralized and delegated to an appropriate level. Procurement of HAZMAT must be performed through a Delegated Procurement Authority (DPA) having oversight of HAZMAT purchases for the branch, unit, or section. The Regimental Quartermaster or Unit Supply Officer is usually the DPA. The use of DND payment cards to purchase HAZMAT must be minimized. Payment card holders must follow the requirements of the ADM(Fin) Payment Card Program. Section 8.3 of this HMMP explains further steps for HAZMAT procurement.

4.1.2.2 As per Annex D, HMRA must be consulted prior to purchasing HAZMAT to ensure that prohibited products are not being introduced to the HAZMAT life cycle. A Safety Data Sheet must accompany any introduction of HAZMAT to the workplace. If SDSs are not available on the HMRA database, the data sheets must be obtained directly from the product manufacturer or distributor and entered into HMRA before use.

4.1.2.3 The DPA and the HMCA must limit the amount of HAZMAT in the workplace to not exceed the required levels for standard tasks and operational objectives.

4.1.3 Operational Requirements

The HMCA must identify all activities and processes that require the use of, or generate HAZMAT in order to ensure that they are carried out with due diligence. Pollution prevention measures should be applied to these requirements. This may include preventing excessive accumulation of HAZMAT and hazardous wastes.

4.1.4 Safety Data Sheets

A Safety Data Sheet (WHMIS 2015) is required for all products that are covered by Ref B (Hazardous Products Act). A hard copy or readily available electronic copy of the most recent SDS is required for all HAZMAT stored or used in the workplace. Ideally, the SDS would be maintained and reviewed in the workplace prior to the material being introduced. However, at a minimum, the SDS must accompany the goods or materials when the product enters the workplace.

4.1.5 External Relations

The 4 Division Commander is ultimately responsible for communicating this plan and its associated policies and directives to 4 Div personnel and making it available to the public upon request.

4.1.6 Record of Holdings

4.1.6.1 The legal requirement under Ref G and H (the Canada Labour Code Part II and its regulation the Canada Occupational Health and Safety Regulations Part X) requires a

record of all hazardous substances that are used, produced, handled or stored in the workplace.

4.1.6.2 A HAZMAT holdings record contains information that encompasses container sizes, maximum and actual amounts held, the product identifier, location, the unit using the material and the person responsible for the storage area.

4.1.6.3 All units must maintain a holdings record of the HAZMAT stored within their unit locations. The national database, Hazardous Materials Reference Application (HMRA), will be used to maintain these records. **Complete revisions and updates to the holdings records must be conducted at least every 6 months**. As per DAOD 4003-1 Section 3.8, the use of HMRA is mandatory. For more information on HMRA, refer to Annex H Appendix 2 of this HMMP.

4.2 Workers

4.2.1 Information

All units must ensure that information regarding the hazards of HAZMAT is communicated to workers in the workplace through appropriate training, the review of Safety Data Sheets and workplace hazard assessments.

4.2.2 Training

The Canada Labour Code Part II and its regulations require that employers ensure that workers have the knowledge of the safe use and handling requirements for HAZMAT in the workplace. The purpose of training is so that personnel are educated to recognize the risks associated with HAZMAT used in the workplace; personnel are prepared to respond to emergency situations; and personnel exercise proper methods of due diligence and documentation. Training requirements are detailed in Annex B.

4.2.3 Protection

HAZMAT must meet special labeling requirements and the workplaces in which they are used must have applicable signage (WHMIS, TDG). All HAZMAT must be handled with care ensuring that users are using proper personal protective equipment (PPE) in accordance with applicable legislation, policies, and safety data sheets. According to the Canada Labour Code section 122.2, the Hierarchy of Controls is a system used to minimize or eliminate exposure to hazards in order of decreasing effectiveness: elimination, substitution, engineering controls, administration and finally, PPE. PPE requirements are detailed in Annex C of this HMMP.

4.3 Wastes

4.3.1 Waste Collection

4.3.1.1 All 4 Div units must collect, segregate, and store hazardous waste they generate, which will then be disposed of through their support base.

4.3.1.2 Support Base Hazardous Waste Disposal Staff must:

a) receive haz waste disposal requests from units;
b) at armouries, coordinate the pick-up of haz waste from units by a licenced contractor and qualified Support Base staff;
c) ensure the waste is certified by an authorized person in accordance with DND policy;
d) ensure haz waste is sent to an approved facility (consignee);

e) complete all applicable regulatory documents; and
f) keep copies of manifests, laboratory results and shipping documents.

4.3.2 Waste Disposal

4.3.2.1 When shipping hazardous wastes to a disposal, holding, or transfer facility, the support base must comply with all provincial requirements to register their wastes, use RPRA manifests, and use authorized shipper and disposal contractors. Furthermore, inter-provincial movement of wastes has additional federal legislative requirements. All personnel involved in the transport of hazardous wastes must be trained and certified in Transportation of Dangerous Goods (TDG) in compliance with Ref D and E (Transportation of Dangerous Goods Act and regulations).

4.3.2.2 All vehicles and mobile equipment used in the movement of minimum quantities of hazardous wastes must be compliant with the Transportation of Dangerous Goods Act and regulations. This includes, but is not limited to:
a) equipment to secure and protect the shipment from damage,
b) appropriate fire extinguishing equipment,
c) spill response equipment appropriate to the class of the shipment, and
d) a current SDS for all products being transported.

4.3.2.3 All dangerous goods must be properly classified, labelled, packaged, stored, manifested and secured prior to and during transport in compliance with TDG regulation requirements.

4.3.2.4 All bases and garrisons must develop, implement, and maintain a procedure for the proper disposal of hazardous waste applicable to their tasks and operations. Furthermore, all formations and units will comply with their supporting base or garrison policies and procedures.

4.3.3 Certifications and Registrations

4.3.3.1 Resource Productivity and Recovery Authority (RPRA)

4.3.3.1.1 Ref R (R.R.O. 1990, Reg. 347 General – Waste Management) defines subject wastes, requires subject waste generators to register with the RPRA. **A RPRA Generator Number is required to generate, transport, and dispose of all subject wastes in Ontario.**

4.3.3.1.2 The RPRA is a provincial online generator registration and manifesting system for generators, carriers, and receivers of subject wastes. RPRA is used to pay the monthly invoices and process electronic manifesting to record and track the movement of subject waste from the generator through to final disposal.

4.3.3.1.3 Prior to the transport and disposal of subject wastes from site, units must ensure that all subject wastes are registered with RPRA and the manifesting of such transactions is in compliance with all federal and provincial legislation. A Registration Guidance Manual for Generators of Liquid Industrial and Hazardous Waste from the Ministry of the Environment, Conservation and Parks is located at https://www.ontario.ca/page/registration-guidance-manual-generators-liquid-industrial-and-hazardous-waste

4.3.3.2 Transportation of Dangerous Goods (TDG)

4.3.3.2.1 The TDG Act and Regulations set out the rules for packaging, shipping, and identifying dangerous goods that are transported by federally regulated methods.

4.3.3.2.2 TDG Regulations state that a person who handles, offers for transport or transports dangerous goods must be adequately trained and hold a training certificate.

4.3.3.2.3 Units must ensure that any hazardous waste being disposed of or transported off-site is handled in accordance with the TDG Act and Regulations and the waste manifest process is completed by a certified individual to the extent that it does not impede the operational mission of the unit or element.

4.3.3.3 Effluent and Emissions

Air emissions and waste-water effluents may contain some quantities of HAZMAT. These effluents and emissions must meet regulatory requirements and the levels of HAZMAT must be kept as low as reasonable possible in order to meet compliance and stewardship requirements. Some additional Environment Program reporting (NPRI, etc.) may be required at your base, unit or formation.

4.4 Emergencies

4.4.1 Preparedness and Prevention

In order to practice the 4Rs (Reduce, Reuse, Recycle and Recover) of pollution prevention, there are various aspects that must be considered in the management of HAZMAT. At a high level, environmental considerations should be integrated into procurement policies and practices in accordance with Ref M (DAOD 3015-1 Management of Green Procurement). Furthermore, units must determine the actual need to acquire certain materials given hazardous characteristics and associated risks. Units should practice green procurement of HAZMAT and eliminating HAZMAT with high toxicity (prohibited and restricted products) on an ongoing basis. Ultimately, units should be practicing pollution prevention activities and operations by seeking cost effective ways of reducing the consumption of raw materials, toxic substances, energy, water, and other resources.

4.4.2 Fire and Spill Response

When spills occur they must be promptly reported to the responsible authorities and appropriate actions must be taken to respond, control and contain the spill and mitigate the risks to people, the environment, and property. Refer to your local Base/Garrison standard operating procedures or administrative instruction for specifics on spill response.

4.4.3 Review and Improvement

Spill and emergency incidents must be documented within a reasonable amount of time after the incident. Units should familiarize themselves with their Base/Garrison specific reporting time requirements. The report should include aspects such as understanding the cause of the incident, the quality of the response and identifying and implementing continuous improvement actions.

5. LEGAL, POLICY AND OTHER REQUIREMENTS

5.1 This section provides a description of the key references and their requirements. It also provides useful references for understanding and complying with the requirements of the following and in clarifying the situation in which provincial laws have authority.

5.2 Canadian Environmental Protection Act (CEPA)

This is an omnibus act that gives the federal government wide powers to evaluate, monitor, control or prohibit the manufacture, importation, use, release, export or disposal of chemicals and other substances. Ref A (CEPA) contains specific regulations that are relevant to HAZMAT management at federal facilities.

5.3 Hazardous Products Act and Regulations

This act and regulation create the WHMIS 2015 requirements for manufacturers and, in some cases, suppliers to prepare Safety Data Sheets and to label products with warning symbols and phrases.

5.4 Transportation of Dangerous Goods Act

This act sets the rules for packaging, shipping and identifying dangerous goods that are transported by federally regulated methods. Each province and territory generally adopts the TDGA rules for general application within their jurisdictions. The TDGA does not apply to "any activity or thing under the sole direction or control of the Minister of National Defence or in circumstances in which it is prescribed to be under that Minister's sole direction or control." It is DND policy, however, to follow the TDGA as a best management practice for the transportation of HAZMAT within the facility, on or across public roads, or for administrative or non-tactical transport within a military training area. ADM(Mat) Training and CFLTC have specific authorities for policy advice and certification in these areas.

5.5 Canada Labour Code Part II

The act and regulations, in coordination with the Hazardous Products Act and regulations, create the legal requirement for the federal WHMIS program. The Canada Occupational Health and Safety Regulations under this act contain detailed requirements for HAZMAT management. Key requirements are:

a) The Canada Labour Code section 122.2 "Preventive measures should consist first of the elimination of hazards, then the reduction of hazards and finally, the provision of personal protective equipment, clothing, devices or materials, all with the goal of ensuring the health and safety of employees."
b) COHSR 10.3 "Every employer shall keep a record of all hazardous substances that are used, produced, handled or stored for use in the work place and may either keep such a record in the work place or keep a centralized record in respect of several work places in one work place."
c) COHSR 10.16 "No person shall use a hazardous substance in a work place if a non-hazardous substance or one that is less hazardous can be used instead."

5.6 PCB Regulations

The PCB Regulations set specific deadlines for ending the use of PCBs in concentrations at or above 50 mg/kg, eliminating all PCBs and equipment containing PCBs currently in storage and limiting the period PCBs can be stored before being destroyed. These requirements, together with the more stringent release limits, will further reduce releases of PCBs into the environment. The labelling and reporting requirements for PCBs provide the necessary information to monitor progress towards end-of-use targets. The PCB Regulations also establish sound practices for the better management of the remaining

PCBs in use (ex. those with content of less than 50 mg/kg), until their eventual elimination, to prevent contamination of dielectric fluids and dispersion of PCBs in small quantities into other liquids.

5.7 Canadian Army Order 11-69 Hazardous Materials Management

Defines the policy for the development, implementation and administration of the Canadian Army HAZMAT Management Program, which prescribes roles and responsibilities.

5.8 Treasury Board Hazardous Substance Directive

This directive and the Canada Labour Code require the employer to use the least hazardous substance available when HAZMAT is required in the workplace. This directive also requires that workplace safety and health committees review all hazard assessments and that a report of these assessments be kept for thirty years. This directive forms part of labour management collective agreements. A practical method to accomplish the objectives of the directive is to follow an approval process for the introduction of any new HAZMAT in the workplace. The suggested criteria for determining which HAZMAT to target for evaluation are:

5.8.1 Workplaces in which a concern already exists and has been formally raised to a workplace health and safety committee;

5.8.2 Workplaces regularly using large amounts of any products that fall into the WHMIS classes:

a) flammable liquids,
b) Self-reactive substances and mixtures,
c) Acute toxicity (fatal or toxic), or
d) Biohazardous infectious materials.

5.9 ED 4003-1 – Spill Reporting

This ED encourages the prevention of spills and details response and reporting actions to be taken upon the discovery of a spill into the environment. This ED defines spills, roles, responsibilities, and procedures.

5.10 DAOD 4003-0: Environmental Protection and Stewardship

The DND and the CAF are accountable for the impact that defence activities have on the environment. The intent of this policy is to ensure DND employees and CAF members respect the environment, exercise environmental stewardship, and protect public and non-public properties and assets held in trust.

5.11 DAOD 4003-1: Hazardous Materials Management

States all base operations must meet or exceed the letter and spirit of all applicable federal acts, regulations, policies, and guidelines and, where appropriate, be compatible with provincial acts and regulations, and municipal standards and bylaws, with respect to HAZMAT and waste management. DAOD 4003-1 must be always adhered to in the execution of the HMMP. This administrative order defines the terms HAZMAT, HAZMAT Control Authority, Delegated Procurement Authority, and Technical Authority and provides the overall departmental direction on HAZMAT Management.

5.12 DAOD 3015-1: Management of Green Procurement

Green procurement involves thinking long-term and considering the related costs throughout the life cycle of a good or service, not just the effect on the current year budget.

5.13 ED 4003-9 Hazardous Materials Management Plans

In response to the 1999 Report of the Auditor General on the management of HAZMAT in DND/CAF, the department committed to issue guidance for facilities on the development of HAZMAT management plans. The 2000 Sustainable Development Strategy required the Director General Environment (DGE) to issue national guidance as well. This directive fulfills these commitments.

5.14 A-GG-040-004/AG-001 Hazardous Materials Safety and Management Manual

This manual combines information from the DSafeG WHMIS program, the former Supply manual for Hazardous Materials Management and relevant DGE Environmental policies into one manual for reference by General Safety Officers and others.

When DSafeG removes their HAZMAT Safety and Management Manual in the near future, it will not be replaced with a new version. Instead, the ADM(Mat) Supply Administration Manual (SAM) A-LM-007-100/AG-001, which is regularly updated, contains several sections on HAZMAT management. These sections, including sections 9.8, 9.9, and 9.10, should be used after DSafeG removes their own publication.

6. OBJECTIVES AND TARGETS

6.1 These objectives are derived from the General Safety Program and ED 4003-9:

a) Protect personnel, property and the environment.
b) Implement and maintain HMRA for all locations which store and use HAZMAT.
c) Prevent or minimize the release of any HAZMAT into the environment and provide adequate and timely response to all spills and releases.
d) Manage hazardous materials responsibly.
e) Minimize the sources for introducing pollutants into the natural environment.
f) Minimize the consumption of non-renewable resources.
g) Maximize opportunities to reduce, reuse or recycle consumable materials and packaging.
h) Maximize pollution prevention opportunities by planning for and improving on the procurement and use of greener, less toxic products.
i) Reduce the impact of releases and emissions on air quality.
j) Minimize the introduction of greenhouse gases and ozone depleting substances into the environment.

6.2 This HMMP seeks to meet national level HAZMAT targets.

7. HAZMAT MANAGEMENT PROGRAMS & APPLICATIONS

7.1 HAZMAT Reference Application (HMRA)

7.1.1 HMRA is a multi-faceted management tool developed and maintained by the Directorate of Supply Chain Operations (DSCO). This tool was developed to address the many legal policy shortfalls noted by the Auditor General in the 1999 report on HAZMAT management within DND.

7.1.2 HMRA is mandatory in all DND workplaces for the following activities:

a) Managing maximum holdings information and inventories to capture immediate and current records of HAZMAT products in use in the DND workplace

b) Maintaining a list of the most recent Safety Data Sheets for HAZMAT repositories in DND workplaces

c) Selecting less hazardous products and identifying banned or restricted products in the procurement of HAZMAT.

7.1.3 No units may acquire, handle, or store any hazardous product in their inventory that is not listed in HMRA.

7.1.4 The database houses and supports the requirements for SDS sheets, the identification of prohibited or restricted products, preferred product selection and a variety of reporting functions such as storage site hazard assessments and holdings reports.

7.1.5 The UHMC is responsible for maintaining HMRA for the unit materials and storage site(s). Detailed information on HMRA can be found in Annex D.

7.2 HAZMAT Training Program

7.2.1 To ensure that the management of HAZMAT meets the requirements of due diligence and applicable legislation and to ensure the health and safety of all personnel within the DND workplace, 4 Division units and lodger units have access to the following training courses as detailed in Annex B:

a) Unit Hazardous Materials Coordinator (UHMC)

b) Hazardous Materials Reference Application (HMRA)

c) Large Spill Response

d) Small Spill Response

e) TDG Haz Waste Consignor

f) WHMIS 2015

7.3 HAZMAT Communications

Communication of HAZMAT and hazardous waste issues to all personnel within unit lines is essential. Commanding Officers must ensure that information required by unit members is disseminated in a timely manner. A variety of methods can be used to meet this requirement, including administrative networks, routine orders, safety committees, and training sessions.

7.4 HAZMAT Storage and Handling Procedures

HAZMAT shall be selected, procured, handled, used, stored, transported and disposed of in a manner that protects human health, the environment and equipment and meets all legal

requirements. Details for the proper storage and handling of HAZMAT can be found in Annex E.

7.5 HAZMAT Procurement Program

The procurement of HAZMAT must be in accordance with Ref M (DAOD 3015-1 Management of Green Procurement). The life-cycle management of HAZMAT must be considered prior to the introduction of HAZMAT to the DND workplace. If applicable, the ADM(Fin) Payment Card Program must be followed in order to use a DND payment card.

7.6 HAZMAT Disposal Program

The disposal of HAZMAT (hazardous wastes) must be carried out in compliance with Ref D and E (Transportation of Dangerous Goods Act and its regulations), applicable DND policies and provincial requirements where reasonable. All units must ensure compliance with their applicable Base/Garrison hazardous waste disposal procedures. The HAZMAT disposal program is generally maintained by the Repair and Disposal Section (R&D). R&D is also able to assist with disposal of PCB waste in accordance with the PCB Regulations.

7.7 HAZMAT Emergency Response Program

7.7.1 A HAZMAT spill requires immediate and decisive action. Any unit which stores, handles, or uses HAZMAT requires a spill plan. The spill planning process must consist of both spill prevention and spill response planning. The objective of a spill prevention plan is to review current practices with a plan to prevent spills before they occur in accordance with Ref O (Hazardous Materials Safety and Management Manual) Chapter 13. HAZMAT spills are preventable through detailed risk management and education.

7.7.2 All units will develop, post and maintain emergency response procedures based on unit activities and holdings. Clearly detailed lines of communication must be implemented in the case of an emergency. Units may choose to adopt and personalize the associated Base/Garrison spill response plan in accordance with Ref I (CAO 11-69) Annex C.

7.7.3 Emergency response equipment must be readily available to all emergency response personnel. Spill kits must be made readily available to all units where a risk of a spill exists.

7.7.4 The SDS should be consulted for the proper selection of personal protective equipment

8. IMPLEMENTATION AND OPERATION

8.1 Structure/Roles/Responsibilities

8.1.1 Commanding Officers of units must appoint an individual as HAZMAT Control Authority (HMCA) as defined in Ref K (DAOD 4003-1) to review, and if appropriate, approve the introduction or continued use of HAZMAT in the workplace.

8.1.2 The HMCA must, in consultation with HMRA, maintain the preferred, restricted and prohibited product lists. Consideration must be given to the life cycle management of HAZMAT during the selection stage. Explicitly, the HMCA must consider if the specific task and operational requirements can be achieved by using a less hazardous material or previously existing material.

8.1.3 The UHMC should have the role of HMCA to evaluate and track HAZMAT introduced to the workplace. The purchaser for the unit should be the delegated procurement authority (DPA), who is the Regimental Quartermaster or Unit Supply Officer to ensure that

HAZMAT is responsibly purchased. The BHMO is the Technical Authority (TA) and is available to provide guidance on HAZMAT.

8.2 Selection

8.2.1 The selection of HAZMAT should be completed efficiently, effectively, and safely to perform a task and meet operational requirements without the hazardous material(s) being a risk to human health, the environment, equipment or property. The Canada Occupational Health and Safety Regulations section 10.16 requires the responsible selection of HAZMAT.

8.2.2 During the initial selection of HAZMAT, the HMCA, the Technical Authority (TA) and the users are responsible to perform the following actions:

a) Consider choices
b) Select Material
c) Conduct tests and trials
d) Assess risks
e) Obtain technical data including SDSs
f) Develop specifications

8.2.3 When evaluating the costs of selecting HAZMAT, considerations for indirect costs should also be deliberated. These costs could include:

a) Documentation and labeling requirements
b) Shipments by trained and qualified drivers
c) Specialized shipping and transport requirements and containers
d) Specialized storage facilities, lockers, and sheds
e) Education and training of workers in the safe handling of the product
f) Obtaining and maintaining SDSs
g) Personal protective equipment (PPE)
h) Remediation if spills or releases occur
i) Penalties accumulated due to non-compliance events
j) Specific disposal requirements

8.3 Procurement

8.3.1 All units must appoint an individual as Delegated Procurement Authority (DPA) as defined in DAOD 4003-1 to have sole oversight of HAZMAT purchases for the unit. This is usually the Regimental Quartermaster or Unit Supply Officer. In doing so, greater control can be maintained over the quantities of HAZMAT purchased and stockpiled in the workplace.

8.3.2 The DPA may facilitate the purchase of the product or materials only once they have received approval from the HMCA (usually the UHMC).

8.3.3 During the procurement of HAZMAT, the DPA and the HMCA must perform the following actions:

a) Select the source of supply and the means of procurements
b) Consult and coordinate with the TA (BHMO) prior to purchase
c) Ensure that the SDS accompanies the product
d) Make appropriate material data entries into HMRA

8.3.4 The DPA and HMCA must limit the amount of HAZMAT in the workplace to quantities not exceeding those required to perform required tasks and meet operational objectives.
8.3.5 Ultimately, Green Procurement is the responsibility of the G4/Tech Services.

8.4 Use and Handling

8.4.1 HAZMAT must be handled safely and with care throughout the workplace. It is the responsibility of the Commanding Officer (CO) to provide hazardous material users with the proper PPE.
8.4.2 It is the responsibility of the user to properly use the PPE provided to them when handling HAZMAT and products. All users must consult and refer to the SDS to determine the appropriate PPE and handling of the material. All HAZMAT must be used in accordance with the manufacturer's guidelines and applicable procedures at the base/branch/unit/section levels.
8.4.3 Every effort must be made to reduce HAZMAT usage, avoid, or minimize the creation of pollutants and wastes and limit the storing of HAZMAT to quantities necessary to meet operational requirements.
8.4.4 During the use of HAZMAT, users and their supervisors must perform the following actions:

a) Have on hand the SDSs for products in inventory
b) Read and understand the above mentioned SDSs
c) Comply with control measures and train personnel to handle the associated risks
d) Obtain and use appropriate PPE
e) Have on hand any emergency response equipment that may be required
f) Ensure the inventory of HAZMAT is up to date by coordinating with the UHMC, HMCA, and DPA
g) Ensure all products are labelled prior and subsequent to use
h) Receive, deliver, package, and decant HAZMAT appropriately
i) Provide spill response

8.5 Storage

8.5.1 The proper storage of HAZMAT within the workplace must be practiced to ensure that HAZMAT is kept in compliance with this HMMP. Furthermore, designated storage areas must be maintained and effectively managed to ensure a safe workplace.
8.5.2 All HAZMAT must be properly warehoused and stored in accordance with compatibility groupings in properly designed, constructed, and managed storage areas as per relevant legislation and policy explained in Annex E.

8.5.3 All units responsible for HAZMAT are responsible for performing the following actions in accordance with established procedures:

a) Select an appropriate storage site and organize it on the basis of the risks associated with the product to be stored (considering compatibility, risk of fire, detectors, emergency eye wash stations, secondary containment, emergency response, etc.)
b) Ensure compatibility of HAZMAT
c) Appropriately identify any premises used to store HAZMAT
d) Control access and provide security
e) Have available and use appropriate PPE

8.6 Transporting

8.6.1 HAZMAT must be transported safely and in compliance with Transportation of Dangerous Goods Act and applicable policies. All personnel involved in the transport of HAZMAT and dangerous goods must be trained and certified in Transportation of Dangerous Goods to the required level matching their responsibilities.

8.6.2 Drivers transporting Dangerous Goods in DND vehicles must possess a valid DND Carrier of Dangerous Goods Certificate. See Annex B for more details on required training. All dangerous goods must be properly classified, labelled, packaged, stored, manifested, and secured prior to and during transport.

8.6.3 All vehicles and mobile equipment must be compliant with the Transportation of Dangerous Goods legislation and be placarded and equipped with the following when transporting HAZMAT and dangerous goods:

a) Equipment to secure and protect the shipment from movement and damage
b) Appropriate fire extinguishing equipment and capacity
c) Spill response plan and equipment appropriate to the class of the dangerous good
d) A current SDS for all products or materials being transported

The transportation of HAZMAT requires the carriers, shippers, and receivers to:

a) Have the required TDG certifications,
b) Package, label, and place symbols and placards in accordance with the applicable regulations
c) Load and unload materials safely
d) Record manifests
e) Choose the appropriate mode of transportation
f) Provide spill response

8.6.4 Any release or spill which occurs during the transport of HAZMAT and dangerous goods must be reported to the B/Grn Env O as soon as it is safe and possible to do so.

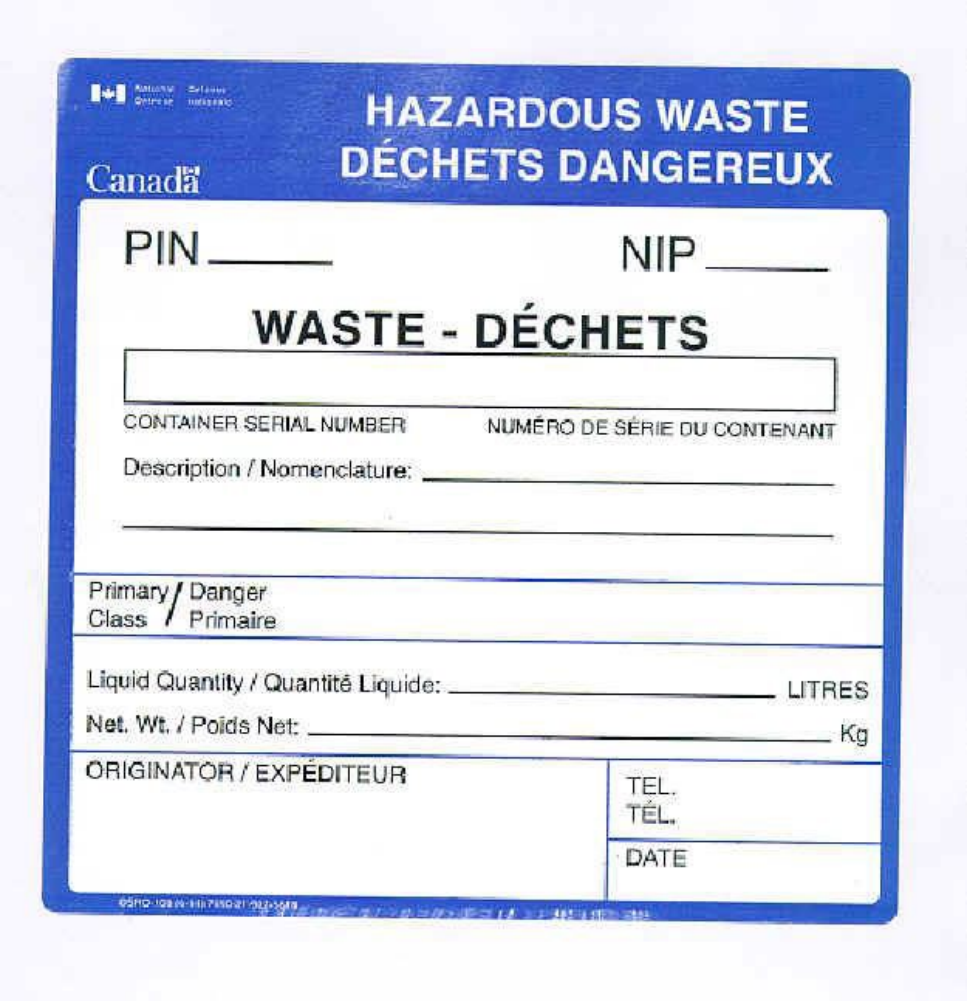
8.6.5 Ultimately, the transportation of HAZMAT is under the responsibility of the G4/Tech Services.

8.7 Disposal

8.7.1 All hazardous wastes must be disposed of safely and in accordance with applicable legislation and base policy.

8.7.2 All users handling the disposal of hazardous wastes must:

a) Have the TDG Haz Waste Consignor course certificate
b) Select an appropriate waste handling site and organize it based on the risks associated with the products to be disposed of
c) Ensure compatibility of hazardous wastes
d) Appropriately identify any container or premise used to collect hazardous waste (ex. DND Hazardous Waste label) (NSN 7690-21-907-5618). The unit will fill out the following fields on the label: Description, Primary TDG Class, Quantity, Originator, Tel. And Date. R&D staff will add any additional information and seal the label in the plastic.



e) Control access and provide security
f) Provide a copy of the SDS
g) Test and classify wastes
h) Make appropriate data entries to keep the HMRA current and up to date
i) Provide spill response

8.7.3 G4/Tech Services and R&D are responsible for the management of HAZMAT disposal.

8.8 Waste Manifests (RPRA forms)

8.8.1 All generators of hazardous waste must register with the Ontario MOECP. Registration must include for each site (armoury, training area, etc.):

a) The types or classes of wastes that will be generated
b) The anticipated yearly quantities that will be generated
c) Name and number of contact persons

8.8.2 Once this information is obtained, a registration number or generator identifier is issued by the province or territory; and is required in all correspondence and waste documentation such as waste manifests. Sites must continue to use the same generator number.

8.8.3 Waste Manifests can only be transmitted and signed by individuals trained in a Transportation of Dangerous Goods Consignor course that fulfills the requirements of the Ontario MOECP when shipping hazardous wastes off site.
8.8.4 G4/Tech Services is ultimately responsible for the management of Haz Waste transportation.

8.9 Emergency Response

8.9.1 The proper planning of emergency/spill events is crucial in achieving safe, timely, and efficient response to hazardous material incidents.
8.9.2 Initial HAZMAT emergency spill response is a unit responsibility. Beyond basic emergency response, the unit must ask for assistance if the scale of the emergency exceeds the unit's basic response capabilities in terms of resources, technical knowledge, or expertise.
8.9.3 Environmental Services must immediately (or within a reasonable amount of time) be made aware of any emergency or incident that may affect the natural environment.
8.9.4 Generally, the facilities maintenance contractor, the base Fire Marshall – or, if not applicable, the local fire department – is the primary lead for escalated emergency response.
8.9.5 The UHMC must ensure that all personnel within their unit are aware of the emergency response plan and procedures, its contents, and the members' roles and responsibilities.
8.9.6 Commanding Officers must ensure the adequate provision of financial, equipment, and personnel resources essential to executing the basic response to HAZMAT emergencies in the workplace.
8.9.7 The UHMC must consider the following when planning and executing unit-specific spill response plans and actions:

a) Training
b) Emergency response equipment
c) PPE
d) Initial response and containment
e) Initial incident reporting
f) Decontamination actions
g) Site Inspections

8.10 Reporting

8.10.1 All units must ensure that reporting requirements are followed in accordance with the Base/Garrison administrative instructions and associated policies and that the B/Grn Env O is informed of all emergency response activities and incidents.

8.11 Training and Awareness

8.11.1 Ultimately, maintaining awareness and training for all individuals involved with HAZMAT in any capacity is the responsibility of the Commanding Officer of the unit. To ensure that all personnel are maintaining a significant level of hazardous material awareness and training, **Commanding Officers must ensure that all units have a UHMC and that the individual is trained appropriately** in UHMC, HMRA, and small spill response training courses.

8.12 Reporting and Record Keeping Requirements

8.12.1 Record keeping is a key element of due diligence. Several reporting requirements must be met to ensure both legal compliance and conformance. All documentation relating to the unit's HAZMAT management (manifests, incident reports, spill reports, etc.) must be retained and **stored for at least 7 years** for due diligence and auditing purposes.

8.12.2 The B/Grn Env O is responsible for collecting, coordinating, and reporting on the National Pollutant Release Inventory (NPRI), Polychlorinated Biphenyl (PCB), and spills.

8.12.3 Branch Heads, COs, or their designate must ensure the following HAZMAT management documentation is maintained at the unit level:

a) Inspection and audit reports
b) HAZMAT incident reports
c) Corrective action plans
d) HMMP
e) Request for approval of a new HAZMAT
f) Manifesting and shipping documents
g) Receipts for HAZMAT and hazardous waste transactions
h) Training records
i) Holdings records
j) Records of qualifications

8.12.4 Training records for all personnel attending the UHMC, HMRA, and spill courses must be retained for a minimum of 7 years. **All training data must be input into HRMS or Monitor Mass**.

8.12.5 In accordance with Ref Q (Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations), POL system maintenance records must be kept for 5 years. Leak inspection records must be kept until the system is removed. Some HAZMAT related data (PCB disposals, spills, ammunition brass, etc.) must be tracked and recorded at the direction of the B/Grn Env O. According to the TDG Haz Waste Consignor course, units are required by Ref R (R.R.O. 1990, Reg. 347 General – Waste Management) to submit Copy 1 of the movement manifest to the MOECP within three working days of the waste being removed from the site.

8.13 Halocarbons

Halocarbon gases can be found in Halon fire extinguishing systems in armoured fighting vehicles. Releases of this inert gas are important to track because they destroy the ozone layer and are very potent greenhouse gases. Environmental Services is responsible to provide advice, develop the phase out plans, and provide halocarbon environmental awareness training and to report releases to Environment Canada. Engineering and G4/Tech Services are responsible to implement halocarbon management plans and phase out plans, as well as to maintain the Halocarbon Management System.

8.14 Storage Tanks

RPOU(O) is responsible for the management of the full life cycle of tanks. This includes planning, acquisition, maintenance, reporting, and disposal. HAZMAT Officers may provide advice. As well, BEnvOs provide environmental compliance advice on storage tanks.

9. CHECKING AND CORRECTIVE ACTION

9.1 <u>Measurement and Monitoring</u>

9.1.1 The monitoring of HAZMAT management compliance with legislation, policy and the HMMP is key for the success of any HAZMAT management plan. Audits and inspections are fundamental channels for determining opportunities for continuous performance improvement of HAZMAT management.

9.1.2 Monitoring at the unit level will consist of the following:

a) Quarterly inspections conducted by the UHMC using the form attached in Annex F Appendix 1
b) Periodic inspections/audits undertaken by the Brigade Safety Officer or Base HAZMAT Officer

9.1.3 Inspections are compliance monitoring and verification tasks executed using checklists which ensure that the HAZMAT management process is operating as prescribed, and that HAZMAT policy and procedures are being adhered to in the unit by all personnel.

9.1.4 Audits are a comprehensive assessment of unit-wide hazardous material management performance and compliance and may be thought of as holistic verification. Audits can be either external or internal.

9.1.5 Units must develop, implement, and maintain an inspection and audit procedure for monitoring and measuring hazardous material management compliance.

9.1.6 The UHMC is required to audit the following activities every year:
a) Review unit procedures, documentation, plans, manifests, and any other applicable records relevant to hazardous material management
b) Review the unit holdings records for compliance and ensure that inventories are properly managed on HMRA
c) Verify that spill response procedures are practiced and understood by all unit personnel

9.1.7 It is equally as important to note that all information within this HMMP must be reviewed at least every year to ensure applicability to new or current legislation, policies, and best management practices.

9.2 Non-Conformance and Corrective and Preventive Action

9.2.1 **Non-compliance** is defined as a failure to comply with any federal act or regulation enforced by an agency external to the Department of National Defence such as Employment and Social Development Canada Labour Program.

9.2.2 **Non-conformance** is defined as a failure to comply with departmental orders, directives, and policies.

9.2.3 Branch Heads and COs are responsible for ensuring their operations and personnel under command comply with the HMMP, policy, and legislation respecting HAZMAT management. All issues of non-compliance and non-conformance must be reported immediately to the Branch Head or CO through the Chain of Command. Commanding Officers or their designates who become aware of either a unit non-compliance or non-conformance issue must ensure the necessary corrective actions take place.

9.2.4 Personnel responsible for Safety Services, RPOU(O), Environment, or HAZMAT within the base may, at times, forward reports of non-compliance or non-conformance to the Commanding Officers for action and comment.

10. MANAGEMENT REVIEW

10.1 The management review process must address the possible need for changes to policy, objectives, procedures, and other elements of the HMMP and the HAZMAT program.

10.2 An annual review of the HMMP is required to determine the plan's overall effectiveness to achieve base and departmental objectives. The annual review will be based on periodic system inspections, audits, and feedback. The 4 Div Senior HAZMAT Officer will coordinate the annual review of the 4 Div HMMP in coordination with other applicable base or garrison departments, such as environment, fire, supply, etc.

10.3 The annual review of the HMMP must consider at a minimum:

a) Progress towards achieving Sustainable Development and Environmental Strategy objectives and targets
b) Hazardous material policies, directives, and orders
c) Hazardous material incident reports
d) Inspection and audit reports
e) SDS reporting
f) Compliance issues

ANNEXES

Annex A – Job Task Analysis Form

Annex B – HAZMAT Training Requirements

Annex C – PPE Requirements

Annex D – Hazardous Materials Reference Application (HMRA)

Annex E – Storage and Handling Requirements

Annex F – Field Exercise Inspection Checklist

Annex G – TDG Requirements

Annex H – WHMIS Requirements

ANNEX A – JOB TASK ANALYSIS FORM

I - JOB TASK ANALYSIS FORM			
JOB TITLE OR DESCRIPTION:			
DEPT:	LOCATION:		
NUMBER OF PERSONS DOING THIS JOB:			
SUPERVISOR:		DATE:	
PERSON PREPARING THIS JHA:			
DATE JHA PREPARED:			

II. TASKS OF THE JOB AND RESULTING EXPOSURE OR LIKELY EXPOSURE TO HAZARDOUS MATERIALS OR PHYSICAL AGENTS			
ITEM	**TASK**	**NAME OF MATERIAL OR PHYSICAL AGENT**	**LOCATION**
1.			
2.			
3.			
4.			

III. JOB INVENTORY OF HAZARDOUS (CHEMICAL) MATERIALS			
ITEM	**NAME OF CHEMICAL & PHYSICAL STATE**	**ROUTE OF ENTRY**	**CONTROLS**
1.			
2.			
3.			
4.			

IV - JOB INVENTORY OF BIO-HAZARDOUS INFECTIONS MATERIALS			
ITEM	**NAME OF MATERIAL**	**ROUTE OF ENTRY**	**CONTROLS**
1.			
2.			
3.			
4.			

V. JOB INVENTORY OF HAZARDOUS PHYSICAL AGENTS			
ITEM	**NAME OF AGENT**	**SOURCE OF EXPOSURE**	**CONTROLS**
1.			
2.			
3.			
4.			

ANNEX B - HAZMAT TRAINING REQUIREMENTS

Table 1: Training and Awareness Requirements

	Training	Required By	Coordinated By
1	Workplace-Specific WHMIS Training - Awareness briefings given annually on the relevant HAZMAT management programs by HAZMAT or General Safety staff. Content may vary according to individual base requirements.	All Personnel	Unit HAZMAT Coordinator (UHMC)
2	WHMIS 2015 Orientation – Orientation, Refresher, Job-Specific, Supervisor/management	All personnel (Required by law)	Defence Learning Network (DLN)
3	Unit HAZMAT Coordinator training (1.5 Day) Provided to UHMCs. The course provides the direction and information required to enable personnel appointed as UHMCs to perform their secondary duty.	UHMCs	Brigade Safety Officer or B HAZMAT O
4	Small Spill Response Course (1 Day) This course ensures personnel who handle HAZMAT have the knowledge required to respond to POL spills less than 20 L and support response to larger spills.	According to the requirements of individual positions	Brigade Safety Officer or B HAZMAT O
5	Large Spill Response Course (2 Day) This course is provided to ensure the unit has necessary knowledge to investigate, respond to and supervise the clean-up of all POL spills greater than 20 L.	Area support group unit team leaders	Brigade Safety Officer or B HAZMAT O
6	Hazardous Materials Reference Application (0.5 Day) Provided to UHMCs and personnel responsible for HAZMAT Management.	UHMC and Personnel Responsible for HAZMAT Storage within their unit sections	Brigade Safety Officer or B HAZMAT O
7	Transportation of Dangerous Goods Driver Course (1.5 day) Provided to all personnel who are responsible for transporting dangerous goods (HAZMAT). On completion of this training, personnel receive TDG certification.	Transportation Personnel transporting Dangerous Goods (HAZMAT) (required by law)	Transport
8	DND/CAF Trades training from the Canadian Forces School of Administration and Logistics (CFSAL) Control and Packaging of HAZMAT (course code: ALNG) (10 days)	(Aimed at specific military trades) Supply supervisors	CFLTC

	Training	Required By	Coordinated By
	Dangerous Goods (course code: AHUR) (15 days)	Personnel involved with preparing HAZMAT for transportation Persons offering dangerous goods for transport, drivers transporting dangerous goods, persons receiving dangerous goods	CFLTC
9	TDG Road Haz Waste Consignor Course (1 day)	Personnel offering for transport by road and signing hazardous waste manifests, on behalf of the Base Commander.	ADM(Mat) Tn via contract

Table 2: Recertification and Refresher Course Requirements

	Position	Requirement
1	Hazardous Materials Technician	Refresher course every 2 years. Maintain physical fitness and ability to wear PPE.
2	TDG Haz Waste Consignor	Re-certify every 3 years for road transport.
3	Control and Packaging of Hazardous Materials	Occupational Specialty Qualification ALNG and possession of a DND 4468 – Control and Packaging of Hazardous Materials Certificate. Re-certification testing every 2 years.
4	DND Military and Civilian personnel involved with shipping and receiving dangerous goods	Occupational Specialty Qualification 3K/G5 and possession of a DND Transportation of Dangerous Goods certificate (DND 911 (8-95) NSN 7530-21-911-4743). Re-certification requirement varies with employment and mode of transport.
5	Unit HAZMAT Coordinator (UHMC)	Re-take the course every 3 years.
6	Large spill response	Re-take the course every 3 years.
7	HAZMAT Reference Application (HMRA)	Re-take the course every 3 years.

ANNEX C – PPE REQUIREMENTS

1. General

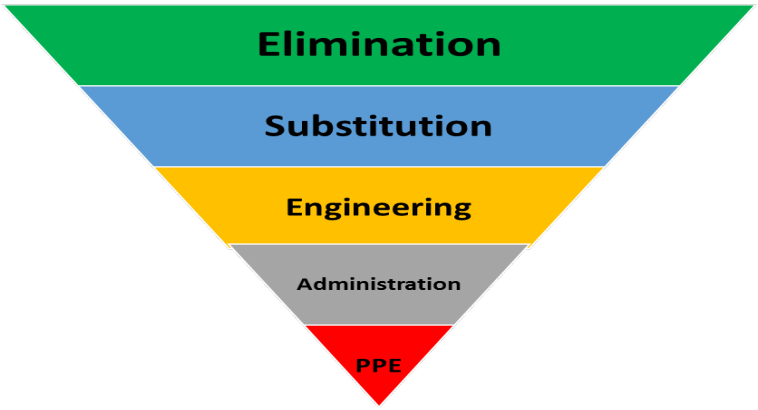
1.1 Hazardous materials have specific personal protective equipment (PPE) requirements to ensure that personnel handling the HAZMAT can perform their duties as safely as possible. It is essential that the CO of the unit ensures all their PPE is available to all potential users, at all times.

1.2 The CO of the unit must ensure that PPE:

a) Is designed to protect the user from the specific hazards of the job task;
b) is stored, maintained, inspected and tested by a qualified person so that it is in a safe and fully effective condition at all times;
c) is maintained in a clean and sanitary condition by a qualified person;
d) is used when needed;
e) training is provided to those who will use the PPE;
f) in cases of defective equipment that may render it unsafe for use, is marked or tagged as unsafe and removed from service;
g) in cases of defective equipment, is repaired by a qualified person to ensure that the equipment is in safe and fully effective condition, or permanently removed from service; and,
h) is managed in accordance with Ref P (C-02-040-009/AG-001).

1.3 There is no one piece of PPE that will protect you from all HAZMAT hazards. Therefore, selecting just any piece of PPE (suits, gloves, goggles, etc.) from the first available spill response kit for use does not guarantee that it will protect the user from the hazardous material hazard. Consulting the individual SDSs should be the first step in the PPE decision-making process.

1.4 PPE is only a temporary barrier between the user and the hazard. PPE when worn correctly will protect the user against the hazards for which it was intended. Engineering or administrative controls should always be utilized first, to eliminate or remove the worker from the hazard. The Hierarchy of Controls is a system used to eliminate or minimize exposure to hazards. The diagram illustrates controls in order of decreasing effectiveness.



2. Eye and Face Protection

2.1 Appropriate eye or face protection must be used when exposed to eye or face hazards such as from flying particles, molten metals, acids or caustic liquids, liquid chemicals, gases, vapours, or potentially injurious light radiation.

2.2 Eye and face protection should meet the following minimum requirements:

a) They should provide adequate protection against the particular hazard for which they are designed
b) They should be reasonably comfortable when worn under the designated conditions
c) They should fit snugly and must not unduly interfere with the movements of the wearer
d) They should be durable
e) They should be cable of being disinfected/easily cleaned
f) Protectors should be kept clean and in good repair

2.3 Persons whose vision requires the use of corrective lenses or glasses, and who are required to wear eye protection can wear goggles that are designed to be worn over corrective glasses without disturbing the adjustment of the glasses.

3. Foot Protection

3.1 Provides protection from impact and compression injuries and provides puncture protection. Some work situations may require protection from electrical hazards. Safety shoes should have solid leather upper as well as a chemical and slip resistant sole with a defined heel.

3.2 Safety shoes or boots with impact protection are required for carrying or handling heavy materials or where there is a hazard of heavy objects falling onto the feet. Such activities include those involving manual materials handling, ex. dolly, pallet trucks, etc.

4. Hand Protection

Gloves and other hand protection provides safety from exposure hazards such as skin absorption of harmful substances, severe cuts or lacerations, severe abrasions, punctures, chemical burns, and harmful temperature extremes. Selection must be based upon the specific activity and specific hazards present, conditions present and duration of use.

5. Selection of Personal Protection Equipment

5.1 Once the use of personal protective equipment has been determined, users must select the protective equipment which ensures a level of protection greater than the minimum required to protect employees. Consideration must be given to the following:

a) Proper fit for the user (required by legislation, for some PPE)
b) User awareness of the PPE limitations
c) Comfort
d) Training and certification (as required, for some PPE)

5.2 It is necessary to reassess the workplace hazard situation periodically by:

a) Identifying and evaluating new equipment and processes
b) Reviewing accident records
c) Re-evaluating the suitability of previously selected PPE

5.3 Selection of PPE is a very important step in employee safety; SDSs must be consulted, hazard assessments must be completed, manufacturer's product selection charts must be consulted, and knowledgeable personnel must make appropriate decisions based on information gathered. It is important to remember that no single combination of protective equipment and clothing can protect against all hazards.

ANNEX D – HAZARDOUS MATERIALS REFERENCE APPLICATION (HMRA)

Click here to login to HMRA: http://materiel.mil.ca/en/policy-library-tools-policy-procedure/hazmat.page

The HMRA acts as a library of HAZMAT information and site-specific holdings records for DND and requires user identification (Username) and a password.

Its objective is to provide up to date information for:

- HAZMAT Holdings
- Emergency Equipment Holdings
- Procurement Decisions
- Storage and Handling
- Ingredient Analysis
- Safety Data Sheets
- Spill Response
- Transportation
- Preferred Product Suggestions

HMRA is built on a web-based technology. Information can be added to or removed from one module without affecting any other modules. Modules are linked internally within the application and externally to other sites to provide expanded information.

Examples:

- Supplier Web sites
- Government sites
- Technical information

A Quick User's Guide to the HMRA

The HMRA Holdings/Inventory for each storage area must be updated at least every 6 months and posted on the locker or in the POL shed.

Steps to Create a New Room or Storage Area

1. Contact Unit HMRA OPI or Base HAZMAT Officer (Section HMRA OPI do not have authorization)
2. Click on HOLDINGS, STORAGE AREA INFO
3. Select a specific building number in the room storage areas information window
4. To create a room, ensure you are in the room tab and click on the add icon (green +) in the upper icon menu
5. Select a room name from the list of names icon (paper) and click on OK
6. Enter the floor number in the HMRA rooms and storage areas window and click on the save icon (yellow disk)
7. To create a storage area, click on a specific room name to highlight it
8. Click on the STORAGE AREA tab in the HMRA rooms and storage areas window
9. Click on the add icon (green +) in the upper icon menu
10. Enter data in all records with an asterisk and click on the save icon (yellow disk)
11. **Please note:** you can only delete rooms and storage areas after deleting all products

Steps to Add, Modify, or Delete Products

1. Click on HOLDINGS, MANAGE HOLDINGS
2. Fill out all records in the holdings information window and click on the green checkmark
3. Ensure that you are in the Products/Storage Areas tab in the HMRA holdings window

4. Click the add icon (green +) in the upper icon menu to add a new product
5. Click the update icon (pencil and paper) in the upper icon menu to modify a highlighted product
6. Click the delete icon (red x) in the upper icon menu to delete a new product

Steps to Add a Product

1. Follow the process to add a product
2. Click on the binoculars icon on the right side of the HMRA add holdings menu
3. Enter Manufacturer or Supplier information written on the product label into the corresponding records in the brand name filter window
4. Once you have matched the Manufacturer and Supplier information click on the green checkmark
5. Enter information from the product label into the records with an asterisk
6. Click the save icon (yellow disk)
7. Continue process until you have entered all products and then click on the close icon (green door)

Steps to Print a SDS

1. Follow the process to add a product but do not click on the add icon
2. Double click on the yellow highlighted HMRA ID for a specific product
3. Click on the Datasheets tab in the HMRA products window
4. Click on OPEN
5. Click on the print button in the new window

Steps to Print a Workplace Label

1. Follow the process to print a SDS but click on the WHMIS 2015 Label tab instead of the Datasheets tab
2. Click on the Print Label button
3. Click on the print button in the new window

Steps to Print a HAZMAT Inventory Summary Form

1. Click on REPORTS (main menu)
2. Click on HOLDINGS REPORT
3. Fill out records up to the Section record in the holdings report window
4. Click on the green checkmark
5. Click on the print button on the new window

Steps to Search for Environmentally Friendly or Preferred Products

1. Click on PRODUCTS, PRODUCTS
2. Enter the HMRA ID, Manufacturer, or Brand name into the Products Search Filter Window
3. Click on the green checkmark
4. Click on the Item Info tab
5. Double click on the highlighted commodity description
6. Click on the Assoc. Products tab
7. This is a list of preferred products according to commodity type; search for an effective replacement for prohibited or restricted products
8. **Please note:** there is not always a more environmentally friendly product available

ANNEX E – STORAGE AND HANDLING REQUIREMENTS

1. GENERAL

1.1 The individual Safety Data Sheets must be consulted to ensure that any exceptions to general rules are identified. In all cases, good judgment must be exercised, or qualified assistance obtained where doubt exists, as to the proper procedures to be followed.

1.2 Personnel engaged in the planning, supervision, warehousing, disposal, and handling of HAZMAT must be aware of the hazards involved and the safety precautions required to perform these operations with a minimum of risk.

1.3 Ideally, HAZMAT must be stored separate from other materiel. This may be accomplished by:

a) Utilizing separate HAZMAT storage buildings or compounds;
b) Utilizing separate storage compartments separated by fire walls and fire doors;
c) Separation by hazard classes with the appropriate fire safety distances and the installation of fixed automatic fire extinguishing systems in compartments or the entire building as required by the NFCC.

1.4 Some criteria to be taken into consideration regarding the safe storage of hazardous substances include:

a) Organics are to be separated from inorganic materials
b) Acids are to be separated from bases
c) Oxidizing agents are to be separated from reducing agents
d) Chemical compatibility must be considered and followed. Check Annex E Appendix 1 and the SDS.

1.5 Bulk stacking of HAZMAT is not permitted in DND.

1.6 Flammable substances (TDG Class 3 & 4), all compressed and liquefied gases (TDG Class 2) and many toxic substances (TDG Class 6.1) must not be stored in basements or below ground level in warehouses.

2. SITING FOR HAZMAT STORAGE

2.1 Many factors require consideration when siting, planning, or renovating hazardous material buildings, structures, or compounds. These include but are not limited to:

a) The site should not be located near sensitive land uses or water bodies.
b) The site slope gradients must be less than 10%.
c) Sites with high ground water tables or large open water bodies are not recommended.
d) Sites should have minimum risk from external hazards (ex. aircraft crash, vandalism, mud slides, storm surge, flooding, etc.).
e) Contaminated run off from rain, spills, firefighting, etc. must not be allowed to enter public sewers, water bodies, reservoirs, etc.
f) Sites must be quickly serviced by fire departments/emergency teams, ideally with a 5-minute response time.
g) Sites should be selected which do not require the transport of HAZMAT through densely populated areas or environmentally sensitive locations.

3. LABELLING

3.1 In shipping and storage, the TDG classification and labelling system is used. For issue to users and workplace use, the WHMIS classification and labelling system is used.

3.2 The immediate container must have a WHMIS label. Large containers, such as 205-litre drums, may also have a shipping label present. All shipping containers must have a TDG label.

4. FIRE PREVENTION AND EQUIPMENT

4.1 It is important to remove all sources of ignition from all HAZMAT storage areas and smoking must be strictly prohibited. Sparking footwear (ex. metal cleats), lighters, open flame lanterns and heaters or exposed electrical heating elements must also be prohibited.
4.2 Appropriate Personal Protective Equipment (PPE) must be available near all hazardous material storage areas for routine and emergency use.
4.3 Fire extinguishers meeting the NFCC Rating Standard must be kept and used by qualified personnel in HAZMAT areas.
4.4 Fixed automatic fire suppression systems (ex. sprinklers, CO_2, etc.) are required in the entire building if the total accumulated area of stored HAZMAT exceeds 100 square metres (1076 sq ft) to a maximum rack height of 6.1 m (20 feet), excluding main aisles but including access aisles within the individual storage areas. If the entire building is not protected by a fixed automatic fire suppression system and the total area (to 6.1 m rack height) exceeds 100 square metres (1076 sq ft) the HAZMAT storage area must be surrounded by a 2-hour fire separation.
4.5 Heat/smoke detector alarms are required for areas containing flammable, corrosive, oxidizing, compressed gases, toxic, or mixed items.

5. SPONTANEOUS COMBUSTION

5.1 Certain highly reactive substances react spontaneously on exposure to air, water, or other chemicals. These are extremely dangerous and must be stored in separate fire compartments, buildings, or outside fenced and secured compounds with the appropriate firefighting equipment, as directed in Ref F (NFCC 2020).

6. HEALTH

6.1 Worker eating facilities and rest areas must be remote from HAZMAT storage and work areas. Employee change rooms (with separate lockers for street and work clothes) and washrooms should not be located near the dangerous areas. Deluge showers and eyewash stations must be in the storage and work areas as appropriate. Ref P (C-02-040-009/AG-001 General Safety Program Vol. 2, General Safety Standards) Chapter 11 provides more details.

7. VENTILATION

7.1 Proper ventilation of HAZMAT storage areas is a necessity to prevent the accumulation of toxic, corrosive, or flammable/explosive gases in the workplace and dedicated storage areas. Personnel must exercise caution when entering HAZMAT storage areas after extended dormant periods such as holidays, weekends, or cold weather as the potential for dangerous gases and/or fumes to accumulate is increased. Always ventilate before entering these scenarios.

8. DRAINAGE CONTAINMENT SYSTEMS

8.1 HAZMAT and their wastes must never be discarded through the municipal or private sewer systems. Areas which contain HAZMAT must have self-containment or a system leading to an external sump or tank for periodic testing, pumping, and disposal. Open floor drains in the surrounding area are not to be connected to storm or sanitary systems.
8.2 Extensive planning and engineering must be considered prior to the selection and use of an area for the storage of HAZMAT or hazardous wastes.

9. CLEARANCES AND AISLES

9.1 Storage buildings must have fire access routes to at least 2 faces of the building.
9.2 At least one aisle of 2.4 m minimum width running the entire length of the building (longest dimension) is required for storage heights up to 6.1 m.
9.3 Each hazardous commodity or group of compatible commodities is allocated a maximum quantity which may be stored in each ISA. These ISAs must be separated by an aisle not less than 2.4 m on all sides except that fire walls together with the required wall clearance may take the place of aisles.
9.4 Where racking does not run along a wall, the end of a row of racks must be a minimum of 400 mm (16 inches) away from the end wall to provide a clear emergency escape route.
9.5 Where sprinklers must be used, excluding water activated storage areas where an alternate fire suppression system must be used, sprinkler heads must be at least 450 mm above the top of piled or racked stock.

10. **VERTICAL CLEARANCE FOR RACKED STORAGE**

10.1 In unsprinklered buildings, at least 1 m distance is required between the top of storage and the ceiling.
10.2 **HAZMAT must not be stacked taller than 1.83 m (6 ft)**. For heights greater than this limit, pallet racking must be used. The maximum height of racking permitted for HAZMAT is 6.1 m (20 ft). Encapsulated loads must not exceed 3.6 m (12 ft) high.
10.3 Heating units must be at least 1 m above piled or racked stock and be approved for use in hazardous locations.
10.4 When using racking or shelving, all HAZMAT must be stored a minimum of 100 mm (4 inches) above the floor. This action prevents damage to packaging due to moisture and enables responsible personnel to detect leaks easier by looking under the storage aids for pools of liquid or chemical dust. In the case of racking, the use of pallets on the lowest load beam setting is acceptable. Pallets on the floor are not recommended since wood readily absorbs water or hazardous liquids.
10.5 For water activated/sensitive HAZMAT, the minimum height above the floor is 150 mm (6 inches). This height may be increased in areas subject to flooding if required.

11. **PHYSICAL SEPARATION**

11.1 To maintain a safe workplace, incompatible items, particularly in storage or process areas, must remain physically separated to prevent dangerous chemical reactions. Annex E, Appendix 1 displays the general rules required to ensure compatibility. It must be stressed, however, that individual SDSs must be consulted to become aware of peculiar problems or unique characteristics not covered by general rules.
11.2 Certain incompatible items must not be stored together. Some groups require that a separate fire compartment (2-hr rated wall) be maintained. (Marked with "X" for "Not Compatible" on the chart).
11.3 Some less dangerous, incompatible items require that a minimum of 1.0 m horizontal distance be maintained between incompatible groups in storage or awaiting transit (Marked with "1m" for "Separate by 1 m horizontal distance" on the chart).
11.4 Some less dangerous, incompatible items require that a minimum of 1.0 m horizontal distance be maintained between incompatible groups in storage or awaiting transit and, although generally, the items require only the 1.0 m separation, specific reference to the individual SDS must be made to catch the exceptions (Marked on the chart with "SDS" for "refer to Safety Data Sheet").
11.5 Compatible groups that may be stored together without presenting a known hazard are marked on the chart with "C" for "Compatible".

11.6 Incompatible items must not be stored vertically above or below each other regardless of the distance between items. A leak or rupture could easily result in an accidental contact because of gravity.

11.7 When storing highly reactive substances which react with air, water, or other chemicals, a sprinkler system or an alternate fixed automatic fire suppression system (ex. CO_2, dry chemical, etc. for water activated items) must be installed. A separate fire compartment with a 2-hour fire rating is required to store these items.

12. SMALL QUANTITY EXEMPTIONS

12.1 Appendix 11 of this Annex, the Small Quantity Exemption Chart, details quantities of HAZMAT, which may be stored in a building without construction of HAZMAT storage rooms, fire separations, or automatic fire extinguishing systems. Storage of items meeting these quantity limits should be undertaken in metal storage cabinets, segregated areas, or other such means in relation to their chemical characteristics to make them safe.

13. SECURITY

13.1 It is imperative to prevent unauthorized persons or intruders from entering hazardous storage areas. In addition, untrained and unaware personnel may be subjected to unnecessary risk or perform activities which could result in a serious accident if allowed to wander uncontrolled in hazardous material storage or processing areas.

13.2 In the military context, hazardous material storage areas represent a suitable target for sabotage which could destroy major facilities with little expenditure of effort if the areas are not reasonably secure.

13.3 Access control and warning signs should clearly state:

a) That the area contains HAZMAT (ex. toxic, flammable, corrosives, etc.);
b) That access is limited to authorized personnel only, for safety reasons;
c) Emergency information (phone numbers, personnel responsible, etc.); and
d) The location of emergency equipment (spill kits, telephones, first aid kits, PPE, etc.).

13.4 Fences, external lighting, alarms, signs, and/or guard points must be used to enforce security of hazardous material areas. The storage areas must be locked or otherwise secured.

13.5 Where public access is required to DND buildings and facilities, routes should be designed to prevent the public from passing through dangerous areas.

14. GENERAL HANDLING

14.1 HAZMAT requires special handling including the use of Personal Protective Equipment (PPE) to prevent damage to stock and injury to personnel, specifically:

a) Packages and containers must be handled and stacked with extreme care to prevent rupture, breakage, or accidental spillage of the contents. HAZMAT must not be stacked higher that 1.83 m (6 ft) unless racked, and racking must not be higher than 6.1 m (20 ft);
b) Upon receipt, all packages and containers require a detailed inspection for correct container type, condition of the container, and proper markings and labelling before being placed in storage; and
c) Daily inspections by supervisory personnel of HAZMAT storage areas, packaging, receipt, issue, and quarantine areas are required to prevent leaks, spills, or other dangerous situations from exposing unprotected personnel to unnecessary risks and to ensure prompt correction of dangerous conditions which could result in severe loss or damage to DND material and facilities.

15. DECANTING

15.1 When decanting consumable materials from bulk to workplace use containers, the following procedures must be observed:

a) Decanting must be done in a designated and controlled area only;
b) Within the CAF/DND workplace, users must follow the precautions required for safe handling as described in the SDS or on the suppliers label;
c) Specific precautions will be listed in the SDS for the material;
d) PPE and officially approved handling methods must be used, especially if the material being decanted poses risk to the user;
e) Once materials are decanted into the appropriate container, the newly filled (or refilled) container should immediately be labelled detailing contents, use, personal risk, precautions for handling and use, and date and time of filling. The containers must be clearly marked with a workplace label identifying what it is, and what safety precautions are required. For a workplace WHMIS label details, see Annex H Appendix 6;
f) When decanting flammable liquids, it is extremely important to consult the SDS;
g) If the transfer of liquids is performed indoors, it must be within a fire resisting enclosure or cabinet. It is essential that enclosures in which decanting is performed are well ventilated to both safeguard personnel from inhalation of vapours and to dilute the concentration of flammable vapours to an acceptable level. Ex. below the vapours' Lower Explosive Limit (LEL); and
h) The movement of liquids during pouring, emptying, or pumping can cause electrostatic build up and discharge of this static electricity can ignite flammable vapours. Before transferring flammable liquids, all containers and conductive items (ex. drums, pumps, and cans) must be bonded to each other with a metal wire ensuring metal to metal contact of wire clamp and container and grounded to protect against electrostatic build up. Grounding the containers provides a path along which electrostatic charge will travel and dissipate. Grounding cables are available with alligator clips, which can easily be attached to drum rims or safety can handles. Operators should wear anti-static footwear and flammable liquids should be dispensed in a slow, controlled manner.

16. **TRAINING**

16.1 All DND personnel required to package and maintain HAZMAT in storage must be trained in this specialty and qualified where appropriate by formal course, on the job training, or be directly supervised by a "trained person".

17. **LABELS AND SIGNS**

17.1 Correct labelling and segregation are vitally important as the level of protection afforded by packaging during shipment is often absent under storage conditions. Correct labelling readily identifies stock destined for segregated HAZMAT storage areas and prevents it from being erroneously located in general storage areas.

18. **PLACARDS**

18.1 To identify the presence of HAZMAT in buildings, warning signs in the form of the placards listed in the Transportation of Dangerous Goods Regulations (TDGR) will be used, as specified in Ref F (NFCC 2020) and Chapter 7 Section 7 of the Hazardous Materials Safety and Management Manual. These placards may be placed in holders similar to those used on vehicles and are to be located at the main entrances to the building and/or all hazardous storage locations.

18.2 Placards must also be placed on the main aisle ends of all racks containing hazardous material. If the row contains more than one hazard class, each ISA in the row must also be placarded separately.

19. **SPILL KITS**

19.1 Each unit has a unique composition of HAZMAT and therefore the spill kit requirements for each unit will be different. Specific HAZMAT such as corrosives (acids and bases), oil, or mercury will require their own unique spill kits. Furthermore, varying sizes of spill kits and materials will be required based on the volume of HAZMAT stored within the unit.

19.2 A general purpose spill kit will contain a mixture of universal and oil-only absorbent pads, universal and oil-only absorbent “socks”, shoe covers, sorbents, “pillows”, disposal bags and ties, nitrile gloves, goggles, and instructions. Be sure to ensure that the proper spill kit is in use by your unit (general purpose, POL, or corrosive/HAZMAT).

ANNEX E – APPENDIX 1 – TDG COMPATIBILITY CHART

National Defence / Défense nationale

Hazardous Material Compatibility Chart

Based on NFCC (2015) and the Transport of Dangerous Goods Regulations (TDGR) classification this chart provides a guide for segregating hazmat in storage facilities and workshops.

Charte de compatibilité des matières dangereuses

Basée sur le CNPI (2015) et sur la classification du Règlement sur le Transport des Marchandises Dangereuses (RTMD). Cette charte est un guide pour la ségrégation des matières dangereuses dans les installations d'entreposage et dans les ateliers.

RTMD TDGR	2.1	2.2	2.2 (5.1)	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	8 acid(s)	8 base
2.1	=												
2.2	C	=											
2.2 (5.1)	X	C	=										
2.3	X	C	1m	=									
3	C	C	X	X	=								
4.1	C	C	X	1m	C	=							
4.2	1m	C	X	1m	1m	1m	=						
4.3	SDS FDS	C	X	SDS FDS	1m	SDS FDS	SDS FDS	=					
5.1	X	C	C	1m	X	X	X	X	=				
5.2	X	C	X	X	X	X	X	X	X	=			
6.1	X	C	SDS FDS	SDS FDS	SDS FDS	SDS FDS	SDS FDS	SDS FDS	1m	X	=		
8 acid(s)	X	C	X	1m	1m	1m	1m	X	X	X	1m	=	
8 base	X	C	1m	1m	1m	1m	1m	X	1m	1m	1m	1m	=

Legend

C	=	**Compatible** - may store together
SDS/FDS	=	**Safety Data Sheet** - refer to Safety Data Sheet
1m	=	**Incompatible** - separate by minimum 1 m horizontal distance (Article 3.2.7.6.)
X	=	**Incompatible** - do not store together in same fire compartment. Separate by minimum of 3 m when in an outdoor storage area. (Article 3.3.4.3.)

Note : For safety purposes, store separately gases and flammable liquids (Class 2 and Class 3)

Prioritization sequence
If a product is classified TDG and WHMIS, use TDG classification first

If two products are classified WHMIS without TDG classifiction, use WHMIS classification. Consult products SDS's or seek for qualifed personnel assistance

Acids are corrosive products with a pH under 2

Bases are corrosive products with a pH over 11.5

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2CDSG Hazmat Section
Version 06-2018

Légende

C	=	**Compatibles** - peuvent être entreposés ensemble
SDS/FDS	=	**Fiche de données de sécurité** - voir la fiche de données de sécurité
1m	=	**Incompatibles** - séparer par un minimum d'un mètre de distance horizontale (Article 3.2.7.6.)
X	=	**Incompatibles** - ne pas entreposer ensemble dans le même compartiment à l'épreuve du feu. Séparer par une distance minimum de 3 m lorsqu'entreposé à l'extérieur (Article 3.3.4.3.).

Note : Pour une question de sécurité entreposer séparément les gazs et les liquides inflammables (Classe 2 et Classe 3)

Ordre de priorité de la classification
Si un produit est classifié TMD et SIMDUT, la classification TMD a préséance

Si deux produits sont classifiés SIMDUT sans classification TMD, la classification SIMDUT a préséance. Consultez les FDS ou demandez assistance auprès de personnel qualifié

Les acides sont des produits corrosifs de pH inférieur à 2

Les bases sont des produits corrosifs de pH supérieur à 11.5

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Section Matières Dangereuses GS 2e Div CA
Version 2018-06

Canada

Note:

Acids have a pH less than 7, whereas strong acids have a pH less than 2.

Bases have a pH greater than 7, whereas strong bases have a pH greater than 11.5.

ANNEX E – APPENDIX 2 – GASES (TDG CLASS 2)

TDG CLASS 2	GASES STORAGE	WHMIS
	**EXAMPLES:** NITROGEN PROPANE, BUTANE, ACETYLENE, HYDROGEN SULPHUR DIOXIDE ANHYDROUS AMMONIA OXYGEN, CHLORINE	
HAZMAT STORAGE The SDS for the material must be checked before handling & storing.	In addition to the General Storage Requirements contained in Annex E, the following additional requirements apply to the storage of compressed gas. • All storage sites must be accessible from at least two sides for firefighting purposes. • Cylinders of acetylene, oxygen, and nitrogen must be stored upright. • Containers of compressed gas must be **supported by a raised floor/platform made of non-combustible material**. • Outdoor storage areas must be protected from the weather by a non-combustible canopy. • Outdoor storage areas must be within a fenced enclosure. The fence must be designed to discourage climbing, be a minimum height of 1.83 metres (6 feet) and have a lockable gate. • Outdoor sites used for compressed gases which are flammable, toxic, or corrosive must not be located within 15 metres (50 feet) of any building openings, ex. doors, windows, vents. • Storage and handling procedures that are required for full cylinders must be extended to empty cylinders.	

	• Empty compressed gas cylinders must be kept separate from full cylinders and marked to prevent confusion. Full and empty cylinders must never be stored together in the same pallet or rack. • Full or empty cylinders/containers must be stored on racks, or other acceptable means designed to hold them secure, or, if loose, encircled by a chain/cable which is securely anchored so that no cylinder can fall or be knocked over. • Containers must have an integral collar or a screw cap to prevent against valve damage. • A minimum of a 1 metre separation distance must be maintained between incompatible gases. • Propane must not be stored inside any DND building, except for limited quantities of 1-pound cylinders, maximum of 20. • **Compressed gas cylinders must:** a) not be lifted by cranes or mechanical lifts unless fastened in proper containers, racks, or cradles; b) not be lifted by rope, chains, or electromagnets; c) not be used as rollers, supports, or any other purpose other than containing compressed gas; d) not be lifted by the valves or valve protector caps; e) not be allowed to drop or be permitted to strike violently against each other or against other objects; f) not be dragged or slid; and g) not be handled with oily hands or gloves. • **Compressed gas containers must:** a) have the valves closed at all times even if the container is considered to be empty; b) be moved using suitable material handling equipment; c) only be thawed at room temperature when containers of compressed gases have been frozen, covered with ice or snow. Do not use any means to try to hasten the thawing; d) when leaking, be removed to an outdoor location. Notify the Base Fire Hall. If gas is flammable or toxic, isolate the area and erect signs to indicate the presence of toxic or flammable gas; e) not be vented except by personnel qualified to do so and then only in accordance with manufacturer's directions; and f) never be stored where the ambient temperature exceeds 52 ºC (125 ºF). **Flammable Gas** • Must be stored on an exterior wall of the building • Must not be stored near fuel-fired equipment or heating elements **Toxic or Corrosive Gases** • Must be located on an exterior wall • Storage areas must not contain any flammable or combustible materials **Anhydrous Ammonia**

	• Uses UN1005 placard • Placard has a white background similar to the toxic gas placard. • Must be handled similarly to toxic gas **Oxygen and Oxidizing Gases** • Must never be stored in the same room or storage area with flammable gases or other flammable materials unless the storage areas are separated by a fire-resistant partition. • Cylinders containing oxygen or oxidizing gas must be stored upright. • Extreme care must be exercised to ensure that no oil or grease encounters an oxygen or oxidizing gas container. Attention should be paid to any oil or grease which might have leaked onto the floor from mechanical handling aids.

ANNEX E – APPENDIX 3 – FLAMMABLE LIQUIDS (TDG CLASS 3)

TDG CLASS 3	FLAMMABLE LIQUIDS	WHMIS
	**EXAMPLES:** MOTOR OIL, DIESEL, KEROSENE, GAS, NAPHTHA, AVIATION FUEL, VARSOL, ETHERS, ISOPROPANOL, HYDRAULIC OIL, BRAKE FLUID, LINSEED OIL, PAINT, ETC.	

HAZMAT STORAGE The SDS for the material must be checked before handling & storing.	In addition to the General Storage Requirements contained in Annex E, the following additional requirements apply to the storage of flammable liquids. GENERAL • Storage facilities and quantities must be approved by the Chief of Fire Services. • Plastic containers, such as jerry cans, approved for outdoor storage and use of flammable liquids will not be used for storage within buildings. • A maximum of 500 L of HAZMAT may be stored in a single HAZMAT cabinet. A maximum of 1500 L of HAZMAT in three or more cabinets may be stored in one fire compartment. • All yellow flammable HAZMAT cabinets must be labelled in conspicuous letters to indicate that the cabinet contains flammable material and that open flames must be kept away. • POL products will be stored in a manner allowing for first-in, first-out issue. • Products such as lubricating oils and greases usually stored in drums, cans, or pails should be stored on containment pallets. • Empty containers that are new or reconditioned should be stored indoors if possible, to avoid filling with rain water. • Racking or piles are to be arranged to provide aisles of at least 1 m in width. • Containers, including 205-litre drums, will be stored upright as they support weight best in this manner and prevents spillage. • All shipping containers containing flammable POL products must be labelled with a TDG Class 3 Flammable Liquids placard and, in addition, any secondary hazard placards and/or other labels required. • Packed material must be labelled with orientation labels. • All packages containing POL materials must be labelled with the appropriate supplier's WHMIS labels. • The storage of combustible material, except for required packaging and dunnage, is prohibited within the same ISA as flammable and combustible liquids. • If two or more flammable liquids belonging to different classes are stored in the same ISA, then they are to be stored up to the maximum quantities allowed for the class with the lowest flash point (ex. if one is NFCC Commodity Class IB and one is Class II, then the quantities for Class IB are to be used). • Decanting operations or transferring from a container to a different container must be done in a designated and controlled area only.

	• Smoking, open flames or the use of spark producing devices is prohibited when handling flammable and combustible liquids. **OUTSIDE POL SHEDS** POL Sheds must: - be non-combustible - not be more than one storey in height; - not be greater than 100 m² in floor area; - be designed to prevent spills or leakage from storage containers from entering the environment; - be designed to prevent the accumulation of a spilled or leaked flammable/combustible liquid from coming in contact with the containers stored in the POL Shed; -not contain absorbent material in the secondary containment; - provide for visual inspection of the floor of the POL Shed for leaks; - be designed to prevent unauthorized entry; - provide for ventilation, to prevent the accumulation of flammable vapours: at least one air inlet vent is required no higher than 300 mm from the floor and at least one air outlet vent is required on the opposite wall, no lower than 300 mm from the ceiling. - be located in a clear, open area not less than 15 m from any adjacent building, property line or smoking area, or as otherwise permitted by the authorities having jurisdiction; - be installed on a level, compacted surface resistant to erosion and frost heaving; - be located in an area accessible to the Fire Department all year; - be labelled with a TDG Class 3 placard and/or the appropriate placard; - not be located closer than 6 m to parked vehicles; and - not be used to store equipment;

Equivalency Comparison of TDG and WHMIS classification to the NFCC flammable and combustible commodity classes

	NFCC			TDG/ICAO/IATA				WHMIS	
Definitions	Commodity Class	Flash Point	Boiling Point	Hazard Class	Packing Group	Flash Point	Boiling Point	Flammable Liquids Hazard Class	Flash Point
Flammable Liquids	IA	<22.8C	<37.8C	3	I	___	<35C		<37.8C
Flammable Liquids	IB	<22.8C	37.8C	3	II	<23C	35C		<37.8C
Flammable Liquids	IC	22.8 - <37.8C	___	3	III	23 - <61C	35C		<37.8C
Combustible Liquids	II	37.8 - <60C	___	3	III	23 - <61C	35C		37.8 - <93.3C
Combustible Liquids	IIIA	60- <93.3C	___	Not Applicable					37.8 – 93.3C

ANNEX E – APPENDIX 4 – FLAMMABLE SOLIDS (TDG CLASS 4)

<table>
<tr>
<td>TDG CLASS 4

 

 

  </td>
<td>FLAMMABLE SOLIDS, SPONTANEOUSLY COMBUSTIBLE SUBSTANCES AND WATER-REACTIVE SUBSTANCES

<u>FLAMMABLE SOLIDS EXAMPLES:</u>

HEAT TABS, HEAT PACKS, MATCHES, JELLIED METHANOL

<u>SPONTANEOUSLY COMBUSTIBLE EXAMPLES:</u>

OILY RAGS, CHARCOAL, SODIUM SULPHIDE, PHOSPHORUS

<u>WATER-REACTIVE EXAMPLES:</u>

ALUMINUM OR MAGNESIUM POWDER
METAL SHAVINGS,
LITHIUM,
SODIUM</td>
<td>WHMIS

 

 

  </td>
</tr>
<tr>
<td>HAZMAT STORAGE

The SDS for the material must be checked before handling & storing.

  </td>
<td colspan="2">In addition to the General Storage Requirements contained in Annex E, Flammable Solids must not be stored with other combustibles, Oxidizing substances (Class 5.1), Organic Peroxides (Class 5.2) or Acids (Class 8).

FLAMMABLE SOLIDS (CLASS 4.1)
• Examples of typical Flammable Solids are:
a) Matches and Igniters; and
b) Solid Fuel (ex. Heat Tabs (Hexamine) or Jellied Fuel).
• Flammable Solids are solids that:
a) are easily ignitable and will rapidly burn;
b) will cause or contribute to fire from friction or from heat retained from manufacturing or processing; or
c) are self-reactive.

• Matches. Matches must be stored in separate ISAs, to a maximum of 100 kg of Safety Matches or 10 kg of "Strike Anywhere" matches per ISA. If the matches are stored in piles, they must be less than 3 m high and have a volume of 40 m³ or less per ISA.
• All shipping containers containing flammable solids must be labelled with the TDG Class 4.1 Flammable Solids placard and, in addition, any secondary hazard placards, and/or other labels required.
• All packages containing flammable solids must be labelled with the appropriate supplier’s WHMIS labels.</td>
</tr>
</table>

SPONTANEOUSLY COMBUSTIBLE SUBSTANCES (CLASS 4.2)

- Spontaneously combustible substances are substances that are liable to spontaneous combustion or are liable to heat on contact with air to the point of ignition.
- Examples of typical spontaneously combustible substances are:
  a) Oily rags;
  b) Charcoal;
  c) Sodium sulphide; and
  d) Phosphorus.
- Materials such as sodium sulphide or phosphorous must be kept dry and sealed in containers. NOTE: DO NOT open containers containing these materials as they will react with air and burn.
- Materials such as technical carbon or sodium sulphide are incompatible with itself. Therefore, each package must be separated by at least 1.2 m (48 in).
- All shipping containers containing spontaneously combustible substances must be labelled with the TDG Class 4.2 Spontaneously Combustible Substances placard and, in addition, any secondary hazard placards and/or other labels required.
- All packages containing spontaneously combustible substances must be labelled with the appropriate supplier's WHMIS labels.

WATER-REACTIVE SUBSTANCES (CLASS 4.3)

- Water-reactive substances are substances that, on contact with water or water vapour, emit flammable gases.
- Examples of water-reactive substances are:
  a) Lithium;
  b) Sodium; and
  c) Zinc.
- These materials will react with moisture in the air to form hydrogen gas. It is imperative to keep containers tightly sealed until ready to use and/or keep under an appropriate oil.
- All flames and sources of ignition must be eliminated when handling these materials.
- All shipping containers containing water-reactive substances must be labelled with the TDG Class 4.3 Water-Reactive Substances placard and, in addition, any secondary hazard placards and/or other labels required.
- Material packed in oil must be labelled with packaging orientation labels.
- All packages containing water-reactive substances must be labelled with the appropriate supplier's WHMIS labels.

ANNEX E – APPENDIX 5 – OXIDIZING SUBSTANCES AND ORGANIC PEROXIDES (TDG CLASS 5)

<table>
<tr>
<td>TDG CLASS 5

 

 
</td>
<td>OXIDIZING SUBSTANCES AND ORGANIC PEROXIDES

<u>OXIDIZING SUBSTANCE EXAMPLES:</u>

JAVEX BLEACH FOR THE UNBLEACHABLES, BARIUM NITRATE, AMMONIUM NITRATE, HIGH DRY CHLORINE GRANULAR, HYDROGEN PEROXIDE

<u>ORGANIC PEROXIDE EXAMPLES:</u>

DIBENZOYL PEROXIDE, METHYL ETHYL KETONE PEROXIDE</td>
<td>WHMIS

 

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</tr>
<tr>
<td>HAZMAT STORAGE

The SDS for the material must be checked before handling & storing.

 
</td>
<td colspan="2">OXIDIZING SUBSTANCES (CLASS 5.1)

In addition to the General Storage Guidelines set out in Annex E, the following additional requirements apply to the storage of oxidizing substances.

• Oxidizing substances must not be placed:
a) in contact with heating units;
b) in contact with heating or steam pipes;
c) in contact with heating ducts; or
d) in such a way that they could be heated to within 14°C of their decomposition temperature or to 49°C, whichever is the lower.

• Oxidizing substances must be stored avoiding contact with combustible materials, excluding required packaging, pallets, or dunnage.
• Oxidizing substances are to be stored only in cut-off or detached storage areas. Storage in segregated storage areas is not permitted. No storage areas are to contain basements or crawl spaces.
• Each storage area must contain an automatic sprinkler system and at least one fire hose with a spray nozzle and a fire extinguisher of at least a Class A rating. Multipurpose dry chemical (Class A-B-C) and Halon fire extinguishers must not be used in oxidizing substance storage areas. Only water-type extinguishers may be used on oxidizing substances.
• Within the storage area, each ISA containing oxidizing substances must not exceed 6 m wide by 4.5 m high.
• All shipping containers containing oxidizing substances must display the TDG Class 5.1 oxidizing substances placard and in addition, any secondary hazard placard or liquid orientation labels required.</td>
</tr>
</table>

- All packages containing oxidizing substances or organic peroxides must have the appropriate supplier's WHMIS labels.

ORGANIC PEROXIDES (CLASS 5.2)

In addition to the General Storage Guidelines of Annex E, the following additional requirements apply to the storage of organic peroxides.

- Open containers of organic peroxides or bulk storage in bins or piles is not permitted.
- Hydrogen peroxide stored in drums or pails must not be stored on wooden pallets.
- Organic peroxides are to be stored only in cut-off or detached storage areas. Storage in segregated storage areas in not permitted. No storage areas are to contain basements or crawl spaces.
- All storage areas are to be maintained at a constant moderate temperature. Any cooling system used must not use the direct expansion of a flammable gas. Containers of organic peroxides must not be placed in contact with any heating coils, air diffuser, radiators, cooling coils, pipes, or ducts.
- If organic peroxides that have a secondary hazard of flammable liquid, or which evolve a flammable gas if heated to 38°C, are stored in an area, that area must have mechanical ventilation with suction pick-ups at floor level. All storage areas must have explosion vents of at least 1 m^2 in area for every 9 m^3 of storage volume and vents or louvers to remove decomposition gases of at least 1 m^2 in area for every 100 m^2 of storage area. The area must have explosion-proof lighting and electrical connections.
- All areas that contain organic peroxides must have a sprinkler system. Combustible materials must not be stored in organic peroxide storage areas. Cutting or welding must not be conducted unless all organic peroxides are removed.
- Organic peroxides must not be stored with any explosive materials.
- A space of at least 0.6 m must be maintained between a rack of organic peroxides and a non-insulated metal wall. Each ISA in the storage area must not exceed 6 m in width. Bulk stacked or piled organic peroxides must not exceed 1.5 m in height.
- Packaging of organic peroxides must not be opened or dispensed within the storage area.
- All shipping containers containing organic peroxides must display the TDG Class 5.2 Organic Peroxides placard and, in addition, any secondary hazard placards or liquid orientation labels required. All containers containing organic peroxides that require temperature control must have the "Storage Temperature Range" marked on the container.
- All packages containing organic peroxides must have the appropriate supplier’s WHMIS labels.

ANNEX E – APPENDIX 6 – TOXIC SUBSTANCES AND INFECTIOUS SUBSTANCES (TDG CLASS 6)

<table>
<tr>
<td>TDG CLASS 6

 
</td>
<td>TOXIC SUBSTANCES AND INFECTIOUS SUBSTANCES

<u>TOXIC SUBSTANCE EXAMPLES:</u>

ANTIFREEZE,
PESTICIDES,
ADHESIVE
PAINT REMOVER,
PEPPER SPRAY
RELEASE AGENT

<u>INFECTIOUS SUBSTANCE EXAMPLES:</u>

RABIES VIRUS USED IN DISEASE RESEARCH,
MYCOBACTERIUM TUBERCULOSIS BACTERIA</td>
<td>WHMIS

  </td>
</tr>
<tr>
<td>HAZMAT STORAGE

The SDS for the material must be checked before handling & storing.

 
</td>
<td colspan="2">TOXIC SUBSTANCES (CLASS 6.1)

In addition to the General Storage Requirements contained in Annex E, the following additional requirements apply to the storage of toxic substances and infectious substances.

• Toxic substances have an inherent capacity to produce personal injury and/or death through ingestion (oral toxicity), inhalation (inhalation toxicity) and/or absorption through the skin (dermal toxicity).
• All toxic substances must be stored separately from rations or other foodstuffs by a wall or other physical barrier.
• If the toxic substance is packaged in containers that are liable to be damaged from moisture (such as paper bags), they are to be stored off the ground.
• Pesticides that are also flammable or oxidizing are to be stored in accordance with these hazards. Pesticides are not to be stored with ammonium nitrate fertilizer.
• Containers must remain closed when not in use. If it becomes necessary to open the container, personnel must wear eye protection, respirator, cap, gloves, boots, and coveralls, as required.
• Shipping containers containing toxic substances must be labelled with the TDG Class 6.1 Toxic Substances placard.

• Packages containing toxic substances must display the appropriate supplier's WHMIS labels.

INFECTIOUS SUBSTANCES (CLASS 6.2)
PMed area of responsibility.</td>
</tr>
</table>

	Infectious substances are organisms or their toxins that are infectious to human or animal health, such as medical waste, tissue samples, blood samples, or laboratory specimens, such as cultures. All infectious substances must be stored separately from rations or other foodstuffs by a wall or other physical barrier. Only authorized personnel should handle infectious substances. In order to handle infectious substances, appropriate PPE must be used. Shipping containers containing infectious substances must be labelled with the TDG Class 6.2 Infectious Substances placard. • Packages containing infectious substances must display the appropriate supplier's WHMIS labels.

ANNEX E – APPENDIX 7 – CORROSIVES (TDG CLASS 8)

<table>
<tr><th>TDG CLASS 8

  </th><th>CORROSIVES

<u>EXAMPLES:</u>

BATTERY ACID,
CLEANING PRODUCTS,
OVEN & GRILL CLEANER,
ETCHING GEL,
SULPHURIC ACID,
SODIUM HYDROXIDE</th><th>WHMIS

  </th></tr>
<tr><td>HAZMAT STORAGE

The SDS for the material must be checked before handling & storing.

  </td><td colspan="2">In addition to the General Storage Requirements contained in Annex E, the following additional requirements apply to the storage of corrosives.

• Corrosives are defined as acids or alkaline caustic materials that:
a. on contact with living tissue, will cause severe damage by chemical action;
b. in case of leakage, will damage or destroy other materials by chemical action;
c. on contact with organic matter or certain other chemicals, is liable to cause fires.
• The material must be stored on steel shelving with wooden shelves or racking. The steel components should be painted or treated to resist corrosion. A blue corrosive chemical storage cabinet is designed to store acids or bases, but not both acids and bases in the same cabinet.
• The storage facility must be kept at a cool temperature (0 °C to 30 °C), without sudden temperature changes.
• Store acidic material separate from basic (alkali, caustic) materials. Store in separate storage cabinets or by providing sufficient distance so that materials cannot mix in case of leaks.
• Acids have a pH less than 7. Bases have a pH greater than 7. Even though they are both classified as TDG Class 8 Corrosives, they are incompatible with each other.
• Protective gloves, an apron and a face mask must be worn when handling corrosives.
• The storage facility must have a deluge shower and eye wash station with an automatic alarm activated on the use of the shower.
• All shipping containers containing corrosive substances must display a TDG Class 8 Corrosives placard and, in addition, any secondary hazard placards, liquid orientation labels and/or any other labels required.
• Packages containing corrosives must display the appropriate supplier WHMIS labels.
• Emergency acid/alkaline spill kits are required.
• Acids should be kept off metal shelving when stored.</td></tr>
</table>

ANNEX E – APPENDIX 8 – MISCELLANEOUS PRODUCTS, SUBSTANCES OR ORGANISMS (TDG CLASS 9)

<table>
<tr><th>TDG CLASS 9

 
</th><th>MISCELLANEOUS PRODUCTS, SUBSTANCES OR ORGANISMS

<u>EXAMPLES:</u>

POLYCHLORINATED BIPHENYLS (PCB), ASBESTOS, LITHIUM BATTERIES, SOLID CARBON DIOXIDE (DRY ICE), SELF-INFLATING LIFE-SAVING DEVICES, INTERNAL COMBUSTION ENGINES (FOR TRANSPORT ONLY); AND SUBSTANCES THAT HAVE ANAESTHETIC, NOXIOUS OR OTHER SIMILAR PROPERTIES THAT CAUSE EXTREME ANNOYANCE OR DISCOMFORT TO PERSONNEL (EX. COPPER SULPHATE, SODIUM PHOSPHATE OR POTASSIUM CHROMATE).</th><th>WHMIS

NO EQUIVALENT WHMIS SYMBOL</th></tr>
<tr><td>HAZMAT STORAGE

The SDS for the material must be checked before handling & storing.

 
</td><td colspan="2">In addition to the General Storage Requirements contained in Annex E, the following additional requirements apply to the storage of miscellaneous products, substances or organisms.

Asbestos-Containing Material Waste Storage
• Building owner responsibility
• Once the asbestos has been properly removed by a licensed asbestos abatement professional, packaged, and sealed; no special storage requirements are required.
• Asbestos material received from a renovation/disposal activity (ex. removal from buildings, etc.) are to be packaged in a 6 mil (0.15 mm) thick polyethylene bag packaged into a removable top, 45-gal drum (NSN 8110-21-907-6395) and labelled with an asbestos warning label.

Lithium Battery Storage
Refer to Annex E Appendix 12.</td></tr>
</table>

ANNEX E – APPENDIX 9 – AEROSOL STORAGE

This section concerns the storage of aerosol products containing flammable or combustible base products and using flammable or non-flammable gas propellants.

Considerable concern has been expressed by firefighting organizations about the difficulty of fighting fires involving aerosol products. Changes to the NFCC reflect this concern as these containers rupture when exposed to fire or excessive heat. Depending upon the contents, these cans can explode, rocket about, or otherwise cause a fire to rapidly grow out of control.

- There are 3 levels of Aerosols. Level 3 aerosols are the most dangerous.
  a) **Level 1 Aerosol** - Less than 25% by weight of water miscible or non-miscible flammable base product.
     Examples: Extra heavy duty oven cleaner, Germo Kleen, High Gloss Metal Polish, Roma Glass Cleaner, Treat and Polish, Brake cleaner, Dura Lube White Grease, Gasket Cement, Solvent Degreaser, etc.
  b) **Level 2 Aerosol** - 25 to 100% by weight of water miscible flammable base product or 25 to 55% of non-water miscible flammable or combustible base product.
     Examples: 3M Brand Silicone Lubricant, 3M Universal Fuel Injector Cleaner, Woodgrain & Stripe Remover, 3M Underseal Rubberized undercoating, Green Aerosol Paint, Smoke Detector Tester, Air Intake Cleaner, Dust Buster, Carb & Choke Cleaner, etc.
  c) **Level 3 Aerosol** - Greater than 55% by weight of non-water miscible flammable base product.
     Examples: 3M Brand High Strength Adhesive, 3M Multi Port Fuel Injector Cleaner, Safety Walk brand Primer, Spray Adhesive 72, Blue-55% VOC, Aluminium Metallic Spray, Demkote Aerosol Fluorescents, Demkote Aerosol Primers, Various Spray Paints, Napa White Lithium Grease 765-1389, etc.
- Where mixed storage is used, the storage conditions must be for the most hazardous Level stored. In addition, the compatibility criteria of the aerosol's TDG class must be observed within an aerosol storage area. See Annex E Appendix 1.
- Storage of level 2 or 3 Aerosols must be in racks if the height of the pile exceeds 1.75 m. The maximum height of racked hazardous material is 6.1 m.
- All aisles separating racks, shelves, or piles of packaged Level 2 or 3 Aerosol products must be at least 2.4 m wide.
- Packaged Level 1 Aerosols are treated as “NFCC Class III Commodities” to this section.
- Signing of the storage area may require varying symbols to reflect the aerosol products WHMIS classifications.
- Storage quantities must be in accordance with "Maximum Indoor Storage Limitations - Aerosols" to this section.

NFCC CLASS III COMMODITIES	**UNSPRINKLERED BUILDING**		**SPRINKLED BUILDINGS**		
PRODUCT CLASSIFICATION	**Area m^2**	**Max Height m**	**Area m^2**	**Max Height m**	**EXAMPLES**
Class III Commodities: (Wood, Paper, Natural fibre, Cloth or Group C plastics, or products with or without pallets.	**250**	**4.5**	**1000**	**9.0**	Clothing, luggage, books, magazines, stationary, plastic coated food containers, textiles, wood

Products with limited amounts of A or B plastics may also be included					products, tobacco items, soaps, film, drugs, etc.

MAXIMUM INDOOR STORAGE LIMITATIONS - AEROSOLS

- The following table lists the maximum indoor storage limitations of packaged aerosol products in kilograms according to the type of dedicated ISA required.
- One pallet load of packaged aerosols is approximately 1000 kg. A pallet load means a pallet loaded to maximum capacity with cartons. Typical dimensions are 1 m x 1 m x 1.75 m high or approximately 1.8 cubic meters.

	TYPE OF DEDICATED AREA REQUIRED					
	Unsprinklered Buildings			**Sprinklered Buildings**		
Product Classification	**None**	**Type A**	**Type B**	**None**	**Type A**	**Type B**
Level I	Treat as NFCC Class III Commodities					
Level 2 & 3	1000 kg	5000 kg	10 000 kg	10 000 kg	50 000 kg	No Limit

AEROSOL STORAGE LOCATIONS

- An **Aerosol Individual Storage Area** (ISA) is surrounded on all sides by aisles of at least 2.4 m wide or by at least a 1-hour fire separation. No secondary aisles of less than 2.4 m in width are permitted. This means, in effect, that each set of racks, shelves, piles, etc. becomes an "Aerosol Individual Storage Area".
- **None**: Consists of a storage area without any separations, compartments, fences as detailed in Type A or B Storage Areas.
- **Type A Storage**: Consists of one or more ISAs separated from the remainder of the building by at least a chain link fence barrier (3.8 mm steel wire, 50 mm diamond mesh minimum), or other non-combustible partitions capable of withstanding rocketing cans. It must extend to the underside of the roof deck or to a ceiling which is also strong enough to withstand such abuse.
- **Type B Storage**: Consists of one or more ISAs separated from the remainder of the building by non-combustible partitions having at least a 1-hour fire resistance rating and can withstand the impact of rocketing cans. Walls must extend to the underside of the roof deck or to a ceiling which is also of similar construction and strong enough to withstand similar impacts.

ANNEX E – APPENDIX 10 – HAZMAT STORAGE LOCKERS/CABINETS

In an effort to standardize all HAZMAT storage lockers, they are to be set up as follows:

a) Metal lockers with a maximum capacity of 500 L and built-in secondary containment for spills are to be used:

1) Yellow - Hazardous/Flammable Chemical Storage (POL storage) with aerosol cans on top shelf;

2) Red - Low Flammable and Combustible Liquid Storage ex. paint (No flammable POL products);

3) Green, Beige, or White - Non-combustible Chemicals; ex. pesticides in green cabinet, cleaning products in beige or white cabinet, etc. separated by at least 30 m (98 ft) from any other group in the same fire compartment; or

4) Blue (treated metal or plastic) - Corrosive (acid **or** base) chemical storage. Acids and bases cannot be stored in the same cabinet.

c) According to NFCC 2020 subsection 4.2.10.4, all yellow cabinets must be labelled in conspicuous letters to indicate that the cabinet contains flammable material and that open flames must be kept away;

d) According to NFCC 2020 subsection A-3.2.7.14.(1), one or more TDG placards are required at the door into a room used for the storage of dangerous goods. This applies to POL sheds and rooms where only HAZMAT is stored.

e) The appropriate TDG label(s) must be affixed to the left-hand door of the HAZMAT storage cabinet. When products are removed for shipping, the appropriate TDG placard(s) must be used;

f) No alterations are to be made to the integrity of the cabinet ex. drilled holes, caps, etc.; and

g) According to NFCC 2020 subsection 4.2.10.6, the ventilation caps/bungs on the sides of the lockers must be kept in place or vented to the outside using vent piping that provides at least the same fire protection as the ventilation caps.

The major factor to be considered when storing HAZMAT is chemical compatibility. Incompatible items may react with dangerous effect when placed in contact with each other. For this reason, segregation is necessary to prevent a serious incident. The TDG Hazardous Material Compatibility Chart may be used for general information purposes, but it is important to refer to the applicable SDS for detailed information.

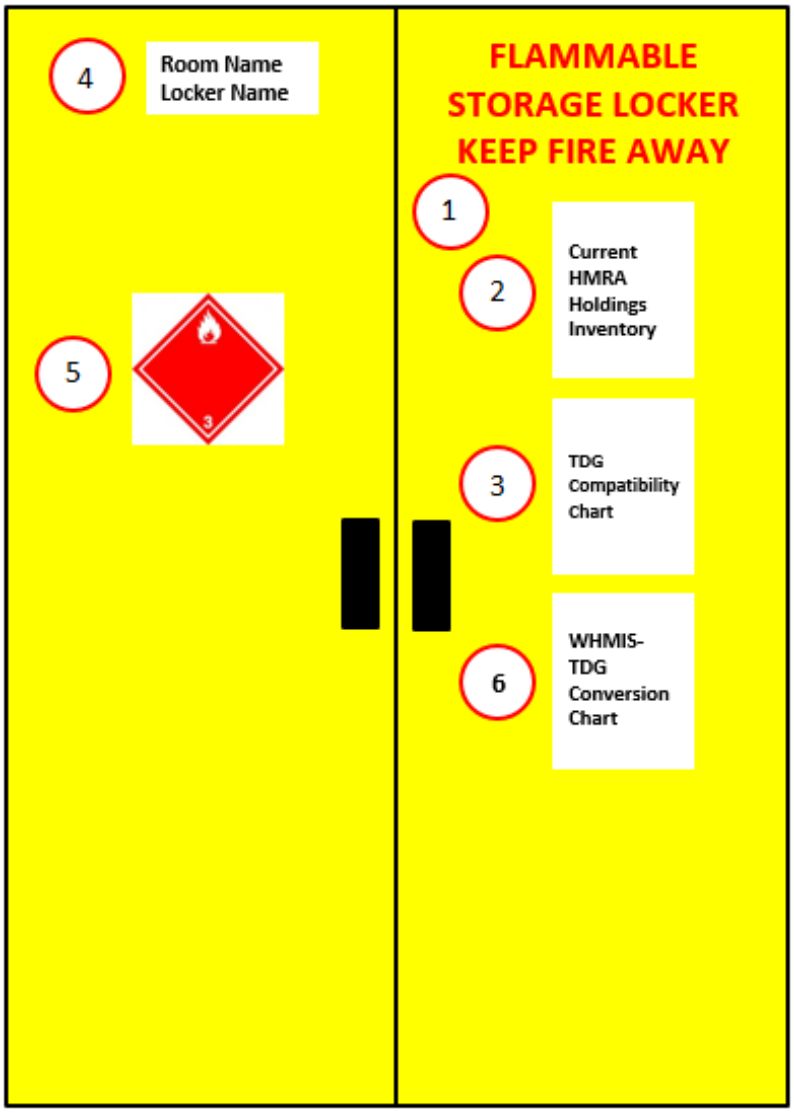
Yellow Lockers
POL Storage
Hazardous/Flammable
Chemical Storage

Red Lockers
Combustible Liquid
Storage

Green, Beige, or White Storage Lockers
Hazardous
Chemical
Storage
Non-combustible

Blue Lockers
Corrosive Chemical
Storage

Outdoor Cages
Compressed Gas Storage
Canopied Cage with
Raised non-combustible Floor



The front of **all HAZMAT storage cabinets/lockers must be labelled with the following**, which are **in approximate order of priority:**

1) Conspicuous letters to indicate that the yellow cabinet contains flammable material and that open flames must be kept away.
2) Current HMRA holdings report/inventory of cabinet. Must be updated at least **every 6 months**.
3) TDG compatibility chart found in Annex E Appendix 1 of this HMMP.
4) Room name/number and cabinet name/number correspond to HMRA entry.
5) All appropriate TDG labels (smaller size sticker compared to the larger placard) correspond to the products stored in the cabinet.
6) **Optional:** A WHMIS 2015-TDG conversion chart found in Annex H Appendix 4 of this HMMP.

Additional HAZMAT Storage Requirements:

1) A maximum of 500 L of HAZMAT may be stored in a single HAZMAT cabinet. A maximum of 1500 L of HAZMAT in three or more cabinets may be stored in one fire compartment.
2) No cardboard or other combustibles are permitted to be stored inside or on top of a flammable storage locker.
3) At least half of the area in the bottom of the HAZMAT storage locker must remain empty for secondary containment in case of a spill in the locker.
4) Plastic jerry cans of flammable liquids must not be stored indoors in a flammable storage locker. The flammable contents of a jerry can may be transferred to a metal jerry can equipped with a flame arrester, which may be stored in a grounded flammable storage locker indoors.
5) Flammable gas, such as 1-pound propane bottles, must not be stored in a flammable storage cabinet for the same reason that propane tanks must be stored outside. A maximum of 20 1-pound propane bottles may be stored inside a building.
6) Spraying flammable paint on inner and outer surfaces of a flammable storage locker is not permitted.
7) Flammable aerosol cans should be stored on the upper shelves of a flammable storage locker.
8) Plastic jerry cans and metal propane tanks expire when they are 10 years old and must be replaced. Follow the expiry dates of all HAZMAT containers.
9) According to NFCC 2020 Division B subsection 3.3.5, outdoor compressed gas storage cages must have a raised non-combustible floor and be secured in a fence or cage.
10) According to NFCC 2020 Division B subsection 2.4.1.3. Waste Receptacles, oily rags must be stored in an air-tight metal container with a self-closing tight-fitting metal lid until the oily rags can be properly disposed.
11) Methanol windshield wiper fluid should be stored in a POL shed instead of in a flammable storage cabinet to make more room in the flammable storage cabinet.

ANNEX E – APPENDIX 11 – TDG SMALL QUANTITIES EXEMPTION CHART

Quantities over these maximum amounts require the use of specially constructed HAZMAT storage facilities in accordance with the NFCC/NBCC.

TDG CLASS	HAZARDOUS MATERIALS TDG CLASSIFICATION	MAXIMUM EXEMPT AMOUNT
2	GASES	
	2.1 Flammable	25 kg
	2.2 Non-flammable, Non-toxic	150 kg
	2.3 Toxic	0
3	FLAMMABLE LIQUIDS	See Ref O (A-GG-040-004/AG-001 HAZMAT manual) Chapter 9 Annex D section 18 and Appendix 2
4	FLAMMABLE SOLIDS	
	4.1 Flammable Solids	100 kg (Note 1)
	4.2 Spontaneously Combustible	50 kg
	4.3 Water-reactive Substances	50 kg
5	OXIDIZING SUBSTANCES AND ORGANIC PEROXIDES	
	5.1 Oxidizing Substances	250 kg or 250 L
	5.2 Organic Peroxides	100 kg or 100 L
6.1	TOXIC SUBSTANCES	
	TDGR Packing Group I	0
	TDGR Packing Group II	100 kg or 100 L
	TDGR Packing Group III	1000 kg or 1000 L
6.2	INFECTIOUS SUBSTANCES	0
8	CORROSIVES	
	TDGR Packing Group I	500 kg or 500 L
	TDGR Packing Group II	1000 kg or 1000 L
	TDGR Packing Group III	2000 kg or 2000 L
9	MISCELLANEOUS PRODUCTS, SUBSTANCES OR ORGANISMS	Other Regs (Note 2)

1. Strike Anywhere Matches: Maximum Quantity = 10 kg. Military issue survival matches are especially dangerous because they are extremely difficult to extinguish.

2. Other Regs include the Transportation of Dangerous Goods Act and Regulations (TDGA/R), the Workplace Hazardous Materials Information System (WHMIS), and Environmental Protection legislation.

ANNEX E – APPENDIX 12 – LITHIUM BATTERY STORAGE

<table>
<tr><th>TDG</th><th>LITHIUM BATTERY STORAGE</th><th>WHMIS</th></tr>
<tr><td> 
Or
  </td><td>References:
A. A-GG-040-004/AG-001;
B. General Safety, Lithium Batteries - Handling, Storage, Preservation and Disposal Instructions, C-02-008-001/TS-000</td><td>NO EQUIVALENT WHMIS SYMBOL</td></tr>
<tr><td>HAZMAT STORAGE

TDG Class 9 placard must be posted.</td><td colspan="2"><u>WARNING:</u>
Some lithium batteries contain sulphur dioxide (SO_2) gas under pressure. SO_2 gas is very toxic at low concentrations. Inhalation of SO_2 gas may cause severe injury or death. Also, <u>lithium reacts violently with water</u> to produce very flammable hydrogen (H_2) gas.

<u>DO NOT:</u>
Puncture, incinerate, expose to water, over-discharge or charge non-rechargeable batteries. If VENTING occurs for any reason within a confined area, leave immediately and move to a well-ventilated area, consult a physician, and consider emergency response.

Lithium Battery Storage
The storage area for lithium batteries and lithium battery powered devices must meet the following criteria:
a) Be well ventilated;
b) Be cool with a maximum temperature of 35°C;
c) Be dry with a maximum relative humidity of 90%;
d) Not be stored in the same Individual Storage Area (ISA) as or within 2.4 m of:
1) Oxidizing substances and organic peroxides (TDG class 5);
2) Radioactive materials (TDG class 7); or
3) Corrosives (TDG class 8).
e) Not be stored within 1 m of flammable liquids (TDG class 3);
f) Do not store or accumulate large quantities of lithium batteries;
g) Stored in their original packaging (cardboard box and plastic bag) or, if already removed from the original packaging, must be separated by other lithium batteries by a minimum of 1 inch in all directions; and
h) Be fitted with a sprinkler system, a fire hose, and a D-Class fire extinguisher, preferably graphite based.

Lithium battery powered devices should be:
a) Stored in the original packing container; and
b) Located near an access or exit to allow removal in case of venting or fire.

<u>DO NOT discharge</u> Lithium Batteries within the unit lines. Return used batteries to the Haz Waste Depot for safe discharging and disposal in accordance with AI 6.209 Hazardous Waste Storage and Disposal.</td></tr>
</table>

ANNEX F – APPENDIX 1 – UHMC UNIT QUARTERLY INSPECTION CHECKLIST

UHMC: **Unit:** **Buildings:**	**Qtr 1** **Due 30 Jun**	**Qtr 2** **Due 30 Sep**	**Qtr 3** **Due 31 Dec**	**Qtr 4** **Due 31 Mar**
HAZMAT STORAGE AREAS	**Date:**	**Date:**	**Date:**	**Date:**
Storage areas identified and access controlled				
SDSs available and up to date				
Max 1500 L HAZMAT in 3 or more cabinets in 1 fire compartment				
Emergency response plan available and up to date				
Signage posted for HAZMAT PPE to be worn				
Spill kits within 15 m and maintained				
Spill containment under HAZMAT liquids				
HAZMAT stored in proper containers				
HAZMAT containers labelled				
Incompatible items stored separately				
Containers stored in upright position				
Compressed gas cylinders stored upright and secured. Propane tanks can be stored horizontally.				
Propane tanks less than 10 years old				
POL sheds - TDG placard(s) in place				
HAZMAT less than 1.75 m tall or pallet racking used				
HAZMAT storage areas - TDG placards in use				
HAZMAT storage lockers - HMRA Holdings Report **not older than 6 months**				
HAZMAT storage lockers - no cardboard stored inside or items stored on top				
Jerry cans of flammable liquids stored in POL shed and cans less than 10 years old				
All soldiers trained in WHMIS 2015				
HAZMAT SOPs in place and followed				
HAZ WASTE STORAGE AREAS				
Drums covered & bungs in place				
Oily rags in metal container with self-closing lid				
Spill kit available				
3 m separation between HAZMAT & haz waste				
Spill containment under all liquids				
Housekeeping, cleaning spills, etc.				
TDG labels & DND Haz Waste labels on haz waste drums				
POL spill stains in soil being actioned				
Meyer tanks covered, screen free of debris, and free of leaks				
Aerosol can recycling				
Parts washer fluid disposal				

ANNEX F – APPENDIX 2 – FIELD EXERCISE INSPECTION CHECKLIST

Inspector name:
Location:
Date:

Item	Item Description	Yes	No	N/A	Findings
1	**Siting, Design and Layout**				
1.1	Is HAZMAT storage area located a minimum of 30 m from a water body or sensitive area, 15 m from a tent, and 3 m from a road?				
1.2	Is storage area located at ground level and on level ground (ex. no slopes or excavations)?				
1.3	Is the site protected from external hazards? (ex. heaters, gen sets, track plans, parking areas)				
1.4	Is there sufficient storage space to prevent overcrowding?				
1.5	Is there appropriate storage for each type of hazard (ex. incompatible materials)?				
1.6	Is there a separate storage area for hazardous waste? (min 3 m apart)				
1.7	Is there appropriate amount secondary containment supplies at the storage site (ex. drip pans/mats, retention basins, absorbent membranes, synthetic berms)				
1.8	Is HAZMAT storage area clearly identified (ex. posted notices, fluorescent tape, and TDG signage)?				
1.9	Does storage area have adequate lighting? (ex. glow sticks, lighting trailers, reflective lights)				
1.10	Does storage area have adequate ventilation?				
2	**Storage and Handling**				
2.1	Is storage area kept neat and in good order?				
2.2	Is secondary containment kept free of accumulated rainwater?				
2.3	Are all items in proper containers?				
2.4	Are all items appropriately labelled (ex. workplace label, bilingual signage)?				
2.5	Is compatibility chart prominently displayed?				
2.6	Are incompatible items stored a minimum of 1 m apart?				
2.7	Are SDSs for stored products readily available and current?				
2.8	Are storage areas identified and access controlled?				
2.9	Are containers stored upright?				
2.10	Are compressed gas cylinders secured upright?				
3	**Jerry Cans**				
3.1	Is each jerry can labelled with the proper colour identification ring? Black – water; Yellow – diesel; Red – gasoline; Grey – kerosene; Orange – naphtha; White – haz waste				
3.2	Are jerry cans in serviceable condition and less than 10 years old?				
3.3	Do jerry cans have appropriate secondary containment?				
4	**Refuelling**				
4.1	Is refuelling conducted more than 100 m from a water body and on flat terrain?				
4.2	Are appropriately sized spill kits located on all refuelling vehicles?				

Item	Item Description	Yes	No	N/A	Findings
4.3	Does refuelling take place only during the daytime or under sufficient lighting?				
4.4	Are all transfers of POL performed using appropriate spill containment (ex. drip mats or drip pans)?				
5	**Fire Protection and Spill Prevention**				
5.1	Are portable fire extinguishers available within 15 m of the storage site?				
5.2	Have portable fire extinguishers been inspected and serviceable?				
5.3	Is clear access available for emergency response vehicles to the storage area?				
5.4	Are spill kits available within 15 m of the storage site?				
5.5	Are spill kits appropriate to the size and nature of the hazard?				
5.6	Are drip mats or drip pans being used under all generators and military vehicles parked for more than 1 hour?				
6	**Training**				
6.1	Are designated POL personnel WHMIS qualified?				
6.2	Are drivers transporting HAZMAT TDG certified?				
6.3	Are workers handling or transporting HAZMAT first aid trained?				
6.4	Are workers handling HAZMAT trained in the use of firefighting equipment?				
7	**Personal Protective Equipment and Facilities**				
7.1	Are first aid facilities easily accessible from the storage area?				
7.2	Do workers have adequate PPE to handle HAZMAT?				
8	**Inspections, Monitoring, and Reports**				
8.1	Are incidents/accidents/spill reporting procedures followed, current, and available to workers?				
8.2	Is the HAZMAT storage area regularly inspected by trained personnel on site?				
8.3	Have previously identified deficiencies been corrected?				

ANNEX F – APPENDIX 3 – UHMC HANDOVER CHECKLIST

UNIT	

OUTGOING UHMC		INCOMING UHMC	
NAME		NAME	
PHONE		PHONE	

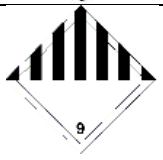
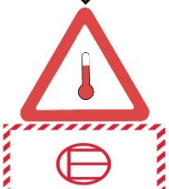
DUTIES FOR INCOMING UHMC	YES	NO
Received copies of the unit HAZMAT procedures and Spill Response Plan from the outgoing UHMC?		
Received copies of the completed quarterly inspection checklists from the outgoing UHMC?		
Received a general HAZMAT briefing with regards to unit specific policies from the outgoing UHMC?		
Contacted the Brigade General Safety Officer (BGSO) with the new UHMC contact information?		
Reviewed the 4 Division Hazardous Materials Management Plan (HMMP)?		
Contacted the Unit Ops O/BGSO for mandatory HAZMAT trainings?		
Contacted your respective HMRA Administrator for credentials?		
Reviewed the unit procedures for hazardous waste removal?		
Briefed on and reviewed unit inspection checklists?		
Made aware of the location of spill response materials?		
Made aware of the location of the Safety Board?		
Made aware of the responsibilities of the UHMC?		

Date Completed:

ANNEX G – TDG REQUIREMENTS

CLASS	PLACARD	DESCRIPTION
1 **EXPLOSIVES** **(outside of HMMP scope)**	    ** Place for Division * Compatibility Group	**Explosives** Any chemical compound, mixture, or device the primary or common purpose of which is to function by explosion. 1.1 - A substance or article with a mass explosion hazard. 1.2 - A substance or article with a fragment projection hazard, but not a mass explosion hazard. 1.3 - A substance or article which has a fire hazard along with either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard. 1.4 - A substance or article which presents no significant hazard; explosion effects are largely confined to the package and no projection or fragments of appreciable size or range are to be expected. 1.5 - A very insensitive substance which nevertheless has a mass explosion hazard like those substances in 1.1. 1.6 - An extremely insensitive article which does not have a mass explosion hazard.
2 **GASES**	    	2.1 - Flammable Gas. 2.2 - Non-Flammable, Non-Toxic Gas. 2.2(5.1) – Oxygen and oxidizing gases. * Placard for UN1005, Anhydrous Ammonia only. 2.3 - Toxic Gas.

		
3 **FLAMMABLE LIQUIDS**		A liquid which has a closed-cup flash point not greater than 60˚C.
4 **FLAMMABLE SOLIDS, SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION, AND WATER-REACTIVE SUBSTANCES**	  	4.1 - A solid that under normal conditions of transport is readily combustible, or would cause or contribute to fire through friction or from heat retained from manufacturing or processing, or is a self-reactive substance that is liable to undergo a strongly exothermic reaction, or is a desensitized explosive that is liable to explode if they are not diluted sufficiently to suppress their explosive properties. 4.2 - A substance liable to spontaneous combustion, under normal conditions of transport, or when in contact with air, liable to spontaneous heating to the point where it ignites. 4.3 - A substance that, on contact with water, emits dangerous quantities of flammable gases or becomes spontaneously combustible on contact with water or water vapour.
5 **OXIDIZING SUBSTANCES AND ORGANIC PEROXIDES**	 	5.1 - A substance which causes or contributes to the combustion of other material by yielding oxygen or other oxidizing substances whether or not the substance itself is combustible. 5.2 - An organic compound that contains the bivalent “-O-O-” structure, which is a strong oxidizing agent and may be liable to explosive decomposition, be sensitive to heat, shock, friction, or react dangerously with other dangerous goods.
6 **TOXIC SUBSTANCES AND INFECTIOUS SUBSTANCES**	 	6.1 - A solid or liquid that is toxic through inhalation, by skin contact, or by ingestion. 6.2 - Micro-organisms that are infectious or that are reasonably believed to be infectious to humans or animals.

7 RADIOACTIVE MATERIALS (outside of HMMP scope)		Any material with a specific radioactivity greater than 70 kBq/kg.
8 CORROSIVES		A substance that causes destruction of skin or corrodes steel or non-clad aluminum.
9 MISCELLANEOUS PRODUCTS, SUBSTANCES OR ORGANISMS		A substance that does not meet the criteria for inclusion in Classes 1 to 8. This includes genetically modified micro-organisms, marine pollutants, elevated temperature materials and environmentally hazardous substances.
OTHER MARKS	      	**Lithium Battery Mark** **Mark for Category B Infectious substances, UN3373** **Orange Panel** – Replace asterisk with UN number of the substance. **Danger Mixed Loads Placard** **Marine Pollutant Mark** **Elevated Temperature Sign** **Excepted Quantities Mark**

ANNEX H – WHMIS 2015 REQUIREMENTS

1. WHMIS 2015 is designed to ensure that all employers receive the information they need to educate and train their employees properly in the use of HAZMAT in the workplace. It also provides employees with necessary hazard information so they can participate in, and support, the precautionary measures instituted in their workplaces. The WHMIS hazard classification system is comprised of various distinct classes of hazards and is detailed in Annex H.

2. **List of Hazard Classes**

2.1 Physical Hazards

2.1.1 Corrosive to metals
2.1.2 Combustible dusts
2.1.3 Flammable gases
2.1.4 Flammable aerosols
2.1.5 Flammable liquids
2.1.6 Flammable solids
2.1.7 Gases under pressure
2.1.8 Pyrophoric gases
2.1.9 Pyrophoric liquids
2.1.10 Pyrophoric solids
2.1.11 Self-heating substances and mixtures
2.1.12 Self-reactive substances and mixtures
2.1.13 Substances and mixtures which, in contact with water, emit flammable gases
2.1.14 Oxidizing gases
2.1.15 Oxidizing liquids
2.1.16 Oxidizing solids
2.1.17 Organic peroxides
2.1.18 Simple asphyxiants
2.1.19 Physical hazards not otherwise classified

2.2 Health Hazards

2.2.1 Acute toxicity
2.2.2 Aspiration hazard
2.2.3 Biohazardous infectious materials
2.2.4 Germ cell mutagenicity
2.2.5 Carcinogenicity
2.2.6 Skin corrosion/irritation
2.2.7 Serious eye damage/eye irritation
2.2.8 Respiratory or skin sensitization
2.2.9 Reproductive toxicity
2.2.10 Specific target organ toxicity – single exposure
2.2.11 Specific target organ toxicity – repeated exposure
2.2.12 Health hazards not otherwise classified

2.3 However, many materials which are potentially hazardous are regulated by other federal legislation and therefore are excluded from WHMIS. The fact that these materials are outside the WHMIS legislation does not make them potentially less dangerous. DND has made it a policy to ensure that its employees are also familiar with the hazards associated with these products excluded from WHMIS. GHS defines an explosives hazard class, the hazardous to the aquatic environment hazard class, and a hazardous to the ozone layer hazard class, each with a different pictogram. The WHMIS regulations do not include these three hazard classes.

2.4 Explosives are addressed by the TDG Act and Regulations and the Explosives Act and Regulations. The TDG marine pollutant mark was updated to look more like the GHS hazardous to the aquatic environment pictogram and thus addresses it. As well, Ref A (Canadian Environmental Protection Act), Federal Halocarbon Regulations, and the Ozone-depleting Substances and Halocarbon Alternatives Regulations address the GHS Hazardous to the ozone layer hazard class. Thus, all GHS hazard classes are addressed by the Hazardous Products Act and Regulations and other legislation.

2.5 Suppliers must prepare or obtain SDSs in both official languages for each hazardous product they sell or import. Employers are responsible for obtaining a SDS from suppliers for each hazardous product used in their workplaces. There are minimum content requirements for SDSs. The content of these requirements for a SDS is explained in Annex H Appendix 1. WHMIS to TDG to Hazardous Consumer Products approximate equivalent symbols are detailed in Annex H Appendix 5.

3. **WHMIS 2015 Hazard Categories**

3.1 Each hazard class contains at least one category. The hazard categories are assigned a number (ex. 1, 2, etc.) Categories may also be called "types". Types are assigned an alphabetical letter (ex. A, B, etc.). In a few cases, sub-categories are also specified. Subcategories are identified with a number and a letter (ex. 1A and 1B).

3.2 Some hazard classes have only one category (ex. corrosive to metals), others may have two categories (ex. carcinogenicity (causes cancer) and mutagenicity) or three categories (ex. oxidizing gases, liquids, and solids).

3.3 The category tells you about how hazardous the product is (that is, the severity of hazard).

3.4 Category 1 is always the greatest level of hazard (that is, it is the most hazardous within that class). If Category 1 is further divided, Category 1A within the same hazard class is a greater hazard than category 1B.

3.5 Category 2 within the same hazard class is more hazardous than category 3, and so on. There are a few exceptions to this rule. For example, for the Gases under pressure hazard class, the hazard categories are "Compressed gas", "Liquefied gas", "Refrigerated liquefied gas" and "Dissolved gas". These classes relate to the physical state of the gas when packaged and do not describe the degree of hazard.

3.6 In addition, the Reproductive Toxicity hazard class has a separate category called "Effects on or via lactation". "Effects on or via lactation" was not assigned a specific numbered category. Reproductive toxicity also has Categories 1 and 2 which relate to effects on fertility and/or the unborn child. Effects on or via lactation is considered a different, but related hazard within the Reproductive toxicity class.

Physical Hazard Class	General Description
Flammable gases **Flammable aerosols** **Flammable liquids** **Flammable solids**	These four classes cover products that can ignite (catch fire) easily, and the main hazards are fire or explosion.
Oxidizing gases **Oxidizing liquids** **Oxidizing solids**	These three classes cover oxidizers, which may cause or intensify a fire or cause a fire or explosion.
Gases under pressure	This class includes compressed gases, liquefied gases, dissolved gases and refrigerated liquefied gases. Compressed gases, liquefied gases and dissolved gases are hazardous because of the high pressure inside the cylinder or container. The cylinder or container may explode if heated. Refrigerated liquefied gases are very cold and can cause severe cold (cryogenic) burns or injury.
Self-reactive substances and mixtures	These products may react on their own to cause a fire, explosion, or may cause a fire or explosion if heated.
Pyrophoric liquids **Pyrophoric solids** **Pyrophoric gases**	These products can catch fire very quickly (spontaneously) if exposed to air.
Self-heating substances and mixtures	These products may catch fire if exposed to air. These products differ from pyrophoric liquids or solids in that they will ignite only after a longer period or when in large amounts.

Physical Hazard Class	General Description
Substances and mixtures which, in contact with water, emit flammable gases	As the class name suggests, these products react with water to release flammable gases. In some cases, the flammable gases may ignite very quickly (spontaneously).
Organic peroxides	These products may cause a fire or explosion if heated.
Corrosive to metals	These products may be corrosive (chemically damage or destroy) to metals.
Combustible dust	This class is used to warn of products that are finely divided solid particles. If dispersed in air, the particles may catch fire or explode if ignited.
Simple asphyxiants	These products are gases that may displace oxygen in air and cause rapid suffocation.
Physical hazards not otherwise classified	This class is meant to cover any physical hazards that are not covered in any other physical hazard class. These hazards must have the characteristic of occurring by chemical reaction and result in the serious injury or death of a person at the time the reaction occurs. If a product is classified in this class, the hazard statement on the label and SDS will describe the nature of the hazard.

Health Hazard Class	General Description
Acute toxicity	These products are fatal, toxic, or harmful if inhaled, following skin contact or if swallowed. Acute toxicity refers to effects occurring following skin contact or ingestion exposure to a single dose, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours. Acute toxicity could result from exposure to the product itself, or to a product that, upon contact with water, releases a gaseous substance that is able to cause acute toxicity.
Skin corrosion/irritation	This class covers products that cause severe skin burns (ex. corrosion) and products that cause skin irritation.
Serious eye damage/eye irritation	This class covers products that cause serious eye damage (ex. corrosion) and products that cause eye irritation.
Respiratory or skin sensitization	A respiratory sensitizer is a product that may cause allergy or asthma symptoms or breathing difficulties if inhaled. A skin sensitizer is a product that may cause an allergic skin reaction.
Germ cell mutagenicity	This hazard class includes products that may cause or are suspected of causing genetic defects (permanent changes (mutations) to body cells that can be passed on to future generations).
Carcinogenicity	This hazard class includes products that may cause or are suspected of causing cancer.
Reproductive toxicity	This hazard class includes products that may damage or are suspected of damaging fertility or the unborn child (baby). Note: There is an additional category which includes products that may cause harm to breast-fed children.
Specific target organ toxicity – single exposure	This hazard class covers products that cause or may cause damage to organs (ex. liver, kidneys, or blood) following a single exposure. This class also includes a category for products that cause respiratory irritation or drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	This hazard class covers products that cause or may cause damage to organs (ex. liver, kidneys, or blood) following prolonged or repeated exposure.

Health Hazard Class	General Description
Aspiration hazard	This hazard class is for products that may be fatal if they are swallowed and enter the airways.
Biohazardous infectious materials	These materials are microorganisms, nucleic acids, or proteins that cause or is a probable cause of infection, with or without toxicity, in humans or animals.
Health hazards not otherwise classified	This class covers products that are not included in any other health hazard class. These hazards have the characteristic of occurring following acute or repeated exposure and have an adverse effect on the health of a person exposed to it - including an injury or resulting in the death of that person. If a product is classified in this class, the hazard statement will describe the nature of the hazard.

ANNEX H – APPENDIX 1 – SAFETY DATA SHEET (SDS)

The foundation of the hazard communication system known as WHMIS 2015 is the supplier-produced Safety Data Sheet (SDS). The SDS must contain 16 main headings under which producers, importers, and suppliers specify certain information as required by Ref B (Hazardous Products Act). SDSs must be available in both official languages. They contain comprehensive information on the product, its ingredients, and their hazards. This includes data required to provide effective engineering controls, safe work procedures, choice of personal protective equipment (PPE), procedures to be followed in case of emergency and data for monitoring workplace conditions and the health of exposed workers. SDSs are to be updated by the product manufacturer when new or additional information concerning the controlled product becomes available. They must be stored or posted where they can be easily consulted by workers using the product. In DND, several workplaces have constructed what is known as Right-to-Know Stations where SDSs are filed for easy access by employees.

SDS Section Number and Section Title		Specific Information Elements
1	**Identification**	• Product identifier (ex. Product name) • Other means of identification (ex. product family, synonyms, etc.) • Recommended use • Restrictions on use • Canadian supplier identifier o Name, full address, and phone number(s) • Emergency telephone number and any restrictions on the use of that number, if applicable

2	**Hazard identification**	• Hazard classification (class, category) of substance or mixture or a description of the identified hazard for Physical or Health Hazards Not Otherwise Classified
		• Label elements:
		  o Symbol (image) or the name of the symbol (ex. flame, skull and crossbones)
		  o Signal word
		  o Hazard statement(s)
		  o Precautionary statement(s)
		• Other hazards which do not result in classification (ex. molten metal hazard)

3	**Composition/Information on ingredients**	• When a hazardous product is a material or substance:
		  o Chemical name
		  o Common name and synonyms
		  o Chemical Abstract Service (CAS) registry number and any unique identifiers
		  o Chemical name of impurities, stabilizing solvents and/or additives
		• For each material or substance in a mixture that is classified in a health hazard class:
		  o Chemical name
		  o Common name and synonyms
		  o CAS registry number and any unique identifiers
		  o Concentration
		
		NOTE: Confidential business information rules can apply

SDS Section Number and Section Title		Specific Information Elements

4	**First-aid measures**	• First-aid measures by route of exposure:
		  ○ Inhalation
		  ○ Skin contact
		  ○ Eye contact
		  ○ Ingestion
		• Most important symptoms and effects (acute or delayed)
		• Immediate medical attention and special treatment, if necessary

5	**Firefighting measures**	• Suitable extinguishing media • Unsuitable extinguishing media • Specific hazards arising from the hazardous product (ex. hazardous combustion products) • Special protective equipment and precautions for firefighters
6	**Accidental release measures**	• Personal precautions, protective equipment, and emergency procedures • Methods and materials for containment and cleaning up
7	**Handling and storage**	• Precautions for safe handling • Conditions for safe storage (including incompatible materials)
8	**Exposure controls/ Personal protection**	• Control parameters, including occupational exposure guidelines or biological exposure limits and the source of those values • Appropriate engineering controls • Individual protection measures (ex. personal protective equipment)
9	**Physical and chemical properties**	• Appearance (physical state, colour, etc.) • Odour • Odour threshold • pH • Melting point/Freezing point • Initial boiling point/boiling range • Flash point • Evaporation rate • Flammability (solid, gas) • Lower flammable/explosive limit • Upper flammable/explosive limit • Vapour pressure • Vapour density • Relative density • Solubility • Partition coefficient - n-octanol/water • Auto-ignition temperature • Decomposition temperature • Viscosity

SDS Section Number and Section Title		Specific Information Elements
10	**Stability and reactivity**	• Reactivity • Chemical stability • Possibility of hazardous reactions • Conditions to avoid (ex. static discharge, shock, or vibration) • Incompatible materials • Hazardous decomposition products
11	**Toxicological information**	Concise but complete description of the various toxic health effects and the data used to identify those effects, including: • Information on the likely routes of exposure (inhalation, ingestion, skin, and eye contact) • Symptoms related to the physical, chemical, and toxicological characteristics • Delayed and immediate effects, and chronic effects from short-term and long-term exposure • Numerical measures of toxicity
12	**Ecological information** (Only section number and title required in WHMIS 2015)	• Ecotoxicity • Persistence and degradability • Bioaccumulative potential • Mobility in soil • Other adverse effects
13	**Disposal considerations** (Only section number and title required in WHMIS 2015)	• Information on safe handling for disposal and methods of disposal, including any contaminated packaging
14	**Transport information** (Only section number and title required in WHMIS 2015)	• UN number • UN proper shipping name • Transport hazard class(es) • Packing group • Environmental hazards • Transport in bulk, if applicable • Special precautions
15	**Regulatory information** (Only section number and title required in WHMIS 2015)	• Safety, health, and environmental regulations specific to the product
16	**Other information**	• Date of the latest revision of the SDS

ANNEX H – APPENDIX 2 – ACCESS TO SDS AND HAZMAT INFORMATION VIA THE INTRANET

The ADM(Mat) Directorate of Supply Chain Operations (DSCO) has developed an intranet site, which provides an array of HAZMAT information. This includes a location where personnel can access SDSs.

To view and print a SDS, follow the steps provided:

Log on if you have full access to HMRA or choose the browser option for read only access: http://materiel.mil.ca/en/policy-library-tools-policy-procedure/hazmat.page

Click on - PRODUCTS – PRODUCTS

- Note: This is the key menu item for accessing information.

On the next page, find your product by selecting at least one of the requested criteria.

- HMRA Product ID Number, HMRA ID Number, Manufacturer, Part Number, Global Trade Identification Number (Bar Code) or Brand Name.

Select one of the buttons to the right of the known criteria (paper icon) to get a drop-down box.

Begin typing the known information. ex. Manufacturer – Irving Oil Limited

Click on - OK

Click on - GREEN CHECKMARK (Accept button)

- This will take you to a complete list of all Irving Oil Limited products.

Click on the product name you are interested in; this product will then be highlighted. The tabs above will be activated for that product.

Select - SDS tab

- The most recent SDS will be highlighted.

Click on - OPEN button

If you require the French Version the Click on the FRENCH button and then the OPEN button.

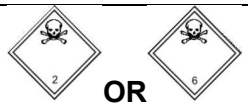
- This will bring up the corresponding SDS.
- The SDS can be printed now by selecting the print button in the toolbar and printing to a local printer.

ANNEX H – APPENDIX 3 – WHMIS 2015 PICTOGRAMS

The pictogram represents…	It means that the material…	And that you should…
Gases Under Pressure 	• Poses an explosion danger because the gas is being held in a cylinder under pressure. • May cause its container to explode if heated in a fire. • May cause its container to explode if dropped.	• Handle with care. • Keep cylinder away from potential sources of ignition. • Store the containers in the area designated by your supervisor. • Secure large cylinders with chains, clamps or by nesting.
Flammable and Combustible Material 	• Can readily burn and is therefore a potential fire hazard. • May burn at relatively low temperatures: flammable materials catch fire at lower temperature than combustible materials. • May burst into flame spontaneously in air or release a flammable gas on contact with water. • May cause fire when exposed to heat, sparks, and flames or as result of friction.	• Keep the material away from heat sources, sparks, and other combustible materials. • Never smoke when working with or near the material. • Store the material in a cool, fireproof area, as designated by your supervisor.
Oxidizing Material 	• Poses a fire and/or explosion risk in the presence of flammable or combustible material. • May react violently or cause an explosion when it encounters flammable material such as fuels. • May cause fire when it encounters combustible material such as wood. • May burn skin and eyes on contact.	• Keep the material away from combustible materials, grease, and oil and store in the areas designated by your supervisor. • Keep the material away from sources of ignition. • Never smoke when working with or near the material. • Wear proper protective equipment, including eye, face, and hand protection and protective clothing.
Acute Toxicity (fatal or toxic) 	• Is potentially a fatal poisonous substance. • May be fatal or cause permanent damage if it is inhaled or swallowed or if it enters the body through skin contact. • May burn eyes or skin on contact.	• Handle the material with extreme caution. • Avoid contact with the skin or eyes by wearing proper PPE, including eye, face, and hand protection and protective clothing. • Avoid inhaling by working in well-ventilated areas and/or wear respiratory equipment. • Wash or shower thoroughly after using. • Store the material in designated areas only below eye level.

The pictogram represents…	It means that the material…	And that you should…
Health Hazard 	• Is a poisonous substance that's not immediately dangerous to health. • May cause death or permanent damage because of repeated exposure over time. • May be a skin or eye irritant. • May be a sensitizer, which produces a chemical allergy. • May cause cancer. May cause birth defects or sterility.	• Avoid contact with the skin or eyes by wearing proper protective equipment, including eye, face, and hand protection and protective clothing. • Avoid inhaling by working in well-ventilated areas and/or wear respiratory equipment. • Store the material in designated areas only below eye level.
Irritants 	• May cause soreness or redness to the skin. • May cause the skin and eyes to become irritated. • May cause skin sensitization, acute toxicity, and narcotic effects.	• Wear gloves, eye protection and a respirator
Corrosive Material 	• Causes severe eye and skin irritation upon contact. • Causes severe tissue damage with prolonged contact. May be harmful if inhaled.	• Keep container tightly closed. • Avoid contact with the skin or eyes by wearing proper protective equipment, including eye, face, and hand protection and protective clothing. • Avoid inhaling by working in well-ventilated areas only and/or wearing the proper respiratory equipment, as designated by your supervisor. Store the material in designated areas only below eye level.
Self-reactive substances and mixtures, Organic peroxides 	• Is very unstable. • May react with water to release a toxic or flammable gas. • May explode because of shock, friction or increase in temperature. • May explode if heated when in a closed container. • Undergoes vigorous polymerization. Does not mean explosive. TDG Class 1 addresses explosives.	• Keep material away from heat. • Open containers carefully. • Do not drop them. • Store the material in a cool, flameproof area, as designated by your supervisor.
Biohazardous Infectious Material 	May cause a serious disease resulting in illness or death. A similar pictogram is used on biohazardous waste containers but is not a WHMIS pictogram. WHMIS pictograms are not meant to be used on waste containers.	• Take every measure to avoid contamination. • Handle the material only when fully protected by the proper, designated equipment. • Handle the material in designated areas where engineering controls are in place to prevent exposure.

ANNEX H – APPENDIX 4 – WHMIS TO TDG SYMBOLS

WHMIS 2015 HAZARD CLASSES	WHMIS 2015 PICTOGRAMS	TDG PLACARDS
Gases Under Pressure		
Flammable gases and aerosols		
Flammable liquids		
Flammable solids		
Pyrophoric (gases, liquids, solids), Self-heating substances and mixtures		
Substances and mixtures which, in contact with water, emit flammable gases		
Oxidizing gases		
Oxidizing liquids and solids		
Acute toxicity (fatal or toxic)		 OR
Carcinogenicity, Germ cell mutagenicity, Respiratory sensitization, Reproductive toxicity, Specific target organ toxicity – single exposure, Specific target organ toxicity – repeated exposure, Aspiration hazard		No equivalent
Acute toxicity (harmful), Skin irritation, Eye irritation, Skin sensitization, Specific target organ toxicity – single exposure (respiratory irritation, drowsiness or dizziness)		No equivalent
Corrosive to metals, Skin corrosion, Serious eye damage		
Self-reactive substances and mixtures		
Organic peroxides		
Biohazardous Infectious Materials		

ANNEX H – APPENDIX 5 – WHMIS TO TDG TO HAZARDOUS CONSUMER PRODUCTS SYMBOLS

WHMIS 2015	TDG		HAZARDOUS CONSUMER PRODUCTS
Gases Under Pressure 	**CLASS 2.2** Non-Flammable, Non-Toxic Gas		**EXPLOSIVE:** **Container can explode if heated or punctured** 
Flammable gases and aerosols Flammable liquids Flammable solids Pyrophoric (gases, liquids, solids), Self-heating substances and mixtures Substances and mixtures which, in contact with water, emit flammable gases 	**CLASS 2.1** Flammable Gas **CLASS 3** Flammable Liquids **CLASS 4.1** Flammable Solids **CLASS 4.2** Spontaneously Combustible Materials **CLASS 4.3** On contact with water, emits flammable gases		**FLAMMABLE:** **Contents are flammable** 
Acute toxicity (fatal or toxic) 	**CLASS 2.3** Toxic Gas **CLASS 6.1** A solid or liquid that is toxic through inhalation, by skin contact or by ingestion		**POISON:** **Contents are toxic** 
Corrosive to metals, Skin corrosion, Serious eye damage 	**CLASS 8** Corrosives		**CORROSIVE:** **Contents are corrosive** 

ANNEX H – APPENDIX 6 – WHMIS WORKPLACE LABELS

All hazardous products and materials used and stored in the workplace must be labelled to ensure that all workers are aware of the hazards associated with the materials they are working with.

Ultimately, it is a worker responsibility to identify and affix workplace labels to product containers and materials when:

a) A product is delivered to the workplace in bulk and a supplier label is not available or affixed to the container;

b) A product is transferred from a bulk container to a smaller container for use in the workplace;

c) A product container's supplier label, WHMIS 2015 label, or Hazardous Consumer Products label becomes detached, damaged, lost, or illegible.

Workplace labels must include, at a minimum, the following information:

a) Product Identifier (Exactly as shown on the SDS)

b) Hazard Information:

   i. WHMIS Pictogram(s)

   ii. Signal word (**DANGER, WARNING, or none)**

   iii. Includes both hazard risk statements and precautionary statements

c) Reference to the Safety Data Sheet

Example of a DND WHMIS 2015 Workplace Label

WD-40 BULK

DANGER!

HAZARDS:

May be fatal if swallowed and enters airways.* Flammable liquid and vapour.* May cause drowsiness or dizziness.

PRECAUTIONS:

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.* Keep container tightly closed.* Ground and bond container and receiving equipment.* Use explosion-proof electrical equipment.* Use non-sparking tools.* Take action to prevent static discharges.* Avoid breathing vapour or mist.* Use only outdoors or in a well-ventilated area.* Wear eye protection.

Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.* IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].* IF INHALED: Remove person to fresh air and keep comfortable for breathing.* IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a

For SDS, see HMRA ID: **663**

WD-40 PRODUCTS (CANADA) LTD. tel. 416-622-9881

ANNEX H – APPENDIX 7 – COLOUR-CODED JERRY CAN CAP STRAP LABELLING SYSTEM

In addition to TDG placards, TDG labels, WHMIS 2015 pictograms, and Hazardous Consumer Products pictograms is another chemical hazard communication system. Plastic military fuel cans (also known as Jerry cans) are used extensively within the 4th Cdn Div as a safe means of transporting POL products. Colour-coded Jerry can cap straps are used as indicators to the product stored within the can. Units with the 4th Cdn Div will use the following cap straps for the respective material. ADM(Mat) created and maintains the colour-coded Jerry Can Cap Strap Labelling System. The cap straps can be searched by NSN or by the item name “cap strap” on the Canadian Government Cataloguing System (CGCS) website.

Table 1:

Jerry Can Cap Straps NSN	Colour	Label	Product
9905-21-902-4063	Yellow	D	Diesel Fuel
9905-21-902-4062	Red	P	Petrol/Petroleum/Gasoline
9905-21-902-4065	Grey	K	Kerosene
9905-21-902-4064	Orange	N	Naphtha
9905-21-906-1237	Overall Blue	CW	Chemical Warfare Decontamination Liquids
9905-20-A0R-1499	Black	O	Engine Oil

Waste and contaminated POL should be placed in waste Jerry cans, marked with a white lid:

Table 2:

Jerry Can Lids NSN	Colour	Product
7240-21-920-5898	White	Liquid Waste

WHMIS 2015 Workplace Label

Product Identifier **Danger:** ☐ **Warning:** ☐

GHS Hazard Pictogram

Personal Protective Equipment

Other

Refer to the Safety Data Sheet for additional information

Instructions

- Workplace labels vary in size to meet your needs.
- Complete the **Product Identifier** with information provided on the product label or applicable SDS.
- The GHS Hazard Pictogram which do not apply are blackened out. Personal Protective Equipment (PPE) which do not apply are blackened out.
- The block labeled **Other** is used for hazard statements and precautionary statements.
- Refer to SDS for complete list of statements and first aid instructions.

WHMIS 2015 Workplace Label

Product Identifier **Danger:** ☐ **Warning:** ☐

GHS Hazard Pictogram

Personal Protective Equipment

Other

Refer to the Safety Data Sheet for additional information

Instructions

- Workplace labels vary in size to meet your needs.
- Complete the **Product Identifier** with information provided on the product label or applicable SDS.
- The GHS Hazard Pictogram which do not apply are blackened out. Personal Protective Equipment (PPE) which do not apply are blackened out.
- The block labeled **Other** is used for hazard statements and precautionary statements.
- Refer to SDS for complete list of statements and first aid instructions.

HMRA Inventory

You are conducting an inventory at 2 CER, Maintenance Section. The storage area is in the 2 CER HQ Building (BB-104) and you are conducting the inventory of the Maintenance HazMat Room, Room 118.

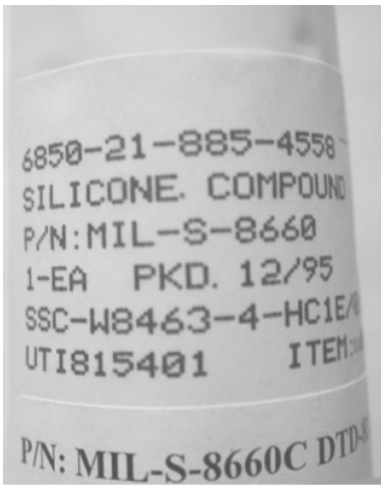
Inventory the following products on the attached HMRA Holding Identification Form:

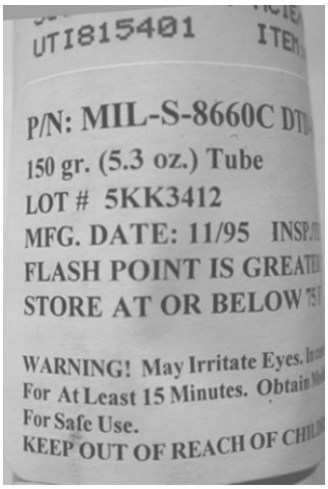
- The WD-40 detailed in the SDS from the previous case study. There are three WD-40 1-L spray bottles; and you may hold a maximum of 6 in stock.
- The Mobil/Delvac 15W40 oil detailed in the SDS from the previous case study. You have one 55-Gal (US) drum in storage which is also the maximum you would have.
- One Break-Free CLP 1-Gal (US) jug and you may have a maximum of 4 in storage: Stock Code 9150 010536688; Part Number 1009216.
- The five products pictured below.

1 in stock
2 maximum in stock

Magnification of the tube to see the size and stock number:

2 in stock
12 maximum in stock





2 in stock
2 maximum in stock

4 in stock
12 maximum in stock

1 in stock
4 maximum in stock

HMRA HOLDINGS IDENTIFICATION FORM

Section Identification	
Base*	
Unit*	
Section*	
Contact Name*	
Date*	

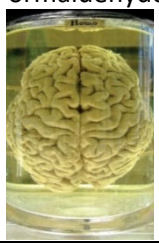
Location	
Building Name	
Building Number*	
Room Name*	
Room Number	

Product Identifier Data					Holdings Data					
Storage Location*	Supplier Name*	Brand Name*	Reference Numbers	Stock Code (NSN)	Count Actual	Max Quantity*	Container size*	Container UoM*	Container Type*	HMRA ID

Workplace Hazardous Materials Information System and Transportation of Dangerous Goods Worksheet

Determine the WHMIS Class and TDG Class for each of the products below.

Product	WHMIS	TDG
Propane 		
Sulphuric Acid 		
Gasoline 		
Matches 		
Mercury 		
Rabies 		

Product	WHMIS	TDG
Formaldehyde 		
Fertilizer 		
Diesel 		

Determine if the following products are compatible and also list any stipulations which may pertinent to the storage of each pair of items.

1. Gasoline and Fertilizer
2. Sulphuric Acid (H_2SO_4) and Sodium Hydroxide (NaOH)
3. Mercury and Diesel
4. Gasoline and Oil

ANNEX F – APPENDIX 1 – UHMC UNIT QUARTERLY INSPECTION CHECKLIST

UHMC: **Unit:** **Buildings:**	**Qtr 1** **Due 30 Jun**	**Qtr 2** **Due 30 Sep**	**Qtr 3** **Due 31 Dec**	**Qtr 4** **Due 31 Mar**
HAZMAT STORAGE AREAS	**Date:**	**Date:**	**Date:**	**Date:**
Storage areas identified and access controlled				
SDSs available and up to date				
Max 1500 L HAZMAT in 3 or more cabinets in 1 fire compartment				
Emergency response plan available and up to date				
Signage posted for HAZMAT PPE to be worn				
Spill kits within 15 m and maintained				
Spill containment under HAZMAT liquids				
HAZMAT stored in proper containers				
HAZMAT containers labelled				
Incompatible items stored separately				
Containers stored in upright position				
Compressed gas cylinders stored upright and secured. Propane tanks can be stored horizontally.				
Propane tanks less than 10 years old				
POL sheds - TDG placard(s) in place				
HAZMAT less than 1.75 m tall or pallet racking used				
HAZMAT storage areas - TDG placards in use				
HAZMAT storage lockers - HMRA Holdings Report **not older than 6 months**				
HAZMAT storage lockers - no cardboard stored inside or items stored on top				
Jerry cans of flammable liquids stored in POL shed and cans less than 10 years old				
All soldiers trained in WHMIS 2015				
HAZMAT SOPs in place and followed				
HAZ WASTE STORAGE AREAS				
Drums covered & bungs in place				
Oily rags in metal container with self-closing lid				
Spill kit available				
3 m separation between HAZMAT & haz waste				
Spill containment under all liquids				
Housekeeping, cleaning spills, etc.				
TDG labels & DND Haz Waste labels on haz waste drums				
POL spill stains in soil being actioned				
Meyer tanks covered, screen free of debris, and free of leaks				
Aerosol can recycling				
Parts washer fluid disposal				