TIER II REPORTING
MICHIGAN SARA TITLE III PROGRAM

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ASK THE FOLLOWING QUESTIONS CONCERNING YOUR FACILITY AND TIER II REPORTING?

- Are you storing a large amount of a material that requires a Safety Data Sheet?
- Are you storing an Extremely Hazardous Substance (See EPA's List of Lists and your SDS)?
- Does your facility use large equipment like forklifts or high-lows that require large sulfuric acid batteries?
- Do you have large storage vessels or containers onsite?
- Has your facility reported in the past?

HOW DO YOU DETERMINE IF YOUR FACILITY NEEDS TO SUBMIT A TIER II REPORT?

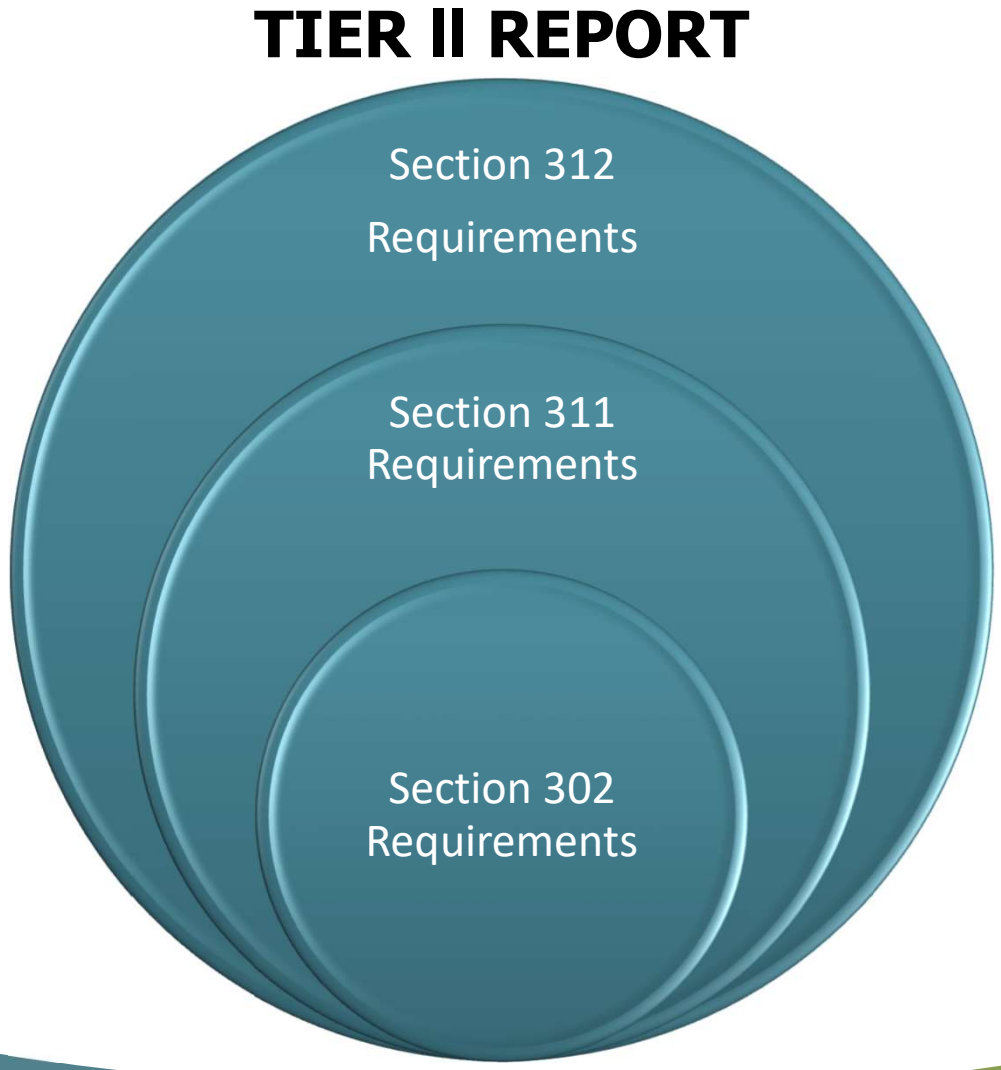
- Do a through inventory of your chemical storage.
- Convert all of your chemical volumes and weights into pounds to determine if you are above reporting thresholds.
- Review the SARA Title III – Tier II Requirements and consult the EPA's List of List

TIER II REPORTING?

Tier ll Reporting in Michigan includes all the data elements for the following SARA Title III components:

- **Section 302**, Extremely Hazardous Substances Report.
- **Section 311**, Initial Report of hazardous chemicals (sometimes called the SDS report).
- **Section 312**, Tier II Annual Report of hazardous chemicals.

TIER II REPORTS IN MICHIGAN INCLUDE ALL THE FOLLOWING REQUIREMENTS



TIER II REPORTING

Annual Tier ll Reports are due:

- January 1st thru March 1st every year if your facility is storing hazardous and\or extremely hazardous materials above regulatory thresholds.

Update Tier ll Reports (also called initial or SDS reports) are due:

- Whenever a new chemical has been added to your facility above regulatory threshold or if a significant change has occurred (i.e. name change, emergency contact change, remove chemicals etc.)

TIER II REPORTING

CHEMICAL CATEGORIES:

There are two chemical categories when evaluating whether to do Tier ll Reporting

- **Hazardous Chemicals** – Chemicals that have a SDS (SARA Title lll Components 311 and 312)
- **Extremely Hazardous Chemicals** – Chemicals that are listed in EPA's List of Lists and have a Threshold planning Quantity or TPQ (SARA Title lll Component 302, 311 and 312)

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SARA TITLE III - TIER II REPORTING

COMPONENTS AND CHEMICALS

✓ Hazardous Chemical Inventory
Sections 311 & 312 ←

- Emergency Planning & Extremely Hazardous Substances
Section 302

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HAZARDOUS SUBSTANCES

Hazardous Chemical Inventory - Sections 311 & 312

- OSHA defines hazardous substance as any substance that has a physical or a health hazard. (Pg. 3-3 for description)
- OSHA requires that a Safety Data Sheet (SDS) be maintained for each hazardous substance.
- OSHA does not require a SDS for Hazardous Waste. It is advised that you report it!!!
- Petroleum distillates are hazardous. Regardless of what is stated on the SDS, if a product contains petroleum distillates, it must be reported if its above thresholds.

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HAZARDOUS SUBSTANCES?

Hazardous Chemical Inventory SARA Title lll - Sections 311 & 312

- There is NO LIST of these "OSHA" hazardous substances.

HAZARDOUS SUBSTANCES THRESHOLDS

Hazardous Chemical Inventory SARA Title lll - Sections 311 & 312

Thresholds for Tier ll reporting:

- OSHA hazardous substances = 10,000 pounds

  Largest amount on site at any <u>one time</u> during the previous calendar year in <u>storage and in process</u>.

- Requests by LEPC/Fire Dept. = zero pounds

Note: If you are storing 500 pound or more of an EHS under Section 311 and 312 of SARA Title lll it needs to be reported on a Tier ll Report (see Thresholds for EHS slides)

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SARA TITLE III – TIER II REPORTING

COMPONENTS AND CHEMICALS

- Hazardous Chemical Inventory
  Sections 311 & 312

✓ Emergency Planning & Extremely Hazardous Substances

➔ Section 302, 311 & 312

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EXTREMELY HAZARDOUS SUBSTANCES

- Extremely Hazardous Substances (EHS)
  Includes any chemicals or hazardous substances identified by the Environmental Protection Agency (EPA) on the basis of hazard or toxicity and posted in either the Extremely Hazardous Substance List (Appendix A of your guidebook) or U.S. EPA's List of Lists (Appendix B of your guidebook).

EXTREMELY HAZARDOUS SUBSTANCES THRESHOLDS

SARA Title lll - Section 302, 311 and 312

Thresholds for Tier ll reporting:

- An Extremely Hazardous Substance (EHS) stored at or above the listed Threshold Planning Quantity (TPQ). Check EPA's List of Lists.

- 500 pounds or more of an EHS under Sections 311 and 312 of SARA Title lll

EXTREMELY HAZARDOUS SUBSTANCES THRESHOLDS

SARA Title lll - Section 302

Thresholds for Tier ll reporting:

- If you are at or above Threshold Planning Quantities for Extremely Hazardous Substances, you are also subject to emergency planning requirements in SARA Title lll and must submit an emergency response plan to your local fire department and LEPC.

EXTREMELY HAZARDOUS SUBSTANCES THRESHOLDS

SARA Title lll Section 302

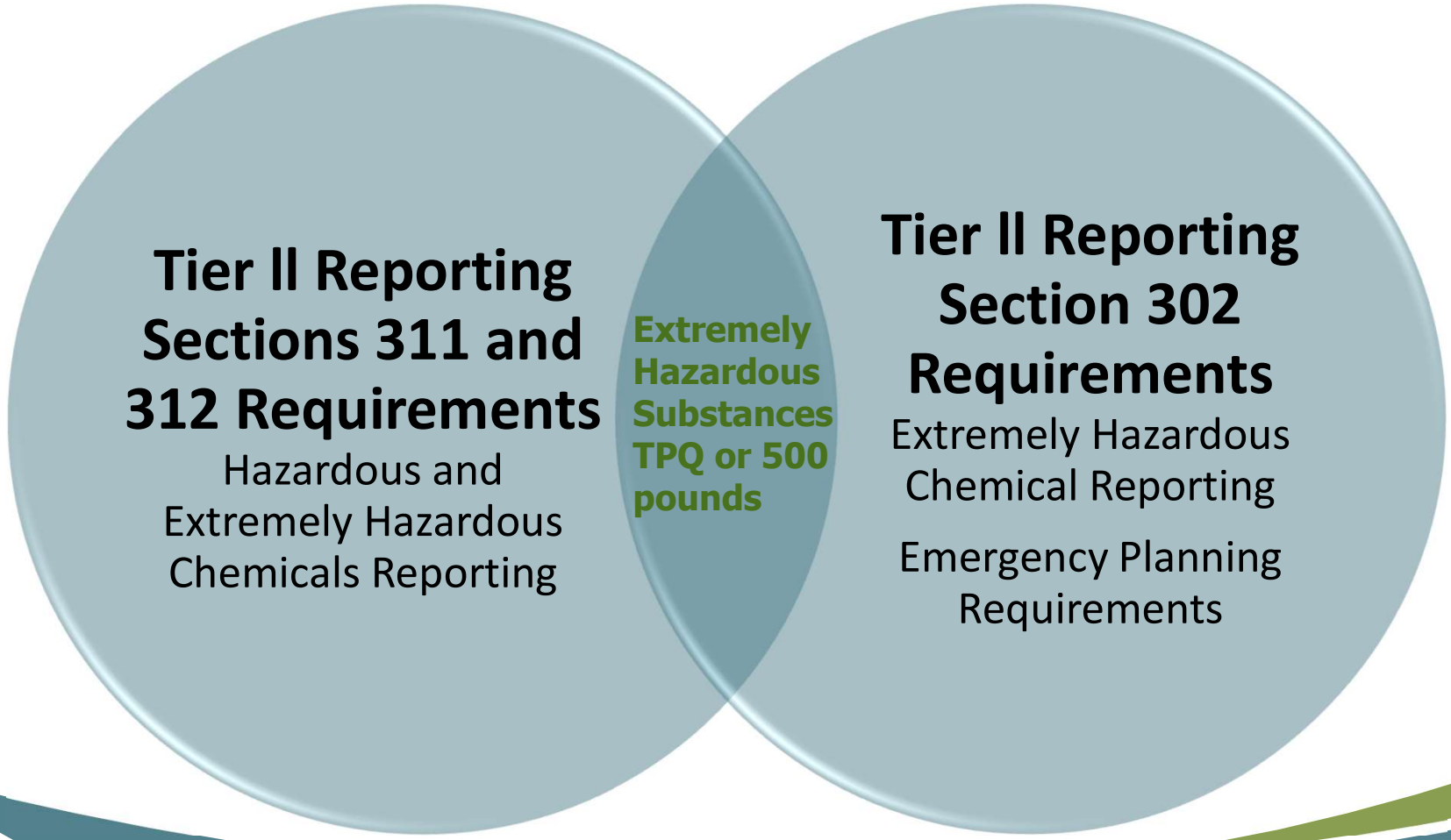
Aggregate all occurrences of an EHS to determine if threshold is met. The Tier ll Manager program will also do this for you.

Pure form + mixture components* = total EHS

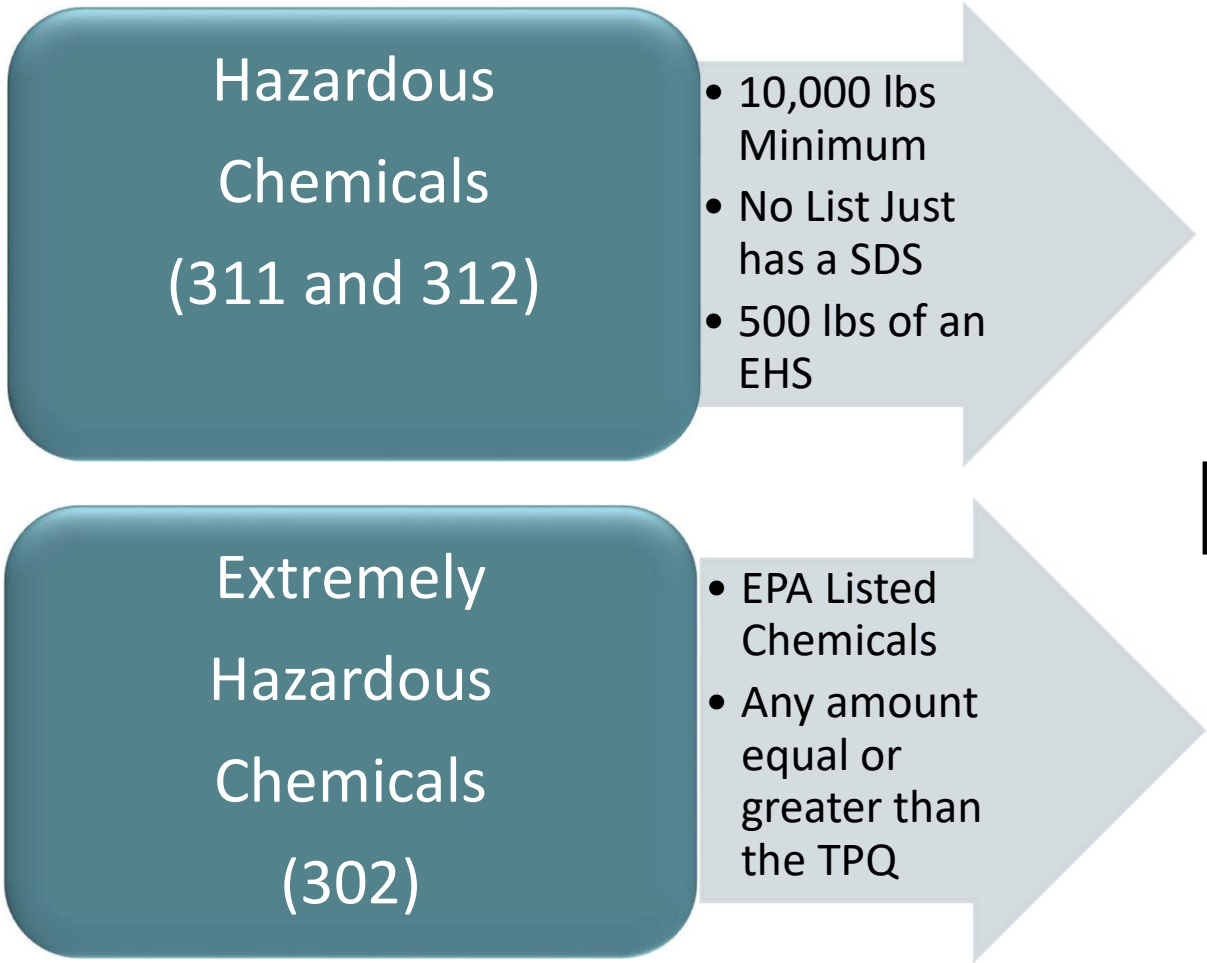
* If ≥ 1% of mixture, or ≥ 0.1% if carcinogen

This is the total amount of an EHS present at any one time at a facility (in storage and in process) at concentrations greater than one percent (1%) by weight, regardless of location, number of containers, or method of storage.

TIER II REPORTING OVERLAP



TIER II REPORTING CHEMICAL CATEGORIES AND THRESHOLDS



TIER II Reporting

SPECIAL CALCULATIONS FOR NON-REACTIVE SOLID EHSs

If the EHS is in:

- **Powder** form (particle size less than 100 microns),
- **Solution** form, or
- **Molten** form,

Note: compare to the lower TPQ value. Otherwise, compare the solid form (particle size ≥ 100 microns) to the higher TPQ value of 10,000 pounds.

SPECIAL CALCULATIONS FOR NON-REACTIVE SOLID EHSs

APPENDIX A: SARA Title III Extremely Hazardous Substances

SARA Title III
EXTREMELY HAZARDOUS SUBSTANCES

CAS	EHS NAME	TPQ*
108054	Acetic acid ethenyl ester	1,000
75865	Acetone cyanohydrin	1,000
1752303	Acetone thiosemicarbazide	1,000/10,000
107028	Acrolein	500
79061	Acrylamide	1,000/10,000
107131	Acrylonitrile	10,000
814686	Acrylyl chloride	100
111693	Adiponitrile	1,000
116063	Aldicarb	100/10,000
309002	Aldrin	500/10,000
107186	Allyl alcohol	1,000
107119	Allylamine	500
20859738	Aluminum phosphide	500
2763964	5-(Aminomethyl)-3-isoxazolol	500/10,000
54626	Aminopterin	500/10,000
504245	4-Aminopyridine	500/10,000
78535	Amiton	500
3734972	Amiton oxalate	100/10,000
7664417	Ammonia	500
300629	Amphetamine	1,000
62533	Aniline	1,000

CAS	EHS NAME	TPQ*
534076	Bis(chloromethyl) ketone	10/10,000
4044659	Bitoscanate	500/10,000
10294345	Borane, trichloro-	500
7637072	Borane, trifluoro-	500
10294345	Boron trichloride	500
7637072	Boron trifluoride	500
353424	Boron trifluoride compound with methyl ether (1:1)	1,000
353424	Boron, trifluoro[oxybis[methane]]-, (T-4)-	1,000
28772567	Bromadiolone	100/10,000
7726956	Bromine	500
74839	Bromomethane	1,000
4170303	2-Butenal	1,000
123739	2-Butenal, (e)-	1,000
1306190	Cadmium oxide	100/10,000
2223930	Cadmium stearate	1,000/10,000
7778441	Calcium arsenate	500/10,000
8001352	Camphechlor	500/10,000
8001352	Camphene, octachloro-	500/10,000
56257	Cantharidin	100/10,000
51832	Carbachol chloride	500/10,000

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SPECIAL CALCULATIONS FOR NON-REACTIVE SOLID EHSs

For emergency planning determination, there is an additional calculation for solids in solution and in molten form that is applied before comparing to the TPQ. *There are 157 EHSs on the list in Appendix A that have two TPQ values.*

- If the EHS is in solution, multiply the amount of the EHS by 0.2 and compare to the lower TPQ.
- If the EHS is in molten form, multiply the amount of the EHS by 0.3 and compare to the lower TPQ.

These calculations are ONLY used for the Section 302 emergency planning determinations.

ALL SUBSTANCES COVERED BY SARA TITLE III

CERCLA, EHSs & TOXIC are in the List of Lists

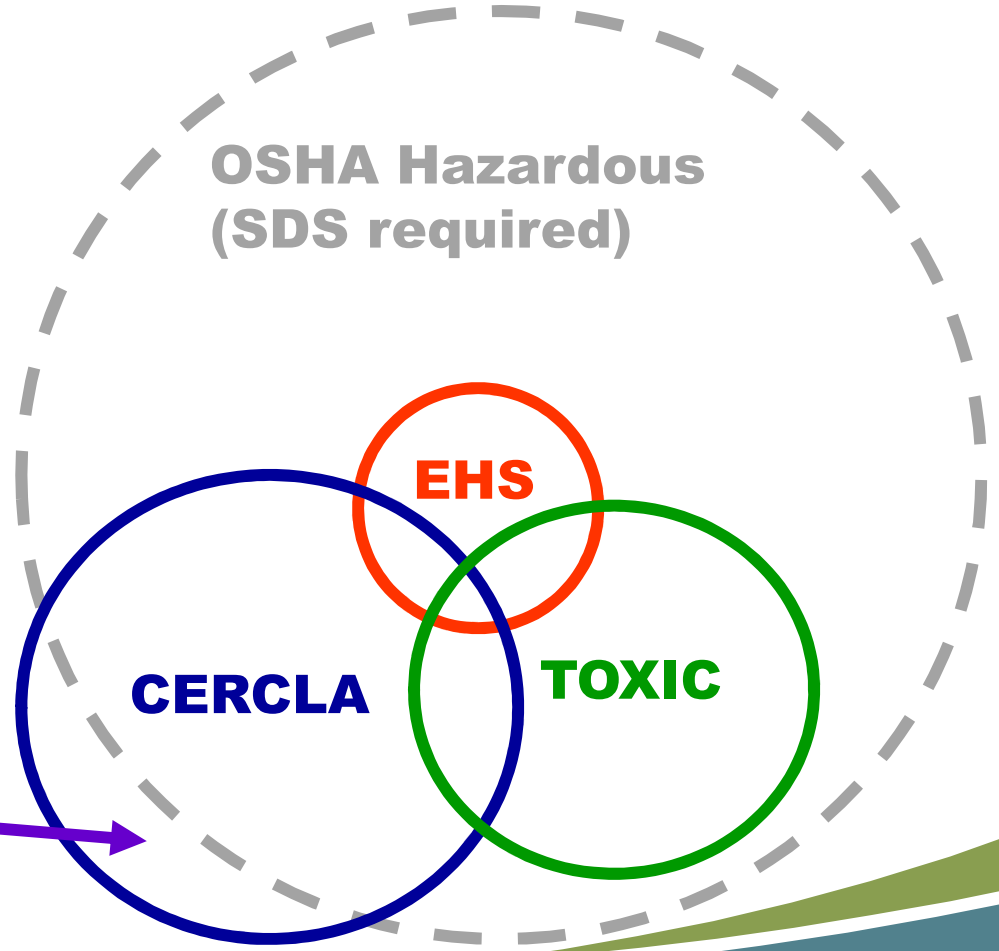
OSHA: Tier II

EHS: Emergency Plan & Release Report

CERCLA: Release Report

TOXIC: TRI

RCRA hazardous waste



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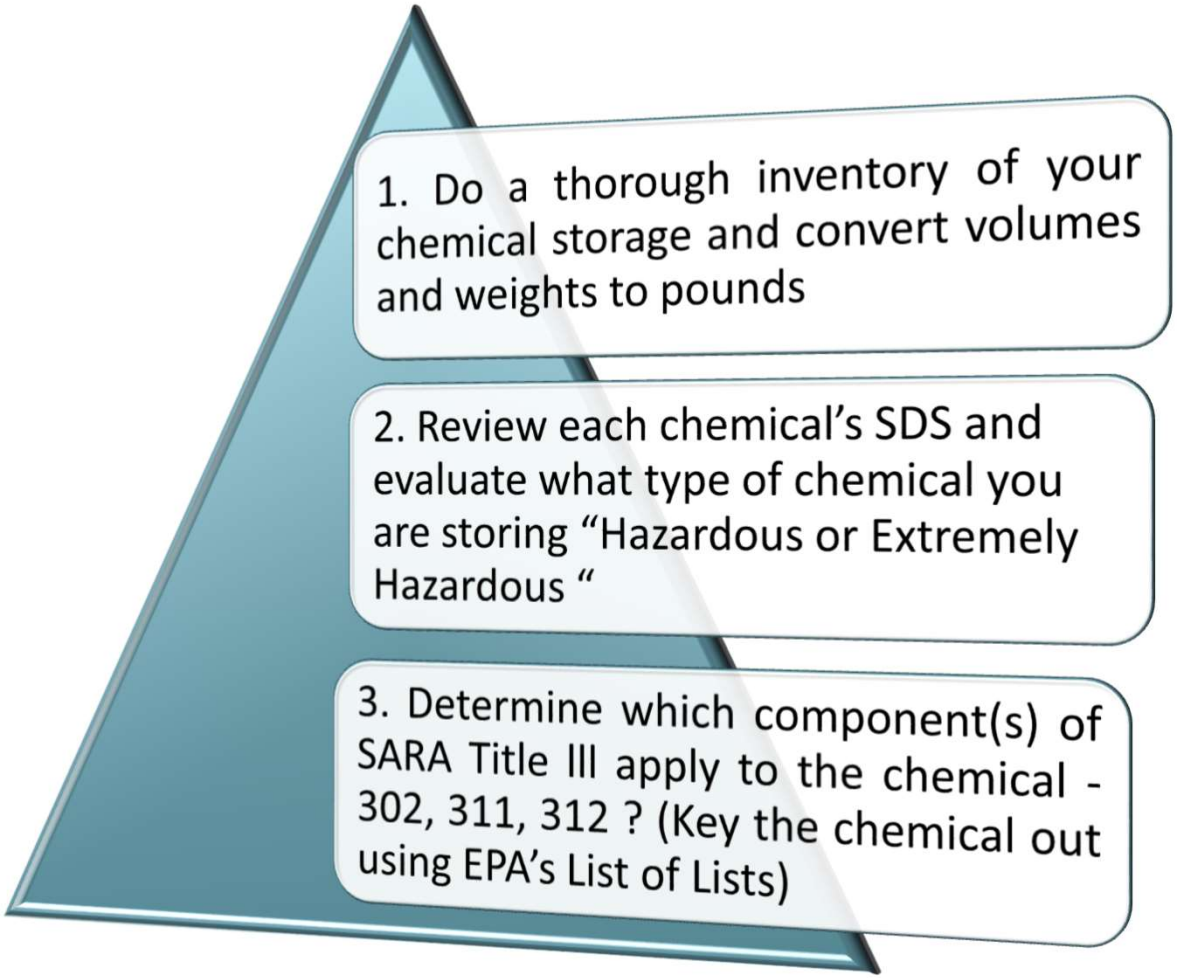
EXEMPTIONS

Section 312 (Tier II) Exemptions do NOT apply to:

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

TIER II REPORTING REVIEW



Tier II Reporting Scenario

Warehouse operation storing pesticides that uses heavy equipment including forklifts with large lead acid batteries.

Tier II Reporting Scenario

SULFURIC ACID IN INVENTORY

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

Total lbs Sulfuric Acid = ?

GALLONS TO POUNDS

FORMULA FOR CONVERSION

Amounts are always in *pounds*.

Gallons must be converted to pounds.

Formula on Pg. 3-8

Specific Gravity (Relative Density) from SDS

X

Weight of Water (8.34 lbs per gal)

=

Pounds per gallon of substance

SDS: SULFURIC ACID BATTERY GRADE

9. Physical and chemical properties

Form :		liquid
M.F.:		H_2SO_4
M.W.:		98.08
Colour:		colourless
Odour:		odourless
pH value	(20°C)	strongly acid
Viscosity	(dynamic)	26.9 mPa*s
Melting temperature		3°C (98%)
Boiling temperature		338°C (98%)
Vapour pressure		~0.0001 mbar
Relative vapour density		not available
Density (20°C)		1.84 g/cm^3
Solubility in water (20°C)		soluble (caution! development of heat)

Tier II Reporting Scenario

55 gallons **Sulfuric acid**

X

weight of water **8.34 lbs/gal**

X

specific gravity (SG) **1.84**

=

844 pounds of **Sulfuric acid**

SDSs FOR BATTERIES CAN BE MISLEADING

- Many SDSs for batteries list a percentage of “Sulfuric Acid” when they mean “battery acid”
- Battery Acid (Electrolyte) is a mixture of Sulfuric acid and water

Lead-acid Batteries “Rule of Thumb”

Approximate Calculation based on total battery weight

- 2/3 (66%) battery weight = Lead
- 1/3 battery weight = battery acid
- 1/3 battery acid weight = Sulfuric Acid

or

- 1/9 (11%) battery weight = Sulfuric Acid

Tier II Reporting Scenario

- 5 Batteries
- Each Battery Weighs 900 pounds
- How many pounds of Sulfuric Acid are in the batteries?

Tier II Reporting Scenario

SULFURIC ACID IN BATTERIES

Total weight of batteries = **5 x 900 lbs**

= 4500 lbs

Battery Acid = **1/3 x 4500 lbs = 1500 lbs**

Sulfuric Acid = **1/3 x 1500 lbs = 500 lbs**

= 1/9 (11%) x 4500 lbs = 500 lbs

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Tier II Reporting Scenario

TOTAL SULFURIC ACID

500 lbs in the batteries

\+ 844 lbs pure

1344 lbs total

Remember this total for the next presentation!!!

Tier II Reporting Scenario

Required Reporting for
1344 lbs of Sulfuric Acid?

Tier II -

- Because ≥ **500 lbs**

Emergency Planning
(Section 302)

- Because ≥ **TPQ (1000 lbs)**

Tier II Reporting Scenario

Paraquat Dichloride

EHS = yes/no?

TPQ = **10 / 10,000 lbs** **non-reactive solid in solution**

Tier II report threshold = **10 / 500 lbs**

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Tier II Reporting Scenario

10 gals of Gramoxone Extra Herbicide

(Specific Gravity = 1.12) with 37% paraquat dichloride

Weight of mixture?

10 gal x **8.34** lb/gal x **1.12** = **93** lbs

Weight of the EHS component?

93 lbs x 0.37 = **34** lbs paraquat dichloride

Is a Tier II report required? **Yes**

Is this facility subject to Section 302? **No**

From page 2-1: 34 lbs x 0.2 = 6.8 lbs (below TPQ of 10 lbs)

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THRESHOLD

The threshold for reporting in response to requests is zero

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

TIER II REPORT & ONLINE REPORTING

QUESTIONS?

MICHIGAN SARA TITLE III PROGRAM

517-284-SARA (284-7272)

www.michigan.gov/sara

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