TIER TWO
EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

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WHAT IS THE TIER TWO REPORT?

- A report required under SARA Title III Section 312 of
- Hazardous substances at a facility that are above the threshold,
- Submitted annually to state and local officials, and
- Made available to the public upon request.

WHO MUST REPORT?

- The owner or operator of a facility
- If required under OSHA to prepare or have available MSDSs for hazardous substances present at the facility,
- If exemptions do not apply,
- And IF the threshold amount or more of a hazardous substance was present at the facility at any time during the past calendar year.

OWNER OR OPERATOR

The report is the responsibility of whomever must maintain the MSDS for the hazardous material.

HAZARDOUS SUBSTANCES

- Hazardous Substances = all substances for which OSHA requires an MSDS.
- There is NO LIST of these “OSHA” hazardous substances.

All Substances covered by SARA Title III

- OSHA: Tier Two
- CERCLA: Release Report
- TOXIC: TRI

OSHA Hazardous (MSDS required)

CERCLA & EHS & TOXIC are in the List of Lists
1. OSHA defines hazardous substance as any substance that is a physical hazard or a health hazard. (Pg. 3-4 for description)

2. OSHA requires that MSDSs be maintained for each hazardous substance.

3. Water can have an MSDS, but it is not required by OSHA.

4. OSHA does not require an MSDS for Hazardous Waste that is subject to RCRA.

Some OSHA hazardous substances do not have to be reported on the Tier Two report.

Pg. 3-5: “What Chemicals Are Excluded?”

Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.

Situation:
A facility purchases sheet metal to manufacture its final product. MSDS is required. Is it exempt?

Sheet metal as purchased is a manufactured item. There is no potential for exposure to the solid metal. Sheet metal in process is no longer a manufactured item.
Tier Two

**EXEMPTIONS**

**Example: Sheet Metal**

EPA’s interpretation published July 2010 says that only the fumes or dust emitted when the solid is being modified need to be counted toward the Tier Two reporting threshold.

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Section 312 (Tier Two) Exemptions do **NOT** apply to:

- Section 302: Emergency Planning & Notification Requirements
- Section 304: Hazardous Substance Release Notifications

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**TIER TWO THRESHOLD**

The amount on site at any given time in storage and in process.

- Threshold for “OSHA” hazardous substances = 10,000 pounds.

Gallons must be converted to pounds.  
*Formula on Pg. 3-5*

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**GALLONS TO POUNDS FORMULA FOR CONVERSION**

Specific Gravity (Relative Density) from MSDS  
X  
Weight of Water (8.34 lbs per gal)  
=  
Pounds per gallon of substance

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**GALLONS TO POUNDS CONVERSION TEST YOUR UNDERSTANDING**

1600 gallons of gasoline

*From MSDS (Pg. 6-19):*
Specific gravity = __________

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**GALLONS TO POUNDS CONVERSION ANSWER**

Calculate lb/gal of gasoline  
0.75 x 8.34 lb/gal wtr = __________

Total weight of gasoline =  
6.3 lb/gal x 1600 gal = __________
**Tier Two Report**

**Tier Two Threshold**

**Retail Gas Station Thresholds**
- **Gasoline** = 75,000 gallons if all stored in compliant USTs
- **Diesel fuel** = 100,000 gallons if all stored in compliant USTs

UST = underground storage tank

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**Tier Two Threshold**

**Retail Gas Station Thresholds**

10,000 pound threshold applies to:
- E-85 and other Alternative fuels (except gasohol with ≤10% ethanol)
- Aviation fuel
- Heating fuel
- Kerosene
- Propane

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**Tier Two Threshold**

**Threshold for Extremely Hazardous Substances (EHS)** = the lower of:
- 500 pounds or
- Threshold planning quantity (TPQ)

EHSs and TPQs are listed

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**Tier Two Threshold**

**Extremely Hazardous Substances (EHS)**

Aggregate all occurrences of an EHS to determine if threshold is met.

Pure form + mixture components* = total EHS

* If ≥ 1% of mixture, or ≥ 0.1% if carcinogen

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**Tier Two**

**Extremely Hazardous Substances (EHS)**

**Example**

Sulfuric Acid

EHS = yes/no?

TPQ = ______

Tier Two reporting threshold = ______

**Sulfuric Acid in Inventory**

- 6 fork lifts with large lead-acid batteries
- 55 gal drum pure Sulfuric Acid

Total lbs Sulfuric Acid = ?
**MSDS: Sulfuric Acid 66°Be**

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES:**

- **FLASH POINT:** NA
- **BOILING POINT:** ~ 529°F
- **MELTING POINT:** ~ -26°F
- **VAPOR PRESSURE (mm Hg):** < 0.002
- **EVAPORATION RATE (N-BUTYL ACETATE=1):** <1
- **SPECIFIC GRAVITY (WATER=1):** ~1.84
- **APPEARANCE:** Colorless to light yellow liquid
- **ODOR / TASTE:** Odorless
- **SOLUBILITY IN WATER:** Complete
- **pH at 25°C:** < 1
- **VISCOSITY:** ND

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**EXTREMELY HAZARDOUS SUBSTANCES (EHS)**

**55 gallon drum of pure sulfuric acid**

Specific gravity (from MSDS) = ________

\[ \times \frac{\text{weight of water}}{\text{weight of water}} = \]______ lb/gal sulfuric acid

55 gal x ____ lb/gal = ____ lbs sulfuric acid

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**Many MSDSs for Batteries are Misleading**

**Lead-acid Batteries. Use caution if consulting the MSDS...**

- Many MSDSs for batteries list a percentage of "sulfuric acid" when they mean "battery acid"
- **Battery Acid (aka Electrolyte) is a mixture of sulfuric acid and water**

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**TIER TWO EXTREMELY HAZARDOUS SUBSTANCES (EHS)**

**Lead-acid Batteries**

Approximate Calculation based on total battery weight

- 2/3 battery weight = Lead
- 1/3 battery weight = battery acid
- 1/3 battery acid weight = Sulfuric Acid
- 1/9 battery weight = Sulfuric Acid

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**TIER TWO EXTREMELY HAZARDOUS SUBSTANCES (EHS)**

- 6 Batteries
- **Each Battery Weighs 600 pounds**
- **How many pounds of Sulfuric Acid are in the batteries?**

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**TIER TWO EXTREMELY HAZARDOUS SUBSTANCES (EHS)**

**SULFURIC ACID IN BATTERIES**

Total weight of batteries=

Battery Acid ≈

Sulfuric Acid ≈
 Tier Two Report

EXTREMELY HAZARDOUS SUBSTANCES (EHS)

TOTAL SULFURIC ACID

___ lbs in the batteries
+ ___ lbs pure
___ lbs total

Required Reporting for 1244 lbs of Sulfuric Acid?

Tier Two -
• Because ≥ ____

Emergency Planning Notification (Section 302)
• Because ≥ __________

TIER TWO
THRESHOLD

The threshold for reporting in response to requests is zero

Requests can be made by the SERC, LEPC, Fire Dept with jurisdiction over facility

Tier Two
RECAP...

• The owner or operator reports
• hazardous substances according to OSHA
• if exemptions do not apply,
• and IF the threshold amount is ever on site.

Simplified thought process...

1. Is it hazardous? (OSHA MSDS)
   • No: not subject to reporting
   • Yes: go to question 2

2. Is it an EHS? (Appendix A)
   • No: threshold is 10,000 lbs
   • Yes: threshold is TPQ or 500 lbs

OSHA Hazardous Substance threshold = 10,000 pounds

Extremely Hazardous Substance threshold = 500 pounds or TPQ (whichever is lower)

Retail Gas Stations are special ...
So are Requests ...

Michigan SARA Title III Program
TEST YOUR UNDERSTANDING

What is the Tier Two reporting threshold for...

- Nitric acid? __________
- Chlorine? __________
- Hydrochloric Acid? __________
- Water? ______________
- Propane? _____________

REPORT DUE DATES

Tier Two annual hazardous chemical inventory due MARCH 1ST.

Section 311 initial hazardous chemical inventory due within 3 months after threshold reached.

See Pg. 1-8 for all SARA Title III report due dates.

ONLINE REPORTING

Tier II Manager™

Off-the-shelf program customized for Michigan.

In 2012, program will be rewritten on a new platform. Expect improved reporting process for 2013!

All facility reports must be entered in this online program.

TIER II MANAGER™

3 reports submitted in the program:

1. Section 312 Tier Two (update as needed; submit annually)
2. Section 311 Initial Hazardous Chemical Inventory (as applicable)
3. Section 302 Emergency Planning Notification (update & recertify as needed)

TIER II MANAGER™

3 modules:

1. Submit – Reporters
2. Planning/Response – LEPCs & Fire Depts (Ingham, Kent, Oakland, Ottawa & Wayne Counties)
3. Administration – Susan & Tonya

If you “do not have sufficient access rights,” you are in the wrong module.

Each reporter should have only ONE account.

Username = SARA00001
Username = SARA01011
A Facility can be assigned to only ONE account.

The Administrator can move a facility from one account to another.

Username = SARA00001
Username = SARA01011

ACCESS THE PROGRAM

Access Tier II Manager™
www.michigan.gov/sara

SARA Title III Hazardous Chemical Inventory

Click on the “big brown button”

FORGOT PASSWORD?

If you have not already registered, you must register your company before using this Online Reporting System.

Register Now

Click on the “big brown button”

FORGOT USERNAME?

Contact the Administrator if:

- You do not know your username.
- You are taking over the reporting responsibilities from someone else.

NEW USER?

REGISTER NOW if
1. You have never been in the program, AND
2. No SARA Title III reports* have ever been submitted to the DEQ for any of your facilities.

Not sure? Contact the Administrator!

*Tier Two, Section 302, or Section 311

Welcome Page (Instructions)

Site Map on Pg 3-13

Welcome to the Michigan SARA Title III Program Tier Two Reporting system.
Main Menu

Your Facility List

If the facility list is not correct... Contact the Administrator - She can move facilities from one user account to another.

Main Menu

Keep User Info Current

Main Menu

Select a Facility

Submissions Listing

312 (Tier II)

302 Reports

311 Reports

Submissions Listing page

Edit current year

Your part is complete. Open certified report as a pdf.
Tier Two Report

Facility Home Page

Step 1: Update Facility Info

Step 2: Update Chemical Info

Step 3 Optional: Add or Remove Maps & Plans at any time

Step 4: Submit

Add Notes Before You Submit

Facility Details Shortcuts

Owner/Operator Mailing Address

If you enter an address outside of the US or Canada, enter "Unknown" in the City field.

Name: Robert Jackson

Country: United States

Owner Address:

City: Lansing

State: Michigan

Zip Code: 48909

Open pdf file with current data - not a certified report.
**STEP 1**

**Resources tab (all pgs)**

- Lat-Long & NAICS Codes

1. Details of the Tier Two and MSDS reporting requirements
   - [Hazardous Chemical Inventory Reporting - Sections 311 & 312](#)
2. Michigan SARA Tier II Program
3. [Look up 2007 NAICS codes](#)
4. [Resource Links](#)

**STEP 1**

**Geocode your facility**

- [Latitude: ]
- [Longitude: ]

Latitude and Longitude must be in Decimal Degrees.

**STEP 2**

**Search Chemical to find CAS Number**

- [Chemical Name: ]
- [CAS Number: ]
- [Search CAS]

The chemical list is for lookup purposes only. It is not a complete, verified chemical list. If you find a discrepancy between your MSDS and the chemical list, please note that number before uploading. Chemicals with the same CAS number may appear several times since they are known by several names.

**Adding an EHS**

- [Chemical Description: ]
- [Physical and Health Hazards: ]
  - [Check all that apply: ]
    - [Search by CAS / Chemical Name]
    - [Select Chemical from 302/311]
    - [Chemical Name: AMMONIA (ANHYDROUS)]
    - [CAS Number: 7664-41-7]
    - [Trade Secret: ]
    - [EHS: ]
    - [EHS Name: ]
    - [Contains EHS]
Verification required when chemical might be an EHS

Verify Chemical

Confirm whether Main Chemical is an EHS:

CAS Number: 76444-17
Chemical Name: AMMONIA (ANHYDROUS)
EHS Name: AMMONIA

Please confirm whether the chemical is an EHS or not. If the chemical is an EHS, check the 'Check if EHS' box and click 'Save'. If the chemical is not an EHS, just click 'Save' to proceed.

Check If EHS

Save

Verification required when EHS has 2 TPQ values

Verify Chemical

Main Chemical with split TPQ values:

CAS Number: 1333-19
Chemical Name: HYDROQUINONE
EHS Name: HYDROQUINONE

Maximum Amount: 1000

You have entered an EHS chemical which has split TPQ values for the Threshold Planning Quantity. Do you have this substance present in the form of a fine powder, a liquid, or in solution? If your answer is Yes, click the Check if Yes box and click Save. If your answer is No, continue by clicking Save.

Check If Yes

Save

STEP 2

Mixture Example – Pg 3-21

Chemical Description

Physical and
Health Hazards

Inventory

Search by CAS / Chemical Name
OR Select Chemical from 000/31

CAS Number: 123456
Chemical Name: EXAMPLE CHEM
Trade Name: X
EHS: Contains EHS
EHS Name: EXAMPLE EHS

Add mixture components

Check all that apply:

Pure [ ] Mix [ ] Solid [ ] Liquid [ ] Gas

Add Mixture Components

STEP 2

Add Mixture Components

Search by CAS Number

Chemical Description

Physical and Health Hazards

Inventory

Chemical Name: LEAD-ACID BATTERIES
Trade Secret: [ ]
EHS: Contains EHS
EHS Name: EXAMPLE EHS

Add mixture components

Add Mixture Components

STEP 2

Attach MSDS only if substance is uncommon

Check all that apply:

Pure [ ] Mix [ ] Solid [ ] Liquid [ ] Gas

MSDS Submission

MSDS File: Uploaded

Upload MSDS

STEP 2

Confidential Storage Location

Storage Codes & Locations

Storage Location information must be entered

Container Type
Pressure Temperature Location

Confidential Location

N 1 4 BLDG 14, NE CORNER

Check the box for BLDG 14, NE CORNER
STEP 3
Attachments can be Confidential

STEP 4
The User can enter the name of the person certifying the report.

STEP 1
Facility No Longer Required to Report?

Inactive facilities not shown on Main Menu facility list

Submissions Listing Page
Add or Edit sect 302 Report
Select Chemical from Tier Two Report

Returns EHSs ≥ TPQ from Tier Two report

Select chemicals and edit if needed (Pg 2-2)

Submissions Listing Page Add sect 311 Report for NEW Chemicals

311 is for chemicals not already on the Tier Two report

TIER TWO REPORT

QUESTIONS?
MICHIGAN SARA TITLE III PROGRAM
517-373-8481
www.michigan.gov/sara
deq-sara@michigan.gov
(New email)