Hazard Communication Protocol

Overview

Purpose
This Devon Energy EHS Protocol defines what is required to communicate chemical hazards in the workplace.

Scope
This protocol applies to all Devon operated equipment and facilities and all Devon employees.

Contractors will have their own document that meets or exceeds Devon’s Hazard Communication Protocol.

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1.0 RESPONSIBILITIES

Division/Business Unit Leadership
- Set the example by utilizing and holding others accountable to this protocol and provide resources for application of the protocol.
- Ensure employees receive required training.

Line Supervisor
- Understand how this protocol applies to personnel in their area of responsibility.
- Ensure employees have training, skills, knowledge and understanding to comply with this protocol.
- Check periodically to ensure the requirements of this protocol are being met.

Environmental, Health, and Safety
- Provide technical resources and tools for protocol application.
- Monitor compliance through the audit process.

Devon Employees
- Adhere to the requirements of this protocol.
- Identify and report gaps in this protocol.
- Complete required training.

Contract Company Representative
- Comply with regulatory requirements and follow the Devon EHS protocol.

2.0 TERMS AND DEFINITIONS

2.1 Hazard Communication Terms and Definitions

3E Online - a web-based application that provides access to Devon’s hazardous chemical inventory(s) and associated material safety data sheets.

Chemical - any element, compound, or mixture of elements and/or compounds (e.g., fumes, gases, liquids, mists, solids, and vapors).

Chemical Inventory - a list of the hazardous chemicals, and their quantity, known to be present for the work area.

Consumer Product - any article, or component produced or distributed for sale to a consumer for use in or around a household or residence, a school, in recreation, or otherwise.

Container - any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, or storage tank that contains a hazardous chemical. Pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Hazardous Chemical - any chemical which is a physical hazard (e.g., flammability) or health hazard (e.g., cancer, irritation, and/or lung damage).

HAZCOM Coordinator - Corporate EHS employee assigned responsibility for providing oversight to Devon’s Hazard Communication Program.

Health Hazard - a chemical(s) for which acute or chronic health effects may occur in exposed employees.

Identity - any term which appears on the label, the material safety data sheet, and the list of chemicals/chemical inventory, and thus links these three sources of information. The identity may be a common or trade name (e.g., "Antifreeze"), or a chemical name (e.g., Ethylene glycol).
Immediate Use - a chemical under the control of and used only by the person who transfers it from the labeled container and only within the work shift in which it was transferred.

Label - written, printed, or graphic material displayed on or affixed to a container.

Material Safety Data Sheet(s) - a written or printed sheet, developed by manufacturers, that contains the details of the physical and health hazards, routes of exposure, emergency and first-aid procedures, control measures, and precautions for safe handling and use of the hazardous chemical.

Mixture - any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

Personal Protective Equipment - any device or clothing worn to protect against hazards. (e.g., flame resistant clothing, gloves, respirators, safety glasses, steel-toed safety shoes, etc.)

Physical Hazard - a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Responsible Employee - employee(s) identified by the line supervisor as responsible for obtaining and maintaining material safety data sheets and for preparing and updating the chemical inventory in the work place.

Supplier Label - the label provided by the supplier of a controlled production under Canada’s Hazardous Products Act.

Use - package, handle, react, emit, extract, generate as a byproduct, or transfer.

Work Site Label - a label for products regulated under Canada’s Controlled Products regulation which discloses the following information:
- A product identifier that is identical to that found on the material safety data sheet for the product,
- Information for the safe handling of the controlled product, and
- Reference to the material safety data sheet for the controlled product.

2.2 General Terms and Definitions

Area - individual operating fields or components that collectively comprise a Region; Areas normally include an area office.

Area Office - field office with assigned employees that support an area. (e.g., Havre, Groesbeck, Riverton, and Fort St. John).

Business Unit - individual components that collectively comprise a Division. Business Units may also be referred to as Basins.

Contract Company Representative - a contractor who is assigned responsibilities and oversight for a specific task that requires adherence to Devon EHS Protocols.

Division - the division operations of Devon are Canada, Corporate, Marketing & Midstream, Mid-Continent, and Southern.

Facility - the collection of tangible structures, piping, valves, vessels, tanks, compression, and processing equipment located in close geographic proximity, that are involved directly in the development, production, processing or delivery of oil and gas to market (e.g., a tank battery, drill site, well-site, compressor station, pipeline, and gas plant).

Field EHS - a titled position that provides EHS guidance and support within a Division.

Line Supervisor - titled position that has assigned authority and responsibility for financials, production, maintenance, projects and personnel for a defined area. In Devon, this could be any Supervisor, Superintendent, Foreman, or Assistant Foreman.
Hazard Communication Protocol

Person-in-Charge (PIC) - a person that has been authorized by Devon to perform specific tasks to comply with this Devon protocol and/or regulatory requirements related to EHS. The PIC is defined in all protocols in the second column of the protocol section.

Region/District - individual components that collectively comprise a Division.

<table>
<thead>
<tr>
<th>3.0</th>
<th>PROTOCOL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.1</strong></td>
<td>Hazardous Chemical Evaluation</td>
</tr>
<tr>
<td><strong>Step</strong></td>
<td><strong>Person In Charge (PIC)</strong></td>
</tr>
</tbody>
</table>
| 3.1.1 | Line Supervisor | Assess hazards of each job task and any situation where a hazardous chemical is present in such a way that employees may be exposed under normal conditions of use or in foreseeable circumstances.  
**Note:** Document on Personal Protective Equipment Hazard Assessment Form. |
| 3.1.2 | Employee | Assess hazards of non-routine tasks in the workplace and the hazards associated with chemicals.  
**Note:** Document on Job Hazard Analysis Form. |
| 3.1.3 | Employee | Evaluate hazards of chemical mixtures based on the most hazardous component in the mixture.  
**Note:** Assume a mixture has a carcinogenic hazard if it contains any components that are considered carcinogens. |
| 3.1.4 | Employee | Take steps to reduce exposures (e.g., substitute less hazardous materials and establish proper work practices) when possible. |
| 3.1.5 | Line Supervisor | Implement applicable control measures such as engineering controls, administrative controls, and/or personal protective equipment for exposed employees.  
**Note:** Employer will provide all applicable chemical personal protective equipment referenced on material safety data sheets. |

**3.2 Chemical Inventory**

The chemical inventory is used to track the different types and amounts of chemicals stored/used at Devon locations. In addition, it can be a useful tool when training new individuals on the chemicals and associated hazards of the chemicals. The divisions are responsible for assigning a responsible employee and managing their chemical inventories.

| **Step** | **Person In Charge (PIC)** | **Action** |
| 3.2.1 | Line Supervisor | Assign a responsible employee to manage the chemical inventory. |
| 3.2.2 | Responsible Employee | Maintain an inventory of all hazardous chemicals in the workplace using 3E Online. |
| 3.2.3 | Responsible Employee | Update the chemical inventory as new chemicals are purchased, when chemical use is discontinued, and/or when necessary. |
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#### 3.2.4 Responsible Employee
- Review the chemical inventory annually. Chemicals that are no longer in use should be removed from the chemical inventory in 3E Online and archived using the Hazardous Chemical Inventory Archive and Review Form in Attachment B.

#### 3.2.5 Responsible Employee
- Keep the Hazardous Chemical Inventory Archive and Review Form for 30 years per Devon’s Enterprise Classification Structure.
  - **Note:** See Section 4.2 for more information.

### Material Safety Data Sheets

Material Safety Data Sheets are kept on 3E Online. The management of supplier Material Safety Data Sheets, and assigning a responsible employee, are divisions’ responsibilities.

<table>
<thead>
<tr>
<th>Step</th>
<th>Person In Charge (PIC)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3.1</td>
<td>Line Supervisor</td>
<td>Designate and assign a responsible employee to obtain and maintain the material safety data sheets.</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Employee</td>
<td>Verify material safety data sheets are received with incoming hazardous chemicals.</td>
</tr>
<tr>
<td>3.3.3</td>
<td>Employee</td>
<td>Do not use any hazardous chemicals for which material safety data sheets have not been received. Contact your supplier immediately and request material safety data sheets if any are missing.</td>
</tr>
<tr>
<td>3.3.4</td>
<td>Employee</td>
<td>Send material safety data sheet(s) to the Responsible Employee for your worksite.</td>
</tr>
</tbody>
</table>
  - **Note:** Material safety data sheets are not required to be kept for consumer products which are used in the manner intended, and the duration that could reasonably be experienced by consumers. |
| 3.3.5 | Responsible Employee | Maintain material safety data sheets for the location you are assigned in 3E Online. |
| 3.3.6 | Employee | Access material safety data sheets in 3E Online, either through Strata or by logging in to www.3eonline.com (User Name: devonenergy, Password: Oklahoma). |
  - **Note:** In the event that material safety data sheets cannot be accessed through the website, 3E MSDS On Demand can provide material safety data sheets 24-7-365. Call 800-451-8346 to request up to ten material safety data sheets. 3E will fax or email the material safety data sheet directly to you or whomever you request. Be prepared to provide as much of the following information as possible: |
  - Contact phone |
  - Fax number |
  - Email address |
  - Product name |
  - Manufacturer name |
  - Product number |
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### 3.3.7 Responsible Employee
- Update material safety data sheets in 3E Online within 30 days of a new hazardous chemical being brought on the worksite.
  - **Note:** Send all new and/or updated material safety data sheets to updates@3ecompany.com
    - For new material safety data sheets include the following information in the email: division and area.
  - **Note:** See Appendix A for more detailed instructions on accessing 3E Online.

### 3.3.8 Employee
- Contact Corporate EHS if/when Devon produces a hazardous chemical for use or distribution and a material safety data sheet needs to be prepared or revised.

### 3.3.9 Contract Company Representative
- Provide material safety data sheet for all hazardous chemicals brought to a Devon site.

### 3.3.10 HAZCOM Coordinator
- Backup material safety data sheets semiannually to a rewritable CD-ROM/DVD using the 3E Online Export Center.

### Multi-Employer Worksite MSDS

### 3.3.11 Employee
- Provide material safety data sheets to contractors upon request.
  - **Note:** Material safety data sheets will be on 3e Online.

### 3.3.12 Employee
- Inform contractors during the pre-task tailgate of any precautionary measures that need to be taken for protection for normal operations and foreseeable emergencies.

### 3.3.13 Employee
- Communicate to contractors which labeling system is in place at the facility.
  - **Note:** Devon uses either the NFPA or HIMS system for workplace labeling.

### 3.4 Material Safety Data Sheet Development

<table>
<thead>
<tr>
<th>Step</th>
<th>Person In Charge (PIC)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4.1</td>
<td>HAZCOM Coordinator</td>
<td>Assign an identity to be used on every label and material safety data sheet for each hazardous chemical.</td>
</tr>
<tr>
<td>3.4.2</td>
<td>HAZCOM Coordinator</td>
<td>Contact the 3E MSDS Authoring Service to assist with creation of material safety data sheets and product label content.</td>
</tr>
<tr>
<td>3.4.3</td>
<td>HAZCOM Coordinator</td>
<td>Verify the created material safety data sheets meet the requirements in Appendix B for Canadian operations, and Appendix C for United States (U.S.) operations.</td>
</tr>
<tr>
<td>3.4.4</td>
<td>HAZCOM Coordinator</td>
<td>Upload created material safety data sheets in 3E Online.</td>
</tr>
<tr>
<td>3.4.5</td>
<td>HAZCOM Coordinator</td>
<td>Review Devon Company material safety data sheets every three years.</td>
</tr>
</tbody>
</table>

### 3.5 Labels and Other Forms of Warning

<table>
<thead>
<tr>
<th>Step</th>
<th>Person In Charge (PIC)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Chemicals Leaving The Workplace</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**PROPRIETARY INFORMATION** Devon Energy Corporation
Printed copies may not be most recent version of document
Document uncontrolled unless viewed via the Devon Intranet
Hazard Communication Protocol

3.5.1 Employee Label, tag or mark containers of Devon manufactured hazardous chemicals being shipped from the workplace with the following information:

- Identity of the hazardous chemical(s) contained
- Appropriate hazard warnings (words, pictures, symbols, or combination thereof) which provide information regarding the physical and health hazards of the hazardous chemical
- Name and address of the chemical manufacturer, importer, or other responsible party

Note: Ensure that labels do not conflict with the requirements of the Hazardous Materials Transportation Act (49 USC 1801) and regulations issued under that Act by the Department of Transportation.

Note: Portable containers which are used to transfer hazardous chemicals do not require a label if they are intended only for the immediate use of the employee who performs the transfer.

Note: See Appendix D for labeling exceptions.

3.5.2 Employee Provide a Workplace Hazardous Materials Information System (WHMIS) label, as described in Appendix H, for products offered for sale in Canada.

3.5.3 Employee Maintain labels on containers of hazardous chemicals received from the manufacturer. If labels are removed, defaced, or illegible, re-label immediately with the information in step 3.5.6.

3.5.4 Employee Check purchased materials for labels prior to initial use.

3.5.5 Employee Revise the labels for hazardous chemicals as soon as possible, not to exceed three months, after becoming aware of new information regarding the hazards of the chemical.

3.5.6 Employee Label all stationary storage containers, and any container that is not the original manufacturer or distributor container, as follows:

- Identity of the hazardous chemical(s) contained, and
- A National Fire Protection Association “diamond” or Hazardous Materials Identification System III, or
- A Workplace Label in Canada.

Note: See Section 3.5.1 for information on portable containers.

Note: Appendix E describes the National Fire Protection Association’s label. Appendix F describes the Hazardous Materials Identification System III label. Appendix G describes the Workplace Labels used in Canada.

4.0 RECORDKEEPING

Step | Person In Charge (PIC) | Action
--- | --- | ---
4.1 | Employee | Forward records to Division EHS for filing.
4.2 | Field EHS | File the records from Section 4.1 as noted below:
### Hazard Communication Protocol

#### Record File Location & Number Retention Time Records Management Enterprise Classification Structure Code

<table>
<thead>
<tr>
<th>Record</th>
<th>File Location &amp; Number</th>
<th>Retention Time</th>
<th>Records Management Enterprise Classification Structure Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active material safety data sheets</td>
<td>3E Online</td>
<td>As long as chemical is present at site</td>
<td></td>
</tr>
<tr>
<td>Devon company material safety data sheets</td>
<td>3E Online</td>
<td>As long as chemical is present at site</td>
<td></td>
</tr>
<tr>
<td>Hazardous Chemical Inventory Archive and Review Form</td>
<td>See Field Office File Directory</td>
<td>30 years</td>
<td>EH40</td>
</tr>
<tr>
<td>Backup material safety data sheet CD-ROM/DVD</td>
<td>See Corporate File Directory</td>
<td>6 months</td>
<td></td>
</tr>
</tbody>
</table>

Note: The Records Management Enterprise Classification Structure Code is listed as a reference, which should be utilized when records are sent to stored records.

### 5.0 TRAINING REQUIREMENTS

<table>
<thead>
<tr>
<th>Step</th>
<th>Person In Charge (PIC)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Line Supervisor</td>
<td>Verify all Devon employees have completed the Hazard Communication Training at the time of their initial assignment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training must include:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Location of chemical inventories and material safety data sheets for their work area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Instructions on how to read and use labels and material safety data sheets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Measures available for employees to protect themselves from hazardous chemicals in the work area (e.g., appropriate work practices, emergency procedures, and personal protective equipment, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Methods and observations that may be used (e.g., monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals being released) to detect the presence or release of a hazardous chemical in the work area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Physical and health hazards of the chemicals in the work area</td>
</tr>
<tr>
<td>5.2</td>
<td>Line Supervisor</td>
<td>Confirm employees are trained whenever new categories of hazards the employees have not previously been trained about are introduced into their work area(s).</td>
</tr>
<tr>
<td>5.3</td>
<td>Line Supervisor</td>
<td>Confirm Responsible Employee is trained on how to use 3E Online for chemical inventory and material safety data sheet maintenance.</td>
</tr>
<tr>
<td>5.4</td>
<td>Line Supervisor</td>
<td>Verify all Devon employees responsible for shipping of hazardous chemicals</td>
</tr>
</tbody>
</table>
have completed Hazardous Materials Shipping training.

6.0 REFERENCES

NFPA 704
American Coatings Association HMIS III
SafeBC - WHMIS The Basics
Controlled Products Act (Canada)
Appendix A - 3E Online Training Guide

Accessing 3E Online

- Go to [www.3eonline.com](http://www.3eonline.com)
- Enter the username (devonenergy) and password (Oklahoma) to enter the 3E Online Site

*When accessing 3E Online from within the Devon network, users will be directed straight to the home page (as shown on page 10).*
Appendix A - 3E Online Training Guide (Continued)

3E Online MSDS Tab

- Search for a specific MSDS in the catalog to view, email, or fax by selecting one of the links from the home page outlined below.
Appendix A - 3E Online Training Guide (Continued)

MSDS Search

Searching for an MSDS:

Step 1) From the horizontal menu bar, select: MSDS

OR

From the home page, select: Search for MSDS

*Both options are shown above.

Step 2) Click “Show All: to display all products available.

OR


a) Select a search criteria from the first drop down box:

- “Product name” = WD-40 Aerosol
  And/or
- “Manufacturer name” = WD-40 Company

*Multiple search criteria can be selected to help refine results.

b) Select one of the search methods from the second drop down box:

- Contains = “WD-40 Aerosol”
- Equals = “WD-40 Aerosol”
- Begins with = “WD-” All words beginning with these 3 characters will be suggested while typing out the rest of the product name.

c) Click “Search” to display search results.
Appendix A - 3E Online Training Guide (Continued)

MSDS Search Results
- Search results are populated and sorted alphabetically by product name.
- Re-sort results by clicking on a different column header.
- The total number of records found is displayed in the bottom right corner.
- To increase the volume of results displayed per page click on the drop-down selection box.
- To move to the next page of the search results, click the navigation arrows at the bottom of the page.
Appendix A - 3E Online Training Guide (Continued)

MSDS Viewing

- To view an MSDS for the product selected, click the document icon beside the product name.
- A pop-up menu will display all of the documents available for the product selected.
- Click either “View”, “Email”, or “Fax”.

![MSDS Viewing Image]
### Appendix B - Required Information Canadian Material Safety Data Sheets

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
<th>Column III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Category</td>
<td>Suggested Headings</td>
</tr>
<tr>
<td>1.</td>
<td>Hazardous</td>
<td>Hazardous Ingredients</td>
</tr>
<tr>
<td></td>
<td>Ingredients</td>
<td>(1) Information required by subparagraphs 13(a)(i) to (iv) of the Act</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) CAS registry number and product identification number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) LD&lt;sub&gt;50&lt;/sub&gt; (species and route)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) LC&lt;sub&gt;50&lt;/sub&gt; (species and route)</td>
</tr>
<tr>
<td>2.</td>
<td>Preparation</td>
<td>Preparation Information</td>
</tr>
<tr>
<td></td>
<td>Information</td>
<td>(1) Name and phone number of the group, department or party responsible for the preparation of the material safety data sheet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Date of preparation of the material safety data sheet</td>
</tr>
<tr>
<td>3.</td>
<td>Product</td>
<td>Product Information</td>
</tr>
<tr>
<td></td>
<td>Information</td>
<td>(1) Manufacturer’s name, street address, city, province, postal code and emergency telephone number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Supplier identifier, the supplier’s street address, city, province, postal code and emergency telephone number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Product identifier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Product use</td>
</tr>
<tr>
<td>4.</td>
<td>Physical</td>
<td>Physical Data</td>
</tr>
<tr>
<td></td>
<td>Data</td>
<td>(1) Physical state (i.e. gas, liquid or solid)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Odour and appearance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Odour threshold</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Specific gravity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) Vapour pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6) Vapour density</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7) Evaporation rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8) Boiling point</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(9) Freezing point</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(10) pH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(11) Coefficient of water/oil distribution</td>
</tr>
<tr>
<td>5.</td>
<td>Fire or Explosion</td>
<td>Fire or Explosion Hazard</td>
</tr>
<tr>
<td></td>
<td>Hazard</td>
<td>(1) Conditions of flammability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Means of extinction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Flash point and method of determination</td>
</tr>
</tbody>
</table>
### Hazard Communication Protocol

**Appendix B - Required Information Canadian Material Safety Data Sheets (Continued)**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Upper flammable limit</td>
</tr>
<tr>
<td>5.</td>
<td>Lower flammable limit</td>
</tr>
<tr>
<td>6.</td>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>7.</td>
<td>Hazardous combustion products</td>
</tr>
<tr>
<td>8.</td>
<td>Explosion data — sensitivity to mechanical impact</td>
</tr>
<tr>
<td>9.</td>
<td>Explosion data — sensitivity to static discharge</td>
</tr>
</tbody>
</table>

#### 6. Reactivity Data

- **Reactivity Data**
- (1) Conditions under which the product is chemically unstable
- (2) Name of any substance or class of substance with which the product is incompatible
- (3) Conditions of reactivity
- (4) Hazardous decomposition products

#### 7. Toxicological Properties

- **Toxicological Properties**
- (1) Route of entry, including skin contact, skin absorption, eye contact, inhalation and ingestion
- (2) Effects of acute exposure to product
- (3) Effects of chronic exposure to product
- (4) Exposure limits
- (5) Irritancy of product
- (6) Sensitization to product
- (7) Carcinogenicity
- (8) Reproductive toxicity
- (9) Teratogenicity
- (10) Mutagenicity
- (11) Name of toxicologically synergistic products

#### 8. Preventive Measures

- **Preventive Measures**
- (1) Personal protective equipment to be used
- (2) Specific engineering controls to be used
- (3) Procedures to be followed in case of leak or spill
- (4) Waste disposal
- (5) Handling procedures and equipment
- (6) Storage requirements
- (7) Special shipping information

#### 9. First Aid Measures

- **First Aid Measures**
- (1) Specific first aid measures
Appendix C - Required Information U.S. Material Safety Data Sheet

Each material safety data sheet will be in English (although the employer may maintain copies in other languages as well), and will contain at least the following information:

The name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

The identity used on the label, and, except as provided for in the trade secret section of the regulations:

- If the hazardous chemical is a single substance, its chemical and common name(s);
- If the hazardous chemical is a mixture which has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients which contribute to these known hazards, and the common name(s) of the mixture itself; or,
- If the hazardous chemical is a mixture which has not been tested as a whole:
  - The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise 1% or greater of the composition, except that chemicals identified as carcinogens under paragraph (d) of this section will be listed if the concentrations are 0.1% or greater; and,
  - The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit or American Congress of Governmental Industrial Hygienist (ACGIH) Threshold Limit Value, or could present a health risk to employees; and,
  - The chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture;
- Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);
- The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;
- The health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical;
- The primary route(s) of entry;
- The OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet, where available;
- Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Annual Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions), or by OSHA;
- Any generally applicable precautions for safe handling and use which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;
- Any generally applicable control measures which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;
Appendix C - Required Information U.S. Material Safety Data Sheet (Continued)

- Emergency and first aid procedures;
- The date of preparation of the material safety data sheet or the last change to it; and,

If no relevant information is found for any given category on the material safety data sheet, it will be marked to indicate that no applicable information was found.
Appendix D - Labeling Requirement Exceptions

The following chemicals do not require labeling:

- Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency.

- Any chemical substance or mixture as such terms are defined in the Toxic Substances Control Act (15 U.S.C. 2601 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency.

Appendix E - National Fire Protection Association Labeling

National Fire Protection Association “diamond” - the four divisions are color-coded, with blue indicating level of health hazard, red indicating flammability, yellow (chemical) reactivity, and white containing special codes for unique hazards. Each of health, flammability and reactivity is rated on a scale from 0 (no hazard; normal substance) to 4 (severe risk).

### HEALTH HAZARD

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Deadly</td>
</tr>
<tr>
<td>3</td>
<td>Extreme Danger</td>
</tr>
<tr>
<td>2</td>
<td>Hazardous</td>
</tr>
<tr>
<td>1</td>
<td>Slightly Hazardous</td>
</tr>
<tr>
<td>0</td>
<td>Normal Material</td>
</tr>
</tbody>
</table>

### FIRE HAZARD

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Flash Point Below 73(^\circ) F</td>
</tr>
<tr>
<td>3</td>
<td>Flash Point 100(^\circ) F</td>
</tr>
<tr>
<td>2</td>
<td>Flash Point From 100 to 200(^\circ) F</td>
</tr>
<tr>
<td>1</td>
<td>Flash Point Above 200(^\circ) F</td>
</tr>
<tr>
<td>0</td>
<td>Will Not Burn</td>
</tr>
</tbody>
</table>

### REACTIVITY

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>May Detonate</td>
</tr>
<tr>
<td>3</td>
<td>Shock and Heat May Detonate</td>
</tr>
<tr>
<td>2</td>
<td>Violent Chemical Change</td>
</tr>
<tr>
<td>1</td>
<td>Unstable if Heated</td>
</tr>
<tr>
<td>0</td>
<td>Stable</td>
</tr>
</tbody>
</table>

### SPECIFIC HAZARD

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidizer</td>
<td>OX</td>
<td></td>
</tr>
<tr>
<td>Acid</td>
<td>ACID</td>
<td></td>
</tr>
<tr>
<td>Alkali</td>
<td>ALK</td>
<td></td>
</tr>
<tr>
<td>Corrosive</td>
<td>COR</td>
<td></td>
</tr>
<tr>
<td>Use No Water</td>
<td>W</td>
<td></td>
</tr>
<tr>
<td>Radioactive</td>
<td>▼</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F - Hazardous Materials Identification System III Labeling

Hazardous Materials Identification System III - the four bars are color coded, with blue indicating the level of health hazard, red for flammability, orange for a physical hazard, and white for Personal Protection. The number ratings of health, flammability and physical hazard range from 0-4.

Blue/Health
4 - Life-threatening, major or permanent damage may result from single or repeated overexposures.
3 - Major injury likely unless prompt action is taken and medical treatment is given.
2 - Temporary or minor injury may occur.
1 - Irritation or minor reversible injury possible.
0 - No significant risk to health.

Red/Flammability
4 - Flammable gases, or very volatile flammable liquids with flash points below 73 °F, and boiling points below 100 °F. Materials may ignite spontaneously with air.
3 - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 °F and boiling points above 100 °F, as well as liquids with flash points between 73 °F and 100 °F.
2 - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 °F but below 200 °F.
1 - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 °F.
0 - Materials that will not burn.

Yellow/Physical Hazard
4 - Materials that are readily capable of explosive water reaction, detonation or explosive decomposition, polymerization, or self-reaction at normal temperature and pressure.
3 - Materials that may form explosive mixtures with water and are capable of detonation or explosive reaction in the presence of a strong initiating source. Materials may polymerize, decompose, self-react, or undergo other chemical change at normal temperature and pressure with moderate risk of explosion.
2 - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.
1 - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.
0 - Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.
**Appendix F - Hazardous Materials Identification System III Labeling (Continued)**

<table>
<thead>
<tr>
<th>Index</th>
<th>Required Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>B</td>
<td>Safety glasses and gloves</td>
</tr>
<tr>
<td>C</td>
<td>Safety glasses, gloves, and an apron</td>
</tr>
<tr>
<td>D</td>
<td>Face shield, gloves, and an apron</td>
</tr>
<tr>
<td>E</td>
<td>Safety glasses, gloves, and a dust respirator</td>
</tr>
<tr>
<td>F</td>
<td>Safety glasses, gloves, an apron, and a dust respirator</td>
</tr>
<tr>
<td>G</td>
<td>Safety glasses and a vapor respirator</td>
</tr>
<tr>
<td>H</td>
<td>Safety goggles, gloves, an apron, and a vapor respirator</td>
</tr>
<tr>
<td>I</td>
<td>Safety glasses, gloves, and a dust or vapor respirator</td>
</tr>
<tr>
<td>J</td>
<td>Splash goggles, gloves, an apron, and a dust or vapor respirator</td>
</tr>
<tr>
<td>K</td>
<td>Airline hood or mask, gloves, full suit, and boots</td>
</tr>
<tr>
<td>L-Z</td>
<td>Custom personal protective equipment specified by Line Supervisor</td>
</tr>
</tbody>
</table>

**Chemical Name**

- **HEALTH**
- **FLAMMABILITY**
- **PHYSICAL HAZARD**
- **PERSONAL PROTECTION**
## Appendix G - Workplace Labels - Canada

Workplace labels are required on containers of controlled products produced on site, and on secondary containers where the product has been transferred from the original container.

Workplace labels must contain the following information:
- Product name
- Safe handling procedures
- Reference to the MSDS

Workplace labels are applied to:
- Secondary containers
- Containers of products received in bulk
- Employer-produced products
- Containers with missing or illegible supplier labels

### Canadian Workplace Label Example

![Methanol Label Example](image-url)
Appendix H - Workplace Hazardous Materials Information System - Canada

The Workplace Hazardous Materials Information System (WHMIS) provides information about many hazardous materials used in the workplace. WHMIS calls these hazardous materials controlled products. The goal of WHMIS is to reduce injury and disease by communicating specific health and safety information about controlled products so that the information can be used to reduce exposure to hazardous materials. There are six hazard classes and eight hazard symbols that identify the specific hazards. (There are three symbols in Class D.) The eight hazard symbols identify the specific hazards of controlled products.

Class A  Compressed Gas

Class B  Flammable and Combustible Material

Class C  Oxidizing Material

Class D  Poisonous and Infectious Material

1. Materials Causing Immediate and Serious Toxic Effects

2. Materials Causing Other Toxic Effects
Hazard Communication Protocol

3. Biohazardous Infectious Material

Class E  Corrosive Material

Class F  Dangerously Reactive Material

The WHIMS Labels are required to have a hashed border around the edge of the information, like the example below.
Attachment B - Hazardous Chemical Inventory Archive and Review Form

<table>
<thead>
<tr>
<th>Name of Workplace:</th>
<th>Date:</th>
<th>Responsible Employee:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Document Supplier</th>
<th>3E Document Reference Number</th>
<th>Archive Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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</tr>
<tr>
<td>3</td>
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<td></td>
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<tr>
<td>4</td>
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<tr>
<td>5</td>
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<td>6</td>
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<td>9</td>
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<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please check the applicable box below:

- [ ] I have reviewed the chemical inventory. No chemicals need to be archived at this time.
- [ ] I have reviewed the chemical inventory and listed the chemical(s) that are no longer at this site on the archive form above.

Print Name: ____________________________________________

Signature: ____________________________________________ Date: ____________________________

Form # COR-0355-PR
Form Retention: 30 years