Introduction

The International Building and Fire Codes require you to provide a Hazardous Materials Inventory Statement (HMIS), so that building and fire plan reviewers can determine what code provisions apply to your project.[1] Without the HMIS, the Puget Sound Regional Fire Authority ("RFA") can't review your plans. Also, the HMIS will assist Fire Inspectors to ensure that your business is in compliance with the International Fire Code.

These instructions will provide the "RFA" with a simple HMIS, which will be used as a preliminary screening tool. Depending on your situation, it is possible a more detailed HMIS will be required. Factors that could necessitate the detailed HMIS include:

1. Quantity of hazardous material
2. Multiple storage and use locations in a building or outside
3. Types of hazardous materials
4. Lack of a fire sprinkler system

If a detailed HMIS is needed, you will be required to obtain the services of a third party technical expert.[2] We have found this saves time and prevents frustration for you and "RFA" plan reviewers. The "RFA" has a list of qualified third parties, or you can submit the name of a third-party expert for review and approval by the "RFA". At a minimum, this expert shall be certified in the International Fire Code by the International Code Council.

HMIS Reporting Spreadsheet

Please download and open the "HMIS Reporting Spreadsheet" located here.

Company Information Tab

Please complete the Company Information.

HMIS Inventory Tab

Next, complete the HMIS Inventory.

Here are the steps to complete the inventory:

1. Obtain Safety Data Sheets (SDS) for all of your chemicals.

2. In Column 1 of the inventory report, list the name of each product. *(Examples of generic chemicals or products are in Red, and trade named products in Green)*

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[1] IBC 414.1.3
[2] IBC 414.1.3

3. In Column 2, the C.A.S. Number(s) must be listed. This should be listed in Section 2 of the MSDS or Section 3 of an SDS. For common chemicals/products such as Gasoline, you may list the common CAS number. For products with trade names you must list all the different component chemicals and their CAS numbers. List them in order from most to least concentration. If there are many (more than 5) list only the top five components by concentration. See the examples provided on the form.

4. In Column 3, fill in the storage location as either the word "**IN**" for inside or the word "**OUT**" for outside.

5. In Column 4, enter the letter **X** if the product container or tank is greater than 55 gallons.

You will now start determining the products Hazard Classes. We have provided the Hazard Classes of many common products. This information can be found on the Common Classifications Tab within this spreadsheet.

You will use a SDS to classify your chemical or product. If you don't have a SDS contact your supplier or manufacturer and request one.

6. Using section 9 of your SDS, select one of the 8 following classifications and enter the value into Column 5.

    1. Flash point less than 73 deg F, and a boiling point less than 100 deg F = **F1A**.

    2. Flash point less than 73 deg F and a boiling point that is equal to or greater than 100 deg F = **F1B**.

    3. Flash point that is equal to or greater than 73 deg F and less than 100 deg F = **F1C**.

    4. Flash point equal to or greater than 100 deg F and less than 140 deg F = **C2**.

    5. Flash point equal to or greater than 140 deg F and less than 200 deg F = **C3A**.

    6. Flash points equal to or greater than 200 deg F = **C3B**.

    7. Flammable gas = **FLG**.

    8. Flammable solid, Ignition temperature less than 212ºF = **FLS**.

7. Using section 10 of your SDS, if it identifies the product as strongly reactive with water enter **WR2**. If it identifies that the product will react explosively with water enter **WR3**. Enter these values into Column 6.

8. Using section 8 of your SDS, if it identifies the product as a strong oxidizer, enter **OX2**. If it identifies the product as an oxidizing gas, enter **OXG**. Enter these values into Column 7.

9. Using section 10 of your SDS, if it identifies the product can spontaneously decompose giving off heat, toxic or flammable gas, enter **UR2**. Enter these values into Column 8.

10. Using section 2 of your SDS, if it identifies the product as corrosive, caustic, or can burn or cause damage to skin or eyes, enter **COR**. Enter the value into Column 9.

11. Using section 11 of your SDS, determine if the product is toxic (TX) or highly toxic (HTX) based on one of the following classifications. Enter the value into Column 10.

> 1. If the product meets one of following, it is considered toxic.
>
>> a. A chemical that has a median lethal dose (LD50) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
>> b. A chemical that has a median lethal dose (LD50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
>> c. A chemical that has a median lethal concentration (LC50) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.
>
> 2. If the product meets one of following, it is considered highly toxic.
>
>> a. A chemical that has a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
>> b. A chemical that has a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
>> c. A chemical that has a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

12. Using sections 1-3 of your SDS, if the product is identified as an organic peroxide select one of the following classifications. Enter this value into Column 11.

> 1. **OP** "Organic Peroxide"
> 2. **OP1** Class I. Describes those formulations that are capable of deflagration but not detonation.

3. **OP2** Class II. Describes those formulations that burn very rapidly and that pose a moderate reactivity hazard.
4. **OP3** Class III. Describes those formulations that burn rapidly and that pose a moderate reactivity hazard.
5. **OP4** Class IV. Describes those formulations that burn in the same manner as ordinary combustibles and that pose a minimal reactivity hazard.
6. **OP5** Class V. Describes those formulations that burn with less intensity than ordinary combustibles or do not sustain combustion and that pose no reactivity hazard.
7. **UD** Unclassified detonable. Organic peroxides that are capable of detonation. These peroxides pose an extremely high-explosion hazard through rapid explosive decomposition.

13. If the product doesn't fit any of the above classifications, enter **NR** (Not Regulated). Enter this value into Column 12.

14. Enter the Flash Point, Boiling Point, LD50, LC50 into Column 13.

15. In Columns 14-16 enter the quantity of the product stored at your facility. *If you buy gas products by the pound, your supplier can help you obtain the cubic feet.*

16. Remove the red and green examples from your Inventory.

Save this file as "Your Company Name Here – HMIS Inventory"

Summary Report Tab

1. Enter the total amount of level 2 or 3 aerosols which you store. Enter the value under the Solids heading.

2. Total the amount of each hazard class on the HMIS Inventory Tab by the physical state.

   Example: If you have 10 products that are classified as either F1B or F1C and they total 95 gallons. Please see example table entry below.

IBC/IFC HAZARD CLASS	HAZARD CLASS	INVENTORY AMOUNT		
	(Abbrev)	Solid (lb)	Liquid (gal)	Gas (cu ft)
Flammable Liquid	F1B & F1C		95	

3. Some products will add to the totals of more than one hazard class. For instance, sulfuric acid 90% is classified as water reactive, corrosive and toxic. As a result, it will add to the total amount of water reactive products, corrosive products, and toxic products.

4. Fill in the inventory amount for each of the hazard classes you have on your HMIS Inventory Report.

Save the file.

HMIS Submittal

Email the completed spreadsheet to FirePrevention@PugetSoundFire.org.

<u>Please include your Fi re Ins pec tor's nam e i n the em ail</u> (It's listed on your Inspection Notice); this will ensure a timely response.

Please fill in the email subject line as "HMIS – Your Company Name".

If you have any questions, please contact us at 253-856-4400