



# Toxics Release Inventory Reporting

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## Basic Concepts

REPORTING YEAR 2025

*Emergency Planning & Community RIGHT-TO-KNOW Act (EPCRA) Section 313*





# TRI Training Module Contents



## Basic Concepts Module

1. Covered Sectors
2. Listed Chemicals and Activity Thresholds
3. Reporting Exemptions
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## Advanced Concepts Module

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# INTRODUCTION





# Emergency Planning and Community Right-to-Know Act

**The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 helps communities plan for chemical emergencies.**

- Congress passed EPCRA to address concerns regarding chemical emergency preparedness after two major toxic chemical releases in Bhopal, India (1984) and Institute, West Virginia (1985).

**Section 313 of EPCRA authorizes the Toxics Release Inventory (TRI).**

- The U.S. EPA administers EPCRA Section 313.
- This law requires EPA to collect, maintain, and provide public access to the TRI data.

**EPCRA Section 313 covers chemicals that cause one or more of the following:**

- Cancer or other chronic human health effects
- Significant adverse acute human health effects
- Significant adverse environment effects

**EPCRA Section 313 currently covers over 800 chemicals and chemical categories.**



# What Does EPCRA Section 313 Require?

**Section 313 of EPCRA requires facilities to submit a TRI reporting form annually for each TRI-listed chemical exceeding an activity threshold (manufacturing, processing, or otherwise use).**

**Facilities exceeding an activity threshold must submit a TRI reporting form if they are:**

- In a “covered sector” (defined by NAICS codes) and have 10 or more employees, or
- Subject to reporting requirements based on the discretionary authority granted by EPCRA Section 313(b)(2).

**Submit TRI reporting forms to EPA and appropriate state or Tribal authority.**

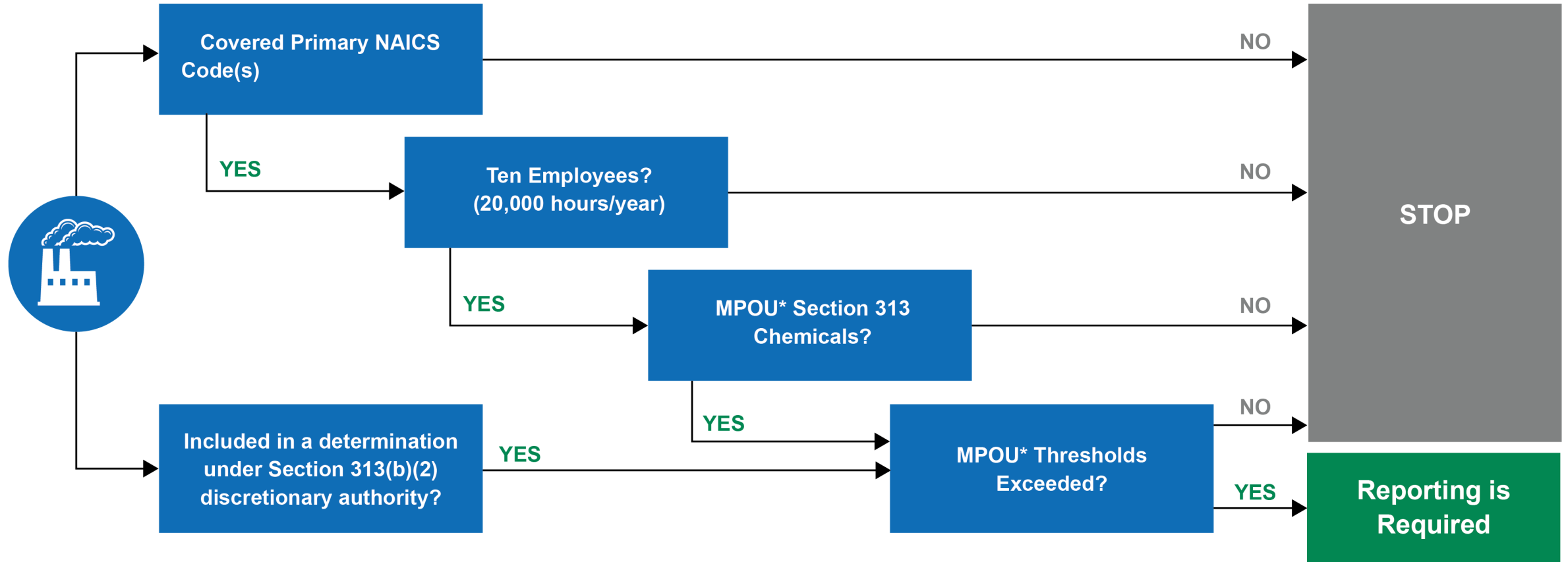
**Reporting forms must be submitted by July 1 following the previous calendar year’s (i.e., Reporting Year (RY)) activities.**

- July 1, 2026, is the reporting deadline for RY 2025 (January 1- December 31, 2025) activities.

**EPCRA Section 313 reporting is mandatory for facilities meeting reporting criteria.**

- Incorrect or incomplete reporting may result in enforcement actions and fines.

# TRI Reporting Requirements



\*MPOU=Manufacturing, Processing, and Otherwise Use

# The TRI Reporting Process

## STEP 1

### APPLICABILITY AND THRESHOLD DETERMINATIONS



Identify Section 313 chemicals manufactured, processed, or otherwise used at the site



Determine quantities of Section 313 chemicals and whether they are manufactured, processed, or otherwise used on-site for the reporting year

**!**  
If a Threshold is Exceeded

## STEP 2

### RELEASE / WASTE MANAGEMENT REPORTING



Identify total releases and off-site transfers



Identify other waste management practices



Identify pollution prevention activities



Use TRI-MEweb to Complete Form R or Form A

Complete Final QA/QC

Certify Form

Submit to  
EPA and State  
or Tribe

# SECTION 1: COVERED SECTORS





# Covered Industry Sectors

| INDUSTRY SECTOR                                    | NOTES                                                                                                                          |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Manufacturing</b>                               | Facilities engaged in the mechanical or chemical transformation of materials or substances into new products                   |
| <b>Metal Mining</b>                                | Not including metal mining services, and uranium, radium, and vanadium ores                                                    |
| <b>Coal Mining</b>                                 | Not including coal mining services                                                                                             |
| <b>Electrical Utilities</b>                        | Limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce      |
| <b>Treatment, Storage, and Disposal Facilities</b> | Limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C, 42 U.S.C. Section 6921 et seq    |
| <b>Solvent Recovery Services</b>                   | Limited to facilities primarily engaged in solvent recovery services on a contract or fee basis                                |
| <b>Chemical Distributors</b>                       | Facilities engaged in the wholesale distribution of chemicals and allied products                                              |
| <b>Petroleum Bulk Terminals</b>                    | Facilities engaged in the wholesale distribution of crude petroleum and petroleum products from bulk liquid storage facilities |
| <b>Natural Gas Processing Facilities</b>           | Facilities engaged in operating gas distribution systems, transmitting gas to customers, gas marketers and brokers             |



# Covered NAICS Codes



**2022 North American Industry Classification System (NAICS) codes are used for TRI reporting.**

**To determine whether your facility's primary NAICS code is covered by TRI regulations, see**  
[guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:gd::::gd:naics\\_codes](https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd::::gd:naics_codes)

## TRI-Covered NAICS Codes

- 113 Logging
- 211 Oil and Gas Extraction
- 212 Mining
- 221 Electric Utilities
- 31-33 Manufacturing
- 424 Merchant Wholesalers, Nondurable Goods
- 425 Wholesale Electronic Markets and Agents Brokers
- 488 Support Activities for Transportation
- 512 Motion Picture and Sound Recording Industries
- 5131 Newspaper, Periodical, Book, and Directory Publishers
- 516 Broadcasting and Content Providers
- 541 Professional, Scientific, and Technical Services
- 562 Waste Management and Remediation Services
- 811 Repair and Maintenance

*Note: For many of these NAICS codes, there are reporting exceptions.*

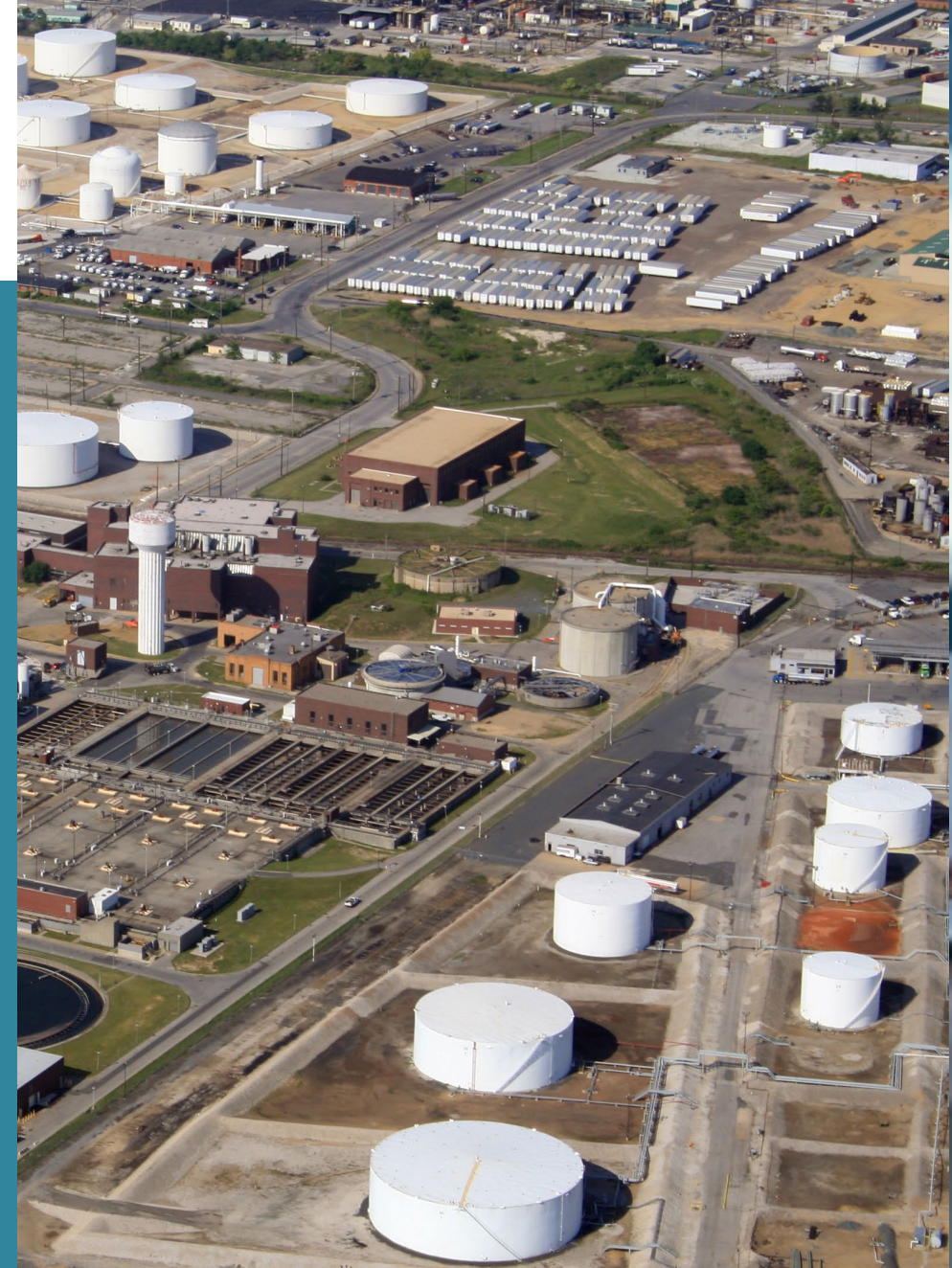
# Definition of “Facility”

TRI reporting requirements are determined by activities at “facilities.”

- Primary NAICS code determination at facility level
- Employee threshold determination at facility level
- Chemical threshold determinations made at facility level

“Facility - all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person).

**EPCRA § 329 (4)**



# Multi-Establishment Facility

Multi-establishment facilities may include distinct and separate economic units that have different NAICS codes.

A facility's primary NAICS is determined by the establishment with the majority of value added (i.e., greater than 50%).

When a majority is not present, the primary NAICS is determined by the plurality of greatest percentage of value added.

Value added = sum (value of products exiting the establishment) -  
sum (value of products entering the establishment)



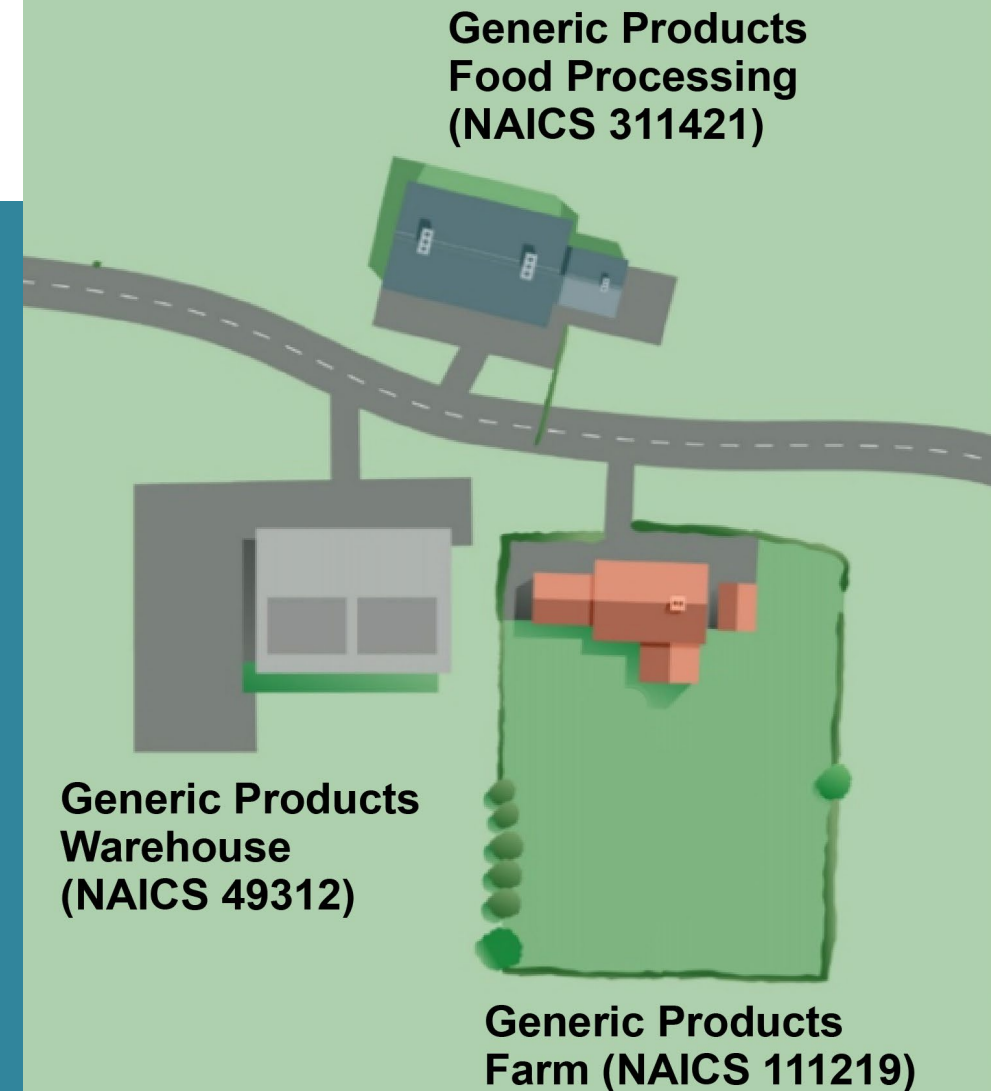
# Example of a Multi-Establishment Facility

Three separate establishments with distinct and separate economic units located on contiguous/ adjacent property owned by the same person.

- Establishment: a unique and separate economic unit of a facility (See 40 CFR § 372.3).

**These are considered one facility under EPCRA** (40 CFR § 372.22(b) and 372.3).

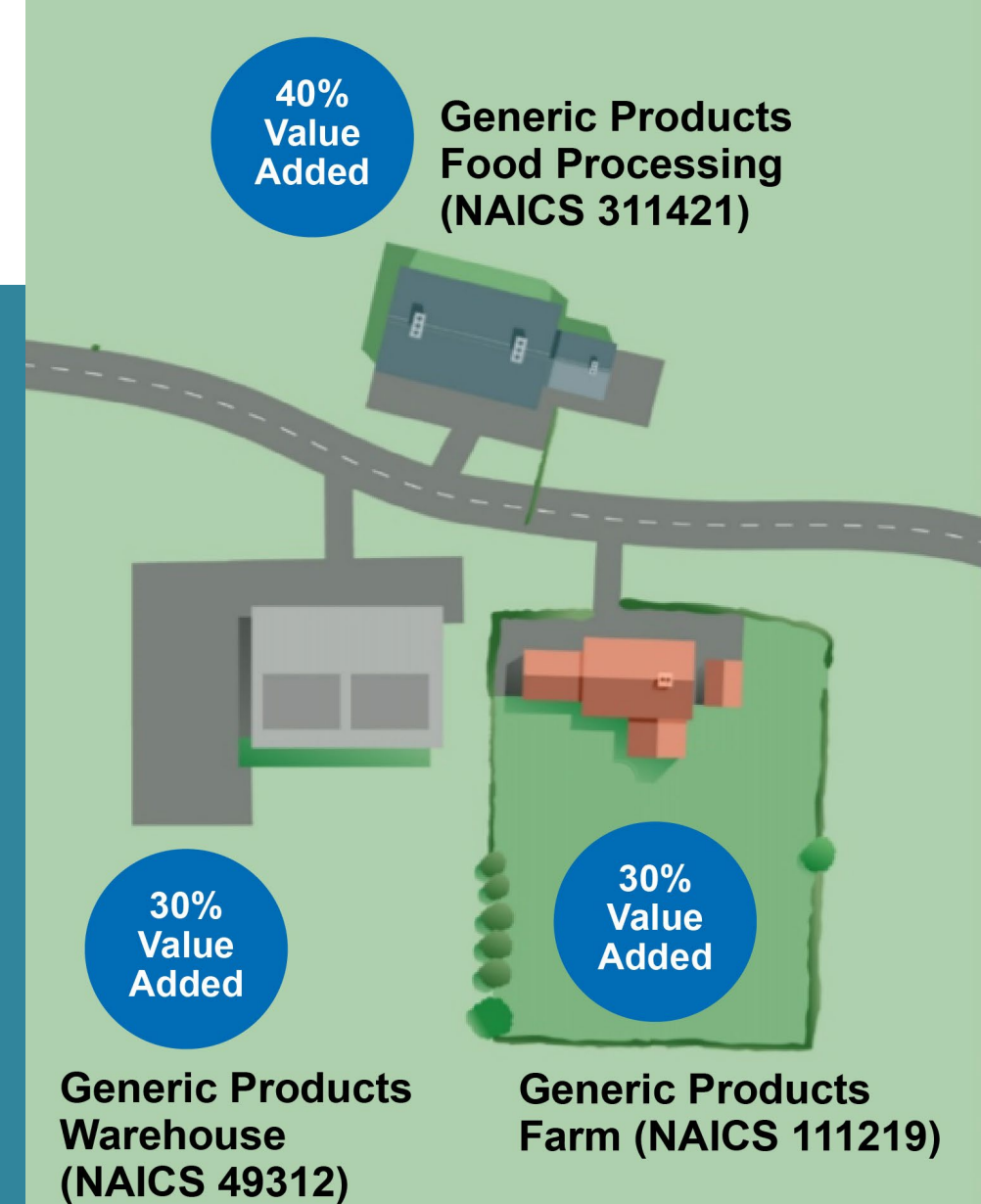
- Food Processing: NAICS 311421 (covered)
- Farm: NAICS 111219 (not covered)
- Warehouse: NAICS 49312 (not covered)



# Another Example of a Multi-Establishment Facility

In this example, the plurality is with the food processing establishment.

Because the food processing NAICS code is covered under TRI, the entire facility would need to consider its employee and chemical use thresholds.





# Employee Threshold



## Ten or more full-time employee equivalents (i.e., 20,000 hours) (40 CFR §§372.3 and 372.22(a))

- All persons employed by a facility regardless of function
  - Includes operational staff, administrative staff, contractors, dedicated sales staff, company drivers, off-site direct corporate support
- Add all hours from part-time and full-time employees
  - Includes holidays, vacation, and sick-leave
- Does NOT include intermittent services from non-employees
  - Excludes contract drivers or contractors performing intermittent service functions such as janitorial services

**Total hours worked by each employee can be determined using time management systems.**

# Discretionary Authority

**Under EPCRA Section 313(b)(2), the EPA Administrator has the discretionary authority to extend TRI reporting requirements to specific facilities.**

The Administrator may determine the application of this authority is warranted based on a chemical's toxicity, the facility's proximity to other facilities that release the chemical or to population centers, any history of chemical releases at the facility, or other factors the Administrator deems appropriate.



# Quiz #1: Question 1



Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

*Select Yes or No*

---

**A manufacturing facility, owned by ABC Corporation,  
with 100 full-time employees**

## Quiz #1: Question 2



Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

*Select Yes or No*

---

**A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, a few blocks away from the manufacturing facility described in Question 1**

## Quiz #1: Question 3



Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

*Select Yes or No*

---

**A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, next door to the manufacturing facility described in Question 1**

## SECTION 2: LISTED CHEMICALS AND ACTIVITY THRESHOLDS





# TRI-Listed Chemicals and Chemical Categories



**Current TRI list contains over 800 individual chemicals and chemical categories.**

**The list has seven parts:**

- 1) Chemicals with qualifiers
- 2) Individual non-PFAS listed alphabetically by name and 3) listed by CASRN
- 4) Chemical categories
- 5) Individual PFAS listed alphabetically by name and 6) listed by CASRN
- 7) Listed CASRNs that include multiple isomers of the chemical

**The list can change. Check every year. Changes are listed on the TRI website and in TRI-MEweb.**

**The TRI chemical list and more information is available at [www.epa.gov/tri/chemicals](http://www.epa.gov/tri/chemicals).**



# TRI-Listed Metal Compound Chemical Categories



## Metal compound chemical categories

|                       |                     |
|-----------------------|---------------------|
| Antimony compounds    | Lead compounds      |
| Arsenic compounds     | Manganese compounds |
| Barium compounds *    | Mercury compounds   |
| Beryllium compounds   | Nickel compounds    |
| Cadmium compounds     | Selenium compounds  |
| Chromium compounds ** | Silver compounds    |
| Cobalt compounds      | Thallium compounds  |
| Copper compounds ***  | Vanadium compounds  |
|                       | Zinc compounds      |

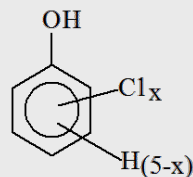
## Metal compound categories include any unique chemical substance that contains the element as part of that chemical's infrastructure

- \* Does not include barium sulfate (CASRN 7727-43-7)
- \*\* Except chromite ore and unreacted ore component of processing residue (see RFI for further information)
- \*\*\* Does not include copper phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine and/or bromine

*Note: Elemental metals and metal compounds are separately listed chemicals under Section 313.*

# Examples of Other TRI-Listed Chemical Categories

## Chlorophenols



## Cyanide compounds

XCN where  $X^+$  = any group (except  $H^+$ ) or any other group where a formal dissociation may occur. For example, KCN or  $Ca(CN)_2$

## Diisocyanates

20 individual compounds cited in category

## Dioxin and dioxin-like compounds

17 individual compounds cited in category

## Ethylenebisdithiocarbamic acid, salts and esters

Includes a substance that may contain EBDC or EBDC salt or ester as part of *its infrastructure*

## Certain glycol ethers

Complex definition

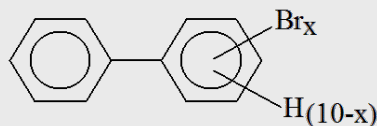
## Nicotine and salts

Includes a substance that may contain it or salt as part of *its infrastructure*

## Nitrate compounds

Water dissociable, reportable only when in *aqueous solution*

## Polybrominated biphenyls (PBBs)





# TRI-Listed Chemicals With Qualifiers

**Qualifiers:** Listed chemicals with parenthetical qualifiers subject to TRI reporting only if manufactured, processed, or otherwise used in the specified form (40 CFR §372.25(g)).

Examples include:

| CHEMICAL          | CASRN      | QUALIFIER                                          |
|-------------------|------------|----------------------------------------------------|
| Aluminum          | 7429-90-5  | Fume or dust                                       |
| Aluminum oxide    | 1344-28-1  | Fibrous forms                                      |
| Asbestos          | 1332-21-4  | Friable                                            |
| Isopropyl alcohol | 67-63-0    | Only manufacturers using the strong acid processes |
| Hydrochloric acid | 7647-01-0  | Acid aerosols                                      |
| Phosphorus        | 12185-10-3 | Yellow or white                                    |
| Saccharin         | 81-07-2    | Manufacture only                                   |
| Sulfuric acid     | 7664-98-8  | Acid aerosols                                      |
| Vanadium          | 7440-62-2  | Except when contained in an alloy                  |
| Zinc              | 7440-66-6  | Fume or dust                                       |

See Table II of  
EPA’s *TRI  
Reporting Forms  
and Instructions*  
document for full  
list

# Chemical List Changes: PFAS

## Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) adds certain PFAS to the TRI chemical list.

- Additional PFAS may be added to the TRI list for future reporting years due to the automatic addition of PFAS mandated by NDAA Section 7321(c) that occurs under certain circumstances:
  - EPA finalizing a toxicity value for a PFAS,
  - Issuing certain Significant New Use Rules (SNURs) under TSCA for a PFAS, or adding a PFAS to certain existing SNURs,
  - Adding a PFAS as an active chemical on the TSCA Inventory.
- PFAS are individually listed and subject to manufacturing, processing, and otherwise use reporting thresholds of 100 pounds.
- Beginning in RY 2024, all TRI-listed PFAS are listed as Chemicals of Special Concern subject to the same reporting requirements as other Chemicals of Special Concern.
- [www.epa.gov/tri/pfas](https://www.epa.gov/tri/pfas)



# Chemical List Changes: PFAS

**For RY 2025, nine PFAS have been added to the TRI chemical list, per the requirements of the NDAA:**

- Perfluoro-3-methoxypropanoic acid (377-73-1)
- Ammonium perfluorodecanoate (PFDA NH<sub>4</sub>) (3108-42-7)
- Sodium perfluorodecanoate (PFDA-Na) (3830-45-3)
- 6:2 Fluorotelomer sulfonate acid (27619-97-2)
- 6:2 Fluorotelomer sulfonate anion (425670-75-3)
- 6:2 Fluorotelomer sulfonate potassium salt (59587-38-1)
- 6:2 Fluorotelomer sulfonate ammonium salt (59587-39-2)
- 6:2 Fluorotelomer sulfonate sodium salt (27619-94-9)
- Acetic acid, [(γ-ω-perfluoro-C8-10-alkyl)thio] derivs., Bu esters (3030471-22-5)



# Chemical List Changes: DINP Category

For RY 2024, EPA added a diisononyl phthalates (DINP) category to the TRI chemical list.

This category includes branched alkyl di-esters of 1,2-benzenedicarboxylic acid in which alkyl ester moieties contain a total of nine carbons.

This category includes but is not limited to the chemicals covered by the CAS Registry Numbers and names listed here:

- Bis(3-ethylheptan-2-yl) benzene-1,2- dicarboxylate (111983-10-9)
- Bis(7-methyloctyl) phthalate (20548-62-3)
- Bis(3,5,5-trimethylhexyl) phthalate (14103-61-8)
- Branched diisononyl phthalate (71549-78-5)
- Di(C8–10, C9 rich) branched alkyl phthalates (68515-48-0)
- Diisononyl phthalate (28553-12-0)



# TRI Program Changes for RY 2024

## PFAS as Chemicals of Special Concern and Supplier Notification Changes

- EPA published a final rule on October 31, 2023 (88 FR 74360) to classify all PFAS added to the TRI list via the FY2020 NDAA as chemicals of special concern.
- This designation removes certain burden reduction options, including the *de minimis* exemption and the use of Form A, and limits the use of range reporting. The final rule also removes the use of the *de minimis* exemption for any chemical of special concern for the purpose of supplier notifications.
- This rule was effective beginning with RY 2024. Affected facilities should update their tracking of chemical activities involving PFAS accordingly. More information at: [www.epa.gov/toxics-release-inventory-tri-program/changes-tri-reporting-requirements-and-polyfluoroalkyl](https://www.epa.gov/toxics-release-inventory-tri-program/changes-tri-reporting-requirements-and-polyfluoroalkyl)





# Toxic Chemical Activity Thresholds



**A TRI reporting form must be prepared and submitted for any chemical that has exceeded an activity threshold.**

**Threshold calculations are based on cumulative quantities of each TRI-listed chemical manufactured, processed, or otherwise used over the reporting year for the whole facility.**

**Each activity threshold is treated separately:**

- Quantify separately amounts of toxic chemicals that are manufactured, processed, or otherwise used at the facility
- Compare amounts in each activity to the toxic chemical's applicable thresholds



# 25,000/10,000-pound Activity Thresholds for non-Chemicals of Special Concern (CSC)



A covered facility must submit a TRI reporting form for a listed chemical with a 25,000/10,000-pound reporting threshold if:

## NON-CSC THRESHOLDS

### Manufactured (including imported)

more than 25,000 pounds of the chemical in the reporting year

OR

### Processed

more than 25,000 pounds of the chemical in the reporting year

### Otherwise Used

more than 10,000 pounds of the chemical in the reporting year

Most of the 800+ chemicals and chemical categories on the TRI list have 25,000/10,000-pound activity thresholds.



# TRI-Listed Chemicals of Special Concern



Within the TRI chemical list is a subset of chemicals designated as being of special concern. These are commonly referred to as ‘chemicals of special concern’ (40 CFR § 372.28).

Chemicals of special concern have lower activity thresholds and different reporting requirements than chemicals not listed as being of special concern.

- Special rules often apply to chemicals of special concern



# Chemicals of Special Concern and Activity Thresholds

**Chemicals of special concern are subject to separate and lower activity thresholds (See 40 CFR § 372.28).**

## **100 lb/yr (manufactured, processed, or otherwise used):**

- Aldrin
- Hexabromocyclododecane
- Lead\*
- Lead compounds
- PFAS
- Pendimethalin
- Polycyclic aromatic compounds
- Tetrabromobisphenol A
- Trifluralin
- Methoxychlor
- 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta[g]-2-benzopyran

## **10 lb/yr (manufactured, processed, or otherwise used):**

- Chlordane
- Heptachlor
- Mercury
- Toxaphene
- Isodrin
- Polychlorinated biphenyls
- Benzo[g,h,i]perylene
- Hexachlorobenzene
- Mercury compounds
- Octachlorostyrene
- Pentachlorobenzene

## **0.1 g/yr (manufactured, processed, or otherwise used):**

- Dioxin and dioxin-like compounds

*\*Excluding lead in stainless steel, brass, or bronze alloys*



# Manufacturing Activities



**Manufacturing:** Generating a TRI-listed chemical (see (EPCRA §313(b)(1)(C)(i) and 40 CFR § 372.3)

## **Intentionally producing chemicals for:**

- Sale
- Distribution
- On-site use or processing (e.g., intermediates)

## **Coincidentally producing chemicals as impurities\* or byproducts\*\*:**

- At any point at the facility, including waste treatment and fuel combustion

## **Importing:**

- “Cause” to be imported

*\*Impurity = TRI-listed chemical that remains with the final facility product as it is distributed into commerce*

*\*\*Byproduct = TRI-listed chemical that is separated out from the process mixture before it becomes the final product*

# Processing Activities

**Processing (EPCRA §313(b)(1)(C)(ii) and 40 CFR § 372.3): preparation of a TRI-listed chemical, after its manufacture, for distribution in commerce:**

- Use as a reactant to manufacture another substance or product
- Add as a formulation component
- Incorporate as an article component
- Repackage for distribution
- Incidentally include as an impurity
- Quantities sent off site for recycling

**Includes any distributive activity for economic benefit, including intracompany transfers**



# Repackaging as a Processing Activity

**Repackaging a TRI-listed chemical for distribution in commerce is considered processing.**

## **Repackaging includes:**

- From container to tanker truck and vice versa
- Between similar size containers
- Via pipeline to/from a tank

## **Repackaging does not include:**

- Sampling without repackaging
- Re-labeling

**Repackaging without distribution into commerce is not processing.**

**Transfer to a storage tank for mere storage is not processing.**



# Otherwise Use Activities

**Otherwise Use (40 CFR §372.3): includes most activities that are NOT manufacturing or processing**

## Examples

- Chemical processing aid (e.g., solvents, catalysts, buffers, non-incorporative reagents)
- Manufacturing aid (e.g., lubricants, refrigerants, coolants, hydraulic fluids, metalworking fluids)
- Ancillary activities:
  - Fuels, cleaners, degreasers
  - Chemicals used to remediate or treat wastes
  - Fabrication and/or use of tools in your process
  - Installation of piping and process-related equipment, e.g., reactors, constructing storage tanks, asphalt roadways





# Otherwise Use Activities (continued)



## Managing wastes received from off-site locations also counts as “otherwise use”

- Disposal, treatment for destruction on site, or stabilization that does not result in further distribution in commerce are considered otherwise use if:
  - TRI-listed chemical was received from off-site location for the purposes of further waste management, or
  - TRI-listed chemical was manufactured as a result of waste management activities on materials received from off site for the purpose of further waste management
- On-site energy recovery is an otherwise use activity.
- Waste management activities, including on-site recycling, treatment for destruction, waste stabilization and release/disposal of TRI-listed chemicals in wastes generated on site are not threshold activities.



# Calculating Activity Thresholds



**The threshold quantities are the total amount manufactured, processed, or otherwise used, NOT the amount released.**

**Calculate the total amount of a TRI-listed chemical for a specific threshold activity.**

**Each activity threshold is calculated separately, and they are not additive.**

**Calculations for reporting waste management may be different from threshold quantities.**

## ► Example of Calculating Activity Thresholds

Over the course of a reporting year, a facility manufactures 24,000 pounds of a chemical with 25,000/10,000-pound reporting thresholds, subsequently processes 24,000 pounds, and happens to otherwise use 9,000 pounds of the same chemical.

That facility has not exceeded the 25,000-pound manufacturing or processing thresholds nor the 10,000-pound otherwise use threshold and would NOT be required to submit a TRI reporting form for that chemical.



# Threshold Determination for Compound Categories



**Aggregate all compounds within the same chemical category for each activity, even if different compounds within a category are used in separate operations.**

**Consider the entire weight of all the different chemical compounds in the same chemical category when determining thresholds.**

***Note:** calculations for release and other waste management estimates of metal compounds are based on the parent metal weight only, and nitrate compounds are based on weight of nitrate ion only.*



# Activities That Are Not TRI Threshold Activities

## Activities that, alone, do NOT constitute a threshold activity:

- Storage
- Remediation of on-site contamination (assuming no listed chemicals are manufactured during remediation)
- Re-labeling without repackaging
- Direct reuse on site
- On-site recycling (not including wastes received from off site)
- Transfers sent off site for further waste management (not including recycling)
- Repackaging (and blending, if any) of waste fuels for burning for energy recovery (However, all fuels, including waste fuels (with blending, if any), are considered otherwise used when combusted for energy recovery.)

**Note:** While these activities are not included in threshold determinations, releases and wastes from these activities are not exempt from reporting if a threshold is exceeded through other activities (unless specifically eligible for one of the reporting exemptions).

## Quiz #2: Question 1



A plant uses benzene as a raw material to manufacture liquid industrial adhesive. The plant adds 27,000 lb of benzene to its liquid adhesive-making operation during the reporting year, but 3,000 lb are volatilized during the operation. How much of the benzene should be applied toward the processing activity threshold?

*Select your choice*

- 
- A. 27,000 lb**
  - B. 24,000 lb**
  - C. 3,000 lb**

## Quiz #2: Question 2



If a facility processes 20,000 lb of 4,4'-methylenedi(phenyl isocyanate) in one operation and 10,000 lb of isophorone diisocyanate in another operation during the reporting year, what should it apply towards its processing threshold for the diisocyanates category?

*Select your choice*

- 
- A. 10,000 lb**
  - B. 20,000 lb**
  - C. 30,000 lb**

## Quiz #2: Question 3



A facility processes 18,000 lb copper sulfate, 10,000 lb of cuprous oxide, and otherwise uses 12,000 lb of aqueous sulfuric acid solution in a closed system. For which TRI chemicals or chemical categories would the facility need to submit a TRI reporting form?

*Select your choice*

- 
- A. copper compounds and sulfuric acid**
  - B. only copper compounds**
  - C. only sulfuric acid**

## Section 3: Reporting Exemptions





# Reporting Exemptions

**If an exemption applies, then the amount of the TRI-listed chemical subject to the exemption does NOT have to be included in:**

- Threshold determinations
- Release and other waste management reporting

**Recognize that exemptions only apply to certain limited circumstances.**

**Misusing exemptions may lead to enforcement action.**

**To learn more about TRI exemptions, see:**

[guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:gd-list#exemption](https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-list#exemption)





# Types of Reporting Exemptions

## Types of exemptions (40 CFR § 372.38)

- *De minimis*
- Article
- Laboratory activities
- NAICS-code-specific exemptions:
  - Coal mining extraction activities
  - Metal mining overburden
- “Otherwise use” exemptions:
  - Motor vehicle maintenance
  - Routine janitorial or facility grounds maintenance
  - Structural components
  - Personal use
  - Intake water and air





# *De Minimis* Exemption

The quantity of a non-chemical of special concern in a mixture or other trade name product is eligible for the *de minimis* exemption (40 CFR §372.38(a)) if the chemical is:

- An OSHA-defined carcinogen present at a concentration of less than 0.1% OR
- Any other non-CSC TRI chemical present at a concentration of less than 1%.

The TRI *de minimis* level appears next to each chemical on the list in Table II of the TRI Reporting Forms and Instructions.

- Either 1.0%, 0.1%, or \* for chemicals of special concern where *de minimis* is not allowed (See 40 CFR §372.38(a))
  - Effective January 1, 2024, all PFAS added to TRI pursuant to the 2020 NDAA are chemicals of special concern. Beginning in RY24, these PFAS are subject to the same reporting requirements as other chemicals of special concern and are not eligible for the *de minimis* exemption, including for supplier notification purposes.



# *De Minimis* Exemption: How it Works



## *De minimis* exemption generally applies to non-chemicals of special concern:

- In mixtures or trade name products received from off-site locations, including imported
- Coincidentally manufactured as impurities that remain in products distributed in commerce

## *De minimis* exemption does not apply to:

- Manufactured chemicals (in most cases): Includes by-products produced from manufacturing, processing, otherwise use, or any waste management
- Wastes received from off-site locations
- Chemicals of Special Concern
  - Effective January 1, 2024, chemicals of special concern are also not eligible for the *de minimis* exemption for purposes of the Supplier Notification Requirements.

# Chemicals of Special Concern and the *De Minimis* Exemption

The *de minimis* exemption cannot be applied to chemicals of special concern.

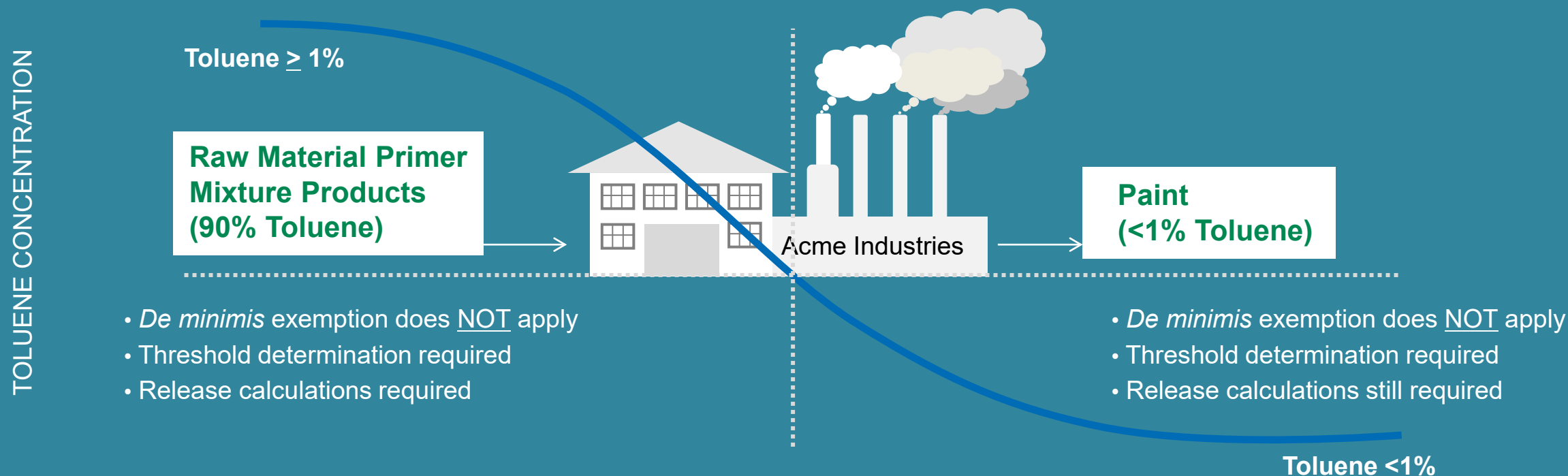
All other EPCRA Section 313 exemptions can apply to chemicals of special concern.

Facilities that receive a mixture and know that chemicals of special concern are present must consider each chemical of special concern in threshold and release calculations—regardless of whether the supplier notification was provided.



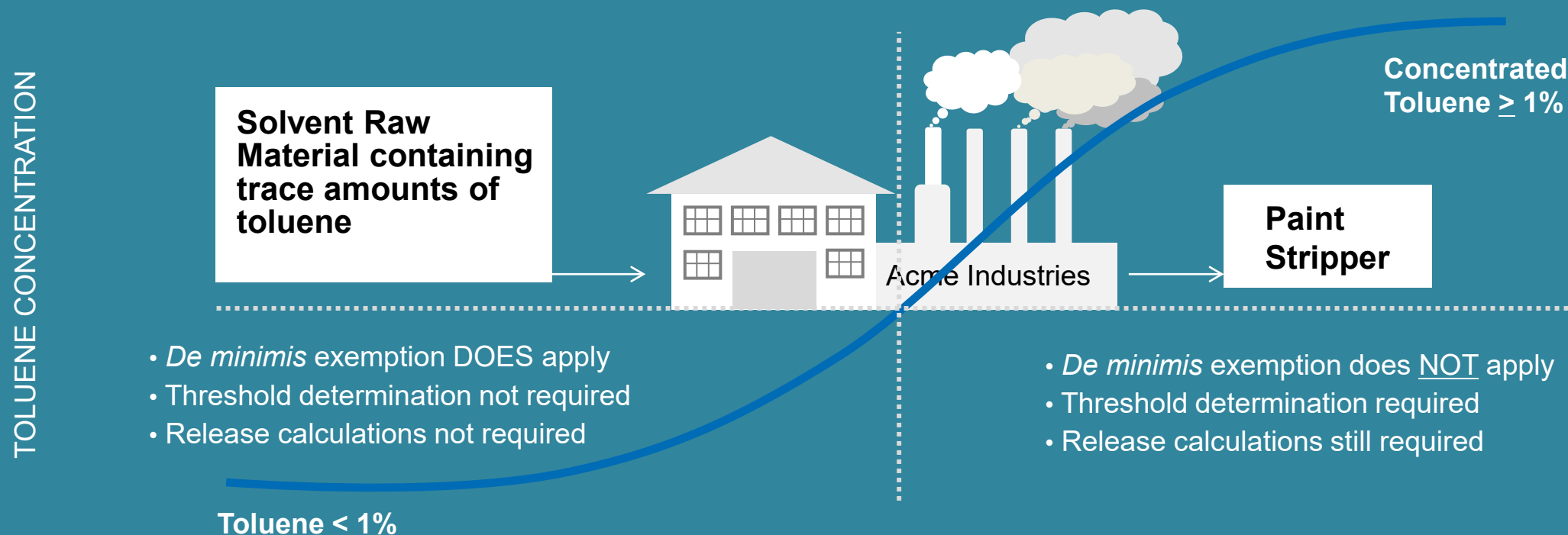
# De Minimis Exemption: How It Works... (cont.)

Processing a non-chemical of special concern in a mixture to below the *de minimis* concentration does NOT exempt the chemical from threshold determinations and release calculations



# De Minimis Exemption: How It Works... (cont.)

Processing a non-chemical of special concern in a mixture to above the *de minimis* concentration triggers threshold determinations and, if thresholds are exceeded, release calculation requirements



# Articles Exemption Applicability

To qualify for the articles exemption, the article must meet three criteria (40 CFR § 372.3):

1. Is formed into a specific shape or design during manufacture, and
2. Has end-use functions dependent in whole or in part on its shape or design during end-use, and
3. Does NOT release a TRI-listed chemical under normal processing or use conditions at a facility.





# Articles Exemption: How it Works



**To maintain the article status, all like items must be:**

- In a form having a specific shape or design; or
- Recycled, directly reused; or
- 0.5 pound or less released per year (may be rounded down to zero)

**If more than 0.5 pound per year of a TRI-listed chemical is released from all like items in a form not having a specific shape or design and is not recycled or directly reused, none of the items qualify for the articles exemption.**

**End use must be dependent upon the item's initial shape or design. (For example, sheet metal must maintain its initial thickness, and wire and pipe must maintain their initial diameter.)**

**See the articles exemption summary on GuideME for more information:**

- [guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:gd::::gd:articles](https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd::::gd:articles)

# Articles Exemption: Examples



**Wire is cut to specified lengths. Wastes include off-spec cuts and dust.**

- Generation of off-spec cuts that are recognizable as articles will not, by themselves, negate the article status
- Dust and off-spec cuts not recognizable as articles, with greater than 0.5 pound of ANY TRI-listed chemical released annually, and not recycled or directly reused, negate the article status.



**Fluorescent light bulbs containing mercury are installed and used. Following use, the bulbs are crushed for recycling at the facility and mercury is released.**

- Crushing bulbs for recycling after use for lighting at the facility is not considered release under normal conditions of processing or use at this facility; the articles exemption may apply.

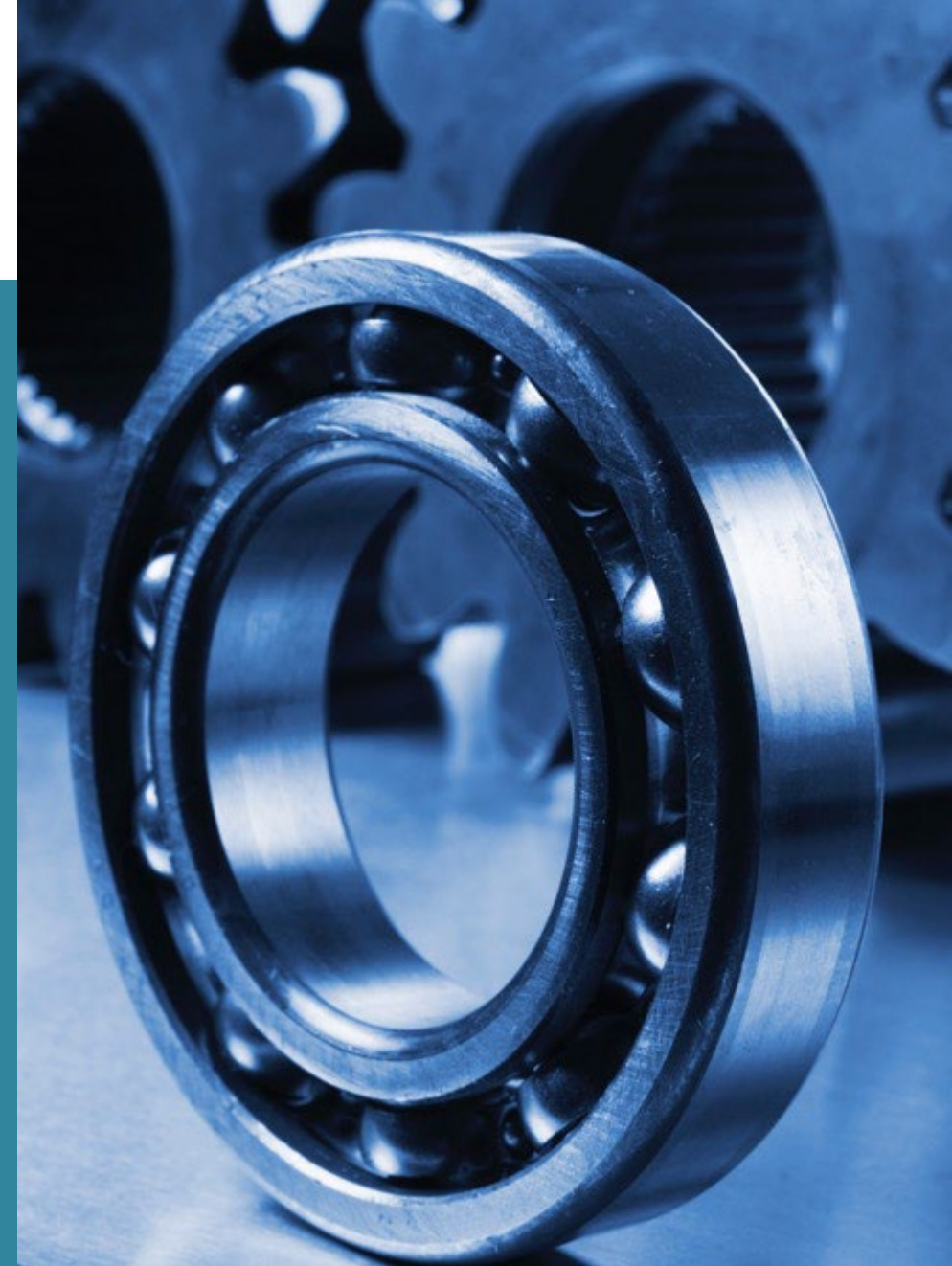


# Articles Exemption

## **The Articles Exemption is often inappropriately used!**

- In many instances when metals are machined, cut, or ground, in any manner, the articles exemption may not be applicable.

**The Articles Exemption does not apply to the actual manufacturing of articles.**





# Laboratory Activities Exemption: How it Works



**TRI-listed chemicals used in these laboratory activities under the direct supervision of a technically qualified individual ARE exempt from threshold and release and other waste management reporting (40 CFR § 372.38(d)):**

- Sampling and analysis
- Research and development
- Quality assurance
- Quality control

**TRI-listed chemicals used in these laboratory activities are NOT exempt:**

- Specialty chemical production
- Pilot-scale plant operations
- Activities not conducted in lab
- Support services
  - Photo processing
  - Equipment maintenance/cleaning

# Motor Vehicle Maintenance Exemption

TRI-listed chemicals used to maintain vehicles operated by the facility are eligible for the exemption from threshold determinations (40 CFR § 372.38(c)(4)).

- “Otherwise use” exemption

**Motor vehicles include cars, trucks, tanks, and forklifts**

**Motor vehicle maintenance includes:**

- Fueling and adding other fluids (e.g., ethylene glycol)
- Body repairs
- Parts washing
- Lead acid or other types of batteries (e.g., forklifts)

**Note:** This exemption does NOT apply to “manufacture” of TRI-listed chemicals from combustion of fuels.





# Routine Janitorial or Facility Grounds Maintenance Exemption



**TRI-listed chemicals contained in products used for non-process related routine janitorial or facility grounds maintenance ARE eligible for exemption (40 CFR § 372.38(c)(2)):**

- Phenol in bathroom disinfectants
- Pesticides or fertilizers used on lawns
- “Otherwise use” exemption

**TRI-listed chemicals used in the following activities are NOT exempt:**

- Facility equipment maintenance
- Cleaning or maintenance activities that are directly associated with or integral to the production process at the facility

***Note:** Chemicals otherwise used in janitorial or grounds maintenance activities may not be exempt if part of your facility’s “process” is to provide these services (e.g., federal hospitals, prisons, parks). Also, chemicals manufactured during routine janitorial or facility ground maintenance are not exempt.*



# Structural Component Exemption



TRI-listed chemicals used as structural components are eligible for exemption (See 40 CFR § 372.38(c)(1)). Process-related building components are not “structural components” as contemplated by the exemption.

**Non-process-related building components that are “structural components” and are eligible for the exemption include:**

- Potable water pipes and other non-process-related pipes and structures

**Processed-related building components that are NOT “structural components” and are NOT eligible for the exemption include:**

- Refractory brick, boiler tubes, process-related pipes, anodes used in electroplating, grinding wheels, & metal working tools.
- Structural components that are integral to a non-industrial facility’s “process” (e.g., federal prisons, hospitals, parks).



# Other Section 313 “Otherwise Use” Exemptions

**TRI-listed chemicals contained in non-process-related items for employee personal use (40 CFR § 372.38(c)(3)):**

- Non-Federal Facilities:
  - HCFC-22 in air conditioners used solely for employee comfort (exemption does NOT cover process cooling using chemical-based cooling systems).
  - Chlorine used to treat on-site potable water.
  - Phenol used in a facility medical dispensary.

**TRI-listed chemicals found in intake water and air.**

# Sector-Specific Exemptions



**Coal mining extraction activities are exempt from threshold determinations and release reporting (40 CFR § 372.38(g)) (applies to NAICS Codes 212114-212115):**

- **Coal extraction:** physical removal or exposure of ore, coal, minerals, waste rock, or overburden prior to beneficiation, and encompasses all extraction-related activities prior to beneficiation (40 CFR § 372.3).



**Chemicals in metal mining overburden that are processed or otherwise used are specifically exempt from TRI reporting (40 CFR § 372.38(h)) (applies to NAICS Codes 212220, 212230, 212290):**

- **Overburden:** unconsolidated material that overlies a deposit of useful materials or ores (40 CFR § 372.3).

The image shows a vast industrial storage facility. In the foreground and middle ground, numerous blue metal drums are neatly stacked in long, parallel rows on wooden pallets. The drums are arranged in a way that creates a strong sense of perspective, leading the eye towards the background. The floor is a smooth, light-colored concrete. In the far background, a large, closed metal door or gate is visible, and the structural beams of the warehouse roof can be seen above. The lighting is even, highlighting the metallic texture of the drums and the orderly arrangement of the storage area.

## Section 4: Threshold Determination



# Chemical Information Management



**All non-exempt manufacture/processing/otherwise use of TRI-listed chemicals at the facility must be counted towards chemical activity thresholds.**

## **Tracking TRI-listed chemicals entering facility**

- Purchasing/Changes in inventory levels
- Contractors
- Capital purchases (e.g., chillers, process equipment)
- Direct purchases (credit card or other emergency purchases)
- Direct and indirect materials
- Manufacturing byproducts/intermediates generated

**Need cooperation and support from all functional groups purchasing or using TRI-listed chemicals.**

**Be comprehensive to ensure accurate threshold determinations!**

# Threshold Determinations

## Identify Chemicals and Concentrations



- SDS
- Product or Specifications
- Available Supplier/  
Vendor Product QA/QC data
- Industry Standards (API, ASTM, etc.)
- Waste Profiles
- Process Knowledge
- Other References (AP-42,  
WebFIRE, Merck Index)
- Supplier Notification

## Collect Data to Calculate Thresholds



- Inventory or Purchase Records
- Throughput/Production Data
- Integrated Supplier Records
- EPCRA or Other Env. Reports
- Air Permits / MACT or Similar Standards/  
Emission Inventories
- Water Permits / DMRs / Discharge Reports
- Annual/Biennial Waste Reports
- User Records
- Other Vendor Records (can call vendor)



# TRI Chemicals Contained in Mixtures



For the threshold quantity, only include the amount of the TRI-listed chemical in the mixture, not the weight of the entire mixture.

The *de minimis* exemption (40 CFR § 372.38(a)) applies to chemicals not classified as chemicals of special concern contained in mixtures at less than 1.0% or 0.1% (for carcinogens).

- The *de minimis* exemption is related to the concentration of the chemical in a mixture, NOT the quantity of the mixture used.

A metal alloy can be thought of as solid solution. To determine threshold quantity, multiply the concentration of the TRI-listed chemical in the alloy by the total weight of alloy processed or otherwise used.



# Determining Concentrations in Mixtures or Other Trade Name Products



Determine whether thresholds were exceeded for listed chemicals in a mixture (40 CFR § 372.30(b)(3)):

- **Exact concentration:** use concentration provided
  - SDS = 25% → Use 25%
- **Upper bound:** use upper limit
  - SDS < 25% → Use 25%
- **Range:** use the midpoint of the range
  - SDS: 30-50% → Use 40%
- **Lower bound:** subtract out other known constituents, create a range, and use midpoint of range
  - SDS > 75% toxic chemical → Use 87.5% (top of range = 100%)
  - SDS > 75% toxic chemical, 15% water → Use 80% (range = 75%-85%)



# Determining Concentrations in Wastes



%

**If concentration is exact, upper bound, range, or lower bound, use the guidance for mixtures and other trade name products discussed earlier.**

nd

**If concentration is below detection limit, use engineering judgment:**

- If the TRI-listed chemical IS expected to be present, assume 1/2 of full detection limit.
- If the TRI-listed chemical is NOT expected to be present, assume 0.



# Supplier Notification



**Supplier notification: requires suppliers of mixtures or trade name products to covered facilities (See 40 CFR § 372.45(a)) to:**

- Identify TRI-listed chemical(s) by name and CAS Registry Number
- Identify TRI-listed chemical(s) as being subject to Section 313 requirements
- Provide concentration (or range) of TRI-listed chemicals in mixtures and other trade name products (not wastes)
- Provide notification at least annually in writing or attached to the SDS
- Update notification when changes occur

**The Regulatory Information section of the SDS should identify any chemicals that are subject to TRI reporting.**

**Effective January 1, 2024, suppliers of any chemical of special concern are not eligible for the *de minimis* exemption for supplier notification purposes.**

- Note: Also effective January 1, 2024, PFAS added to TRI pursuant to the 2020 NDAA are chemicals of special concern. Beginning in RY24, these PFAS are subject to the same reporting requirements as other chemicals of special concern and are not eligible for the *de minimis* exemption, including for supplier notification purposes.

**Supplier Notification Requirements Guidance Document:**

- [guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:gd-title:::::title:supplier\\_notification](https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-title:::::title:supplier_notification)



# Watch for Double Counting



**For threshold determinations, TRI-listed chemicals recycled from spent or contaminated materials or TRI-listed chemicals directly reused:**

- Count original amount used only once.
- For materials in use from previous years, count only the quantity added during current reporting year.

**TRI-listed chemicals that are stockpiled or in inventory but not manufactured, processed, or otherwise used during the reporting year are NOT counted for threshold determinations.**

**Chemicals sent off site for recycling and returned to the facility are considered new materials and counted for threshold determinations.**



# Count the Original Amount Used Only Once



## ► Example

**If a chemical is blended into a product mixture, and then this mixture is packaged for sale into 55-gallon drums, these are both processing activities, and the chemical is “processed” twice. Only count this quantity once towards the processing threshold.**

- During the Reporting Year, 20,000 lb of toluene was blended with other chemicals to create a paint product.
- The paint product (containing the 20,000 lb of toluene) was then packaged into 55 gallons drums for sale.
- The processing quantity for this facility for Reporting Year = 20,000 lb.



# Multi-Establishment Facility



## Reporting as a multi-establishment facility (40 CFR §372.30(c))

- Use the 'Manage Establishments' option in TRI-MEweb to create multiple establishments for which to submit reporting forms.
- Multi-establishment facilities have the option to file separate Form Rs for each part of the facility.
- Threshold calculations must account for all the facility's activities and are not performed at the establishment level.
- Form Rs must include all non-exempt releases and other waste management activities at the facility.
- Use the 'Report by Part' option in TRI-MEweb to prepare separate Form Rs for the multi-establishment facility.
- Avoid double-counting chemicals that are involved in intra-facility transfers.

# Example: Worksheet for Chemicals with 25,000/10,000-pound Reporting Thresholds

Facility Name: Omni Chemical  
Toxic Chemical or Chemical Category: Toluene  
Reporting Year: \_\_\_\_\_

Date Worksheet Prepared: \_\_\_\_\_  
Prepared By: J.S.P.

Step 1. Identify amounts of the toxic chemical manufactured, processed, or otherwise used.

| Mixture Name or Other Identifier | Information Source | Percent by Weight | Total Weight (in lb) | Amount of the Listed Toxic Chemical by Activity (in lb): |                      |                      |
|----------------------------------|--------------------|-------------------|----------------------|----------------------------------------------------------|----------------------|----------------------|
|                                  |                    |                   |                      | Manufactured                                             | Processed            | Otherwise Used       |
| 1. Bulk Toluene                  | SDS                | 98                | 23,000               |                                                          | 22,500               |                      |
| 2. Joe's Degreaser               | Purchasing         | 50                | 10,000               |                                                          |                      | 5,000                |
| 3. Bathroom Paint                | Vendor             | 5                 | 30,000               |                                                          |                      | 1,500                |
| 4. Parts Washer Fluid            | Purchasing         | 40                | 10,000               |                                                          |                      | 4,000                |
| 5.                               |                    |                   |                      |                                                          |                      |                      |
| 6.                               |                    |                   |                      |                                                          |                      |                      |
| 7.                               |                    |                   |                      |                                                          |                      |                      |
| Subtotal:                        |                    |                   |                      | (A) _____ lb                                             | (B) <u>22,500</u> lb | (C) <u>10,500</u> lb |

Step 2. Identify exempt forms of the toxic chemical that have been included in Step 1.

| Mixture Name as Listed Above | Applicable Exemption | Note Fraction or Percent Exempt (if Applicable) | Exempt Amount of the Toxic Chemical from Above (in lb): |                            |                                   |
|------------------------------|----------------------|-------------------------------------------------|---------------------------------------------------------|----------------------------|-----------------------------------|
|                              |                      |                                                 | Manufactured                                            | Processed                  | Otherwise Used                    |
| 1. Bathroom Paint            | Struct. Comp.        | 100                                             |                                                         |                            | 1,500                             |
| 2.                           |                      |                                                 |                                                         |                            |                                   |
| 3.                           |                      |                                                 |                                                         |                            |                                   |
| 4.                           |                      |                                                 |                                                         |                            |                                   |
| 5.                           |                      |                                                 |                                                         |                            |                                   |
| 6.                           |                      |                                                 |                                                         |                            |                                   |
| 7.                           |                      |                                                 |                                                         |                            |                                   |
| Subtotal:                    |                      |                                                 | (A <sub>1</sub> ) _____ lb                              | (B <sub>1</sub> ) _____ lb | (C <sub>1</sub> ) <u>1,500</u> lb |

Step 3. Calculate the amount subject to threshold: (A - A<sub>1</sub>) \_\_\_\_\_ lb (B - B<sub>1</sub>) 22,500 lb (C - C<sub>1</sub>) 9,000 lb

Compare to thresholds for section 313 reporting. 25,000 lb 25,000 lb 10,000 lb

If any threshold is exceeded, reporting is required for all activities. Do not submit this worksheet with Form R. Retain for your records.



# Record Keeping and Documentation



## Importance of good record keeping:

- Detailed records improve reporting, accuracy, and data quality.
- Reduces duplication of effort.
- Well-labeled calculations and engineering assumptions serve as standard operating procedures for future years.
- Helps ensure consistency from year to year, especially if personnel responsible for reporting change.

## EPA Requirements

- Records used to complete Form R must be kept for three years from the time the reporting form was submitted (40 CFR § 372.10).
- EPA may review records during a data quality audit.
- Note that EPA may perform data quality audits going back five years, so it may be useful for facilities to keep records beyond the three-year statutory recordkeeping requirement.



# Best Practices for Threshold Determinations and TRI Reporting



## Begin Early

- Implement a program to gather “real-time” data on usage.
- Searches for historical information can be difficult.



## Team Approach

- Include all relevant personnel (e.g., engineering, purchasing, environmental, waste management, operations).



## Recordkeeping & Documentation

- Keep good records and document all work.

# TRI Reporting Process

## STEP 1

### APPLICABILITY AND THRESHOLD DETERMINATIONS



Identify Section 313 chemicals manufactured, processed, or otherwise used at the site



Determine quantities of Section 313 chemicals and whether they are manufactured, processed, or otherwise used on-site for the reporting year

**!**  
If a Threshold  
is Exceeded

## STEP 2

### RELEASE / WASTE MANAGEMENT REPORTING



Identify total releases and off-site transfers



Identify other waste management practices



Identify pollution prevention activities



Use TRI-MEweb to Complete Form R or Form A

Complete Final QA/QC

Certify Form

Submit to  
EPA and State  
or Tribe

## | Section 5: Overview of Form R





# Overview of Form R



## Two principal types of information required:

- Part I: Facility-specific
- Part II: Chemical-specific

**One form must be submitted to EPA and to the relevant state or Tribe for each TRI-listed chemical or chemical category exceeding applicable thresholds (assuming other reporting criteria are met).**

**Forms must be submitted electronically via TRI-MEweb, including revisions and withdrawals. EPA will not accept paper submissions, except for trade secret claims.**

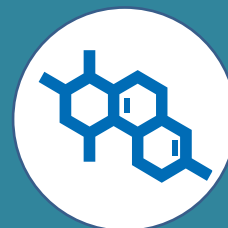


# Form R Content



## Part I: Facility Identification Information

- **Section 1:** Reporting Year
- **Section 2:** Trade Secret Information
- **Section 3:** Certification
- **Section 4:** Facility Identification
- **Section 5:** Parent Company Info



## Part II: Chemical Identification Information

- **Section 1:** Toxic Chemical ID
- **Section 2:** Mixture Component ID
- **Section 3:** Activities and Uses
- **Section 4:** Max Amount On-site during CY
- **Section 5:** On-site Releases
- **Section 6:** Off-site Transfers
- **Section 7:** On-site Waste Treatment, Energy Recovery, Recycling Processes
- **Section 8:** Source Reduction and Waste Management Activities
- **Section 9:** Miscellaneous Information



# Part I: Facility Identification

## Facility Name and Address (Section 4.1)

- Facility name
  - Standard facility names are available through the Facility Registry Service (<https://www.epa.gov/frs/frs-ez-query>).
- Street address (no PO Box or other mailing address)
  - Mailing address required if different from street address.

## Full or Partial Facility and Federal Facility Designation (Section 4.2)

- Facility type (select one)
  - Federal facility,
  - Government Owned, Contractor Operated (GOCO), or
  - Neither
- For multi-establishment facilities, option to indicate reporting for part of a facility (Form R only)
  - Facilities reporting by part use the same TRIFID for all reporting forms.





# Part I: Facility Identification (continued)

## Technical and Public Contact information (Sections 4.3 and 4.4)

- List name, phone number, and email
  - Technical contact: should be able to explain data to EPA, not disclosed in the public data releases.
  - Public contact: should be able to explain the facility's data to the public.

## Primary and Secondary NAICS code(s) (Section 4.5)

- Enter primary 6-digit NAICS code
- Enter other applicable NAICS codes in decreasing order of significance
- [www.census.gov/naics](http://www.census.gov/naics)
- [www.epa.gov/toxics-release-inventory-tri-program/tri-covered-industry-sectors](http://www.epa.gov/toxics-release-inventory-tri-program/tri-covered-industry-sectors)

## Facility Dun and Bradstreet Number(s) (Section 4.6)





# Part I: Facility Identification (continued)



## Parent Company Information (Section 5)

- U.S. parent company name (Section 5.1)
- U.S. parent company Dun and Bradstreet number (Section 5.2)
- Foreign parent company name, if applicable (Section 5.3)
- Foreign parent company Dun and Bradstreet number, if applicable (Section 5.4)
- TRI-MEweb preloads standardized Parent Company names and D&B number for prior TRI reporters. Reporters may change these preloaded names, if necessary.
- For new TRI reporters, TRI-MEweb has a list of standardized Parent Company names. If reporters cannot find the correct name from the provided list, they should enter a new name.

**See the Parent Company Definition guidance document for interpreting the parent company definitions.**

**To verify the accuracy of facility and parent company D&B number and name, go to: [www.dnb.com/duns-number/lookup.html](http://www.dnb.com/duns-number/lookup.html)**



# Part II: Chemical-Specific Information

## Toxic Chemical Identify or Mixture Component Identity (Sections 1 and 2)

**Most submitted forms use these sections to identify the TRI-listed chemical being reported:**

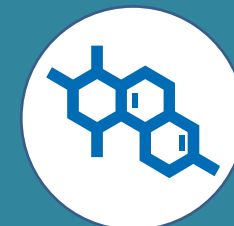
- CAS Registry Number or Chemical Category Code (Section 1.1)
- Chemical or Chemical Category Name (Section 1.2)

**If the supplier withholds the chemical name as a trade secret:**

- Generic Chemical Name Provided by Supplier (Section 2.1)
- Do not report chemical name or CAS Registry number.

**If claiming chemical name as a trade secret:**

- Generic Chemical Name (Section 1.3)
- Do not report chemical name or CAS Registry Number on the sanitized form.

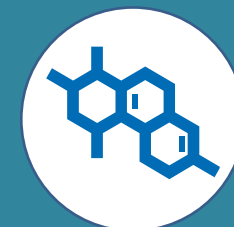


# Activities and Uses

## Activities and Uses of the TRI-listed Chemical at the Facility (Section 3)

- Check all applicable boxes reflecting all manufacture, process, and otherwise use activities.
- Report only activities taking place at reporting facility.
- Identification of specific subcategories are required for processing and otherwise use activities.

| SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY<br>(Important: Check all that apply.)                                                                                                                      |                                                    |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.1                                                                                                                                                                                                                             | Manufacture the toxic chemical:                    | 3.2                                                                                                                                                                                                                                                                                          | Process the toxic chemical:                                                                                                                                            |
| a. <input type="checkbox"/> Produce                                                                                                                                                                                             | b. <input type="checkbox"/> Import                 |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                        |
| If Produce or Import<br>c. <input type="checkbox"/> For on-site use/processing<br>d. <input type="checkbox"/> For sale/distribution<br>e. <input type="checkbox"/> As a byproduct<br>f. <input type="checkbox"/> As an impurity |                                                    | a. <input type="checkbox"/> As a reactant<br>b. <input type="checkbox"/> As a formulation component<br>c. <input type="checkbox"/> As an article component<br>d. <input type="checkbox"/> Repackaging<br>e. <input type="checkbox"/> As an impurity<br>f. <input type="checkbox"/> Recycling | Enter 4-digit code(s) from instruction package<br><input type="text"/><br><input type="text"/><br><input type="text"/><br><input type="text"/><br><input type="text"/> |
| 3.3                                                                                                                                                                                                                             | Otherwise use the toxic chemical:                  |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                        |
| a. <input type="checkbox"/> As a chemical processing aid                                                                                                                                                                        | b. <input type="checkbox"/> As a manufacturing aid | c. <input type="checkbox"/> Ancillary or other use                                                                                                                                                                                                                                           | Enter 4-digit code(s) from instruction package<br><input type="text"/><br><input type="text"/><br><input type="text"/><br><input type="text"/>                         |



# Maximum On-Site Amount

Select appropriate code indicating the maximum quantity on site during the reporting year (Form R, Part II Section 4).

Use maximum total (non-exempt) amount present at one time during reporting year, even if the TRI-listed chemical is present at more than one location at the facility.

- Based on amount in storage, process, and wastes
- Maximum amount on site may differ from the Tier II-reported maximum amount on site value.
  - Tier II is usually by mixtures, while Form R is chemical-specific.
  - Tier II excludes hazardous wastes, while Form R does not.

| WEIGHT RANGE IN POUNDS |             |                     |
|------------------------|-------------|---------------------|
| Range Code             | From        | To                  |
| 01                     | 0           | 99                  |
| 02                     | 100         | 999                 |
| 03                     | 1,000       | 9,999               |
| 04                     | 10,000      | 99,999              |
| 05                     | 100,000     | 999,999             |
| 06                     | 1,000,000   | 9,999,999           |
| 07                     | 10,000,000  | 49,999,999          |
| 08                     | 50,000,000  | 99,999,999          |
| 09                     | 100,000,000 | 499,999,999         |
| 10                     | 500,000,000 | 999,999,999         |
| 11                     | 1 billion   | More than 1 billion |



# Reporting Releases and Other Waste Management

**In the following sections, facilities provide quantitative data regarding TRI-listed chemical releases and other waste management including:**

- Quantity of the TRI-listed chemical entering each environmental medium on site (Section 5)
- Transfers to other off-site locations (Section 6)
- On-site waste treatment, energy recovery, and recycling methods and quantities (Sections 7, 8.2, 8.4, and 8.6)





# Tools and Data Sources for Release and Other Waste Management Calculations

- Previous years' Form Rs and documentation
- Process flow diagrams
- Environmental monitoring data
- Permit applications
- EPCRA, CERCLA, RCRA, NPDES, CAA, and other env. reports
- Waste management manifests, invoices, and waste profiles
- Engineering calculations and other notes
- EPA guidance (AP-42, WebFIRE, TANKS, WATER9)





# Estimating Quantities Released or Otherwise Managed as Waste

- Consider all routine and non-routine sources of toxic chemical releases and other waste streams.
- Facilities must use their best available information, or reasonable estimates.
- TRI does not require additional monitoring, but it does require the best reasonable approach for making all calculations.
- Data and approach must be documented and should be consistent.
- The upcoming slides give an overview of the process.





# Data Precision



## EPA allows using two significant figures when reporting releases and other waste management estimates.

- The number of significant figures is typically the number of non-zero digits.
- If the estimate is more precise, additional significant figures may be used based on precision of data used to calculate estimate.
  - Regardless of estimation precision, however, non-CSC chemical quantities should be entered in whole numbers in TRI-MEweb.
  - Note that certain waste management quantities calculated automatically by TRI-MEweb may include up to two decimals.

## For estimates of non-CSC TRI-listed chemicals under 1,000 pounds, a range code can be used\*:

- A= 1-10 pounds; B = 11-499 pounds; C = 500-999 pounds
  - **Note:** *If you enter a range code, TRI data tools used by the public will display the midpoint of the range (e.g., 5, 250, or 750 lb)*

*\* Note that similar quantities reported in Section 8 of Form R must be actual values and not ranges. The Section 8 Calculator in TRI-MEweb will assume the midpoint of any ranges reported in Sections 5 and 6 when calculating quantities for Section 8. If you do not wish to use the midpoint of the range in Section 8 calculations, it is best to enter a value rather than a range in Section 5*



# Data Precision (continued)



**For chemicals of special concern, facilities must report releases and other waste management quantities at a level of precision supported by the data and estimation techniques used.**

**For chemicals of special concern, 0.1 pounds (100 micrograms for dioxins) is the smallest amount required to be reported.**

- Estimates < 0.05 pounds (< 50 micrograms for dioxins) can be rounded down to zero pounds.

**TRI-MEweb will allow for decimal reporting for chemicals of special concern (e.g., 9.3 pounds, 0.2 pounds).**



# “NA” vs. “0”

**All data elements in Sections 5, 6, 7, and 8 must be completed. If you determine that there was no release, transfer, or waste management quantity:**

- Use “NA” (not applicable) when there is no possibility of the TRI-listed chemical being released to or otherwise managed as waste in that media (e.g., facility has no on-site landfill; has not transferred any waste to an off-site location; has not performed on-site recycling) OR
- Use “0” when no release occurs or < 0.5 pounds of a non-CSC TRI-listed chemical from a waste stream is directed towards that medium.
  - Example: Discharge to water is zero; however, a release possible if control equipment fails.
  - Must indicate a Basis of Estimate code (i.e., M1, M2, C, E1, E2, O) for all numerical estimates, including “0.”



# Basis of Estimate Codes

One of the following “Basis of Estimate” codes must be listed on the Form R for each release and off-site transfer quantity reported:

- Continuous monitoring (M1)
- Periodic or random monitoring (M2)
- Mass balance calculation (C)
- Published emissions factors (E1)
- Site-specific emissions factors (E2)
- Engineering calculations (O)
  - Everything NOT M1, M2, C, E1 or E2 above, such as:
    - Best engineering judgment
    - Estimated removal efficiencies
    - Non-chemical-specific and non-published emission factors

Use the code on the Form R for the method used to estimate the largest portion of the release.



# Estimating Releases When No Data Are Available

## ► Example

**Metal dust observed on floor near or within metalworking operation indicates fugitive air emission occurring and possible transfer off-site; however, no additional data are available:**

- Work with operations personnel familiar with the operation to gather relevant information about the releases or waste generation.
- Document the calculations performed and keep records for future reporting and in case of audit.
- Basis of Estimate code 'O' will likely be used.
- Range codes may be used in some situations.



# Release or Disposal Quantity Entering Each Medium

Report total releases or disposal of the chemical to each environmental medium on site (Section 5):



## Air:

- Fugitive or Non-Point Air Emissions (Section 5.1)
- Stack or Point Air Emissions (Section 5.2)



## Water:

- Discharges to Receiving Streams or Water Bodies (Section 5.3)



## Land:

- Underground Injection Wells (Section 5.4)
- Disposal to Land On Site (Section 5.5)

**Quantities reported should reflect the sum of all annual releases or disposal from all sources.**



# On-Site Emissions to Air

Enter total fugitive releases of the TRI-listed chemical, including leaks, evaporative losses, building ventilation, or other non-point air emissions (Section 5.1).

Enter total releases to air from point sources, including stacks, vents, pipes, ducts, storage tanks, or other confined air streams (Section 5.2).

## Data sources commonly used for air emissions calculations:

- Air permit applications
- CAA Title V air inventories
- Process and production data
- Published emission factors
- Facility-specific monitoring data and emissions factors



# On-Site Wastewater Discharges

## Releases to streams or waterbodies (Section 5.3)

- Use the map provided in TRI-MEweb to select the receiving **Stream or Waterbody Name**. Select as many unique receiving streams or waterbodies as needed. If not found, manually enter the name.
- TRI-MEweb will automatically provide the **Reach Code** (optional) that describes the specific outfall location.
- Enter the **Total Quantity** of the TRI-listed chemical released to each receiving stream or waterbody.
- Enter the numeric **Basis of Estimate** code.
- Indicate **Percentage from Stormwater** of total quantity released (choose NA if not applicable).
- Indicate **NA** for Section 5.3 if the facility does not discharge the TRI-listed chemical to streams or waterbodies.

| Stream or Water Body Name | Reach Code (optional) | Total Quantity (lbs) ?                                                                     | Numeric Basis ? | Basis of Estimate Code ?                                | % from Stormwater ?                                            | Edit                                | Delete                                |
|---------------------------|-----------------------|--------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------|----------------------------------------------------------------|-------------------------------------|---------------------------------------|
| Charles River             | 01090001000111        | <input type="text" value="313"/><br>or<br><input type="button" value="Select a Range..."/> |                 | <input type="text" value="M2 - Monitoring, Period..."/> | <input type="text"/><br><input checked="" type="checkbox"/> NA | <input type="button" value="Edit"/> | <input type="button" value="Delete"/> |





# Wastewater Considerations



## Include all on-site sources:

- Process outfalls such as pipes and open trenches
- Releases from on-site wastewater treatment systems
- Contribution from stormwater runoff (including unchanneled runoff)

**Transfers to publicly-owned treatment works (POTW) (Section 6.1) and other off-site wastewater treatment facilities (Section 6.2) are reported separately**

## Wastewater Data Sources:

- Discharge monitoring report (DMR) or related wastewater monitoring reports
- Other monitoring data such as permit applications
- Flowmeter data
- If no monitoring data exists, estimate based on process knowledge and/or mass balance calculation



# On-Site Underground Injection Wells

## Underground injection to Class I wells (Section 5.4.1)

- Enter total amount of Section 313 chemical injected into Class I wells at facility and basis of estimate code.

## Underground injection to Class II - V wells (Section 5.4.2)

- Enter total amount of Section 313 chemical injected into Class II - V wells at facility and basis of estimate code.

| Form Section                                                     | Not Applicable           | Total Quantity (lbs) ?                           | Numeric Basis ? | Basis of Estimate ?          |
|------------------------------------------------------------------|--------------------------|--------------------------------------------------|-----------------|------------------------------|
| Land Releases                                                    |                          |                                                  |                 |                              |
| Section 5.4.1: On-site Underground Injection: Class I Wells ?    | <input type="checkbox"/> | <input type="text"/> or<br>Select a Range Code ▾ |                 | Select a Basis of Estim... ▾ |
| Section 5.4.2: On-site Underground Injection: Class II-V Wells ? | <input type="checkbox"/> | <input type="text"/> or<br>Select a Range Code ▾ |                 | Select a Basis of Estim... ▾ |

**Note:** Basis of estimate code must be entered for all quantities.



# Other Disposal to Land On-Site

**Enter the quantity of toxic chemical entering each on-site land disposal option (Section 5.5).**

- On-site landfills: RCRA Subtitle C (Section 5.5.1A)
- On-site landfills: other (Section 5.5.1B)
- On-site land treatment and application farming (Section 5.5.2)
- On-site surface impoundments: RCRA Subtitle C (Section 5.5.3A)
- On-site surface impoundments: Other (Section 5.5.3B)
- Other disposal (includes spills or leaks to land) (Section 5.5.4)

**Quantities released to air or water during the reporting year of the initial release to land (e.g., volatilization from surface impoundments) are not included in the land disposal quantity.**

**A facility may indicate that on-site disposal includes quantities of the chemical being managed in “waste rock piles.”**





# Off-Site Transfers

## Transfer(s) of the Toxic Chemical in Wastes to Off-Site Locations (Section 6)

- These data include off-site receiving facility location.
- Report quantities of chemical sent off-site to each POTW or other locations for recycling, energy recovery, waste treatment, or disposal.
- Report only total quantity of chemical transferred off site, not the quantity of entire waste stream mixture.
- Range codes may be used for transfers of non-CSC chemicals under 1,000 lb.
- Basis of estimate codes are required for each transfer.



# Transfers to POTWs

## Discharges to Publicly Owned Treatment Works (Section 6.1)

- Include name and address for the receiving POTW
  - POTW Widget in TRI-MEweb helps facilities identify their POTW
- For each different ultimate disposition of the chemical following the transfer to the POTW, enter the quantity, basis of estimate, and P code.

## Facilities provide the ultimate disposition of toxic chemicals at POTWs using P codes.

- P codes are listed in the Reporting Forms and Instructions.
- For facilities that do not know ultimate disposition details, TRI-MEweb will apply distribution removal and release percentages to the total quantity of a chemical transferred to a POTW to help populate P code reporting.

### POTW Disposition Calculator

Because you do not know the ultimate disposition of the transferred quantities of this chemical, TRI-MEweb will use estimated and experimental treatment rates and other default values for certain chemicals to help you report this data element. If you have better information on the final disposition of the chemical readily available then use that information instead. Note that you'll be able to edit these quantities within the Form R if you have more precise information.

Using this tool will replace any previously entered transfer totals for DEER ISLAND WASTEWATER TREATMENT FACILITY. If you would like to enter your transfer totals manually, click **Cancel**.

Please provide the total quantity of the chemical transferred to this POTW. TRI-MEweb will populate Section 6.1 for this POTW using Table IV percentage distribution rates for Cyclohexane. Note that TRI-MEweb will assign a default basis of estimate of E1 to these transfer amounts.

Total Quantity: 1,000

Calculate using total provided

| Quantity Transferred to this POTW lbs | Basis Of Estimate               | Waste Management Type                           |
|---------------------------------------|---------------------------------|-------------------------------------------------|
| 60 (6% to 8.1c)                       | E1 - Emission Factor, Published | P33 - Sludge to disposal                        |
| 190 (19% to 8.1d)                     | E1 - Emission Factor, Published | P36 - Other or Unknown Disposal                 |
| 750 (75% to 8.7)                      | E1 - Emission Factor, Published | P39 - Experimental and Estimated Treatment Data |

☐ Indicate that Table IV estimates were used for this POTW transfer in Section 9.1 (Miscellaneous Information)

Use Totals

Cancel

# Other Off-Site Transfers

## Enter transfers to other off-site locations (Section 6.2).

- Include name, address, and EPA identification (RCRA ID) number of the receiving facility.
- Enter quantity, basis of estimate, and M code for each different waste management activity (waste treatment, disposal, recycling, and energy recovery).
- M codes are listed in the Reporting Forms and Instructions.
- Check “NA” box to indicate no transfers to off-site locations.

## Common data and tools used to complete this section:

- Waste manifests and vendor receipts
- RCRA reports
- Waste characterization - analyses, profiles





# Tips for Off-Site Waste Transfers



## Identify all sources of off-site transfers of TRI chemicals in waste. These include:

- Hazardous waste
- Non-hazardous waste (e.g., waste oil and coolant)
- Trash
- Scrap metal (reuse versus recycle)
- Container residue: RCRA empty is NOT EPCRA empty
- BE COMPREHENSIVE!

## Identify basis of estimate sources for waste composition data

## Identify final disposition of each Section 313 chemical:

- Indicate disposal, waste treatment, energy recovery, recycling by selecting the appropriate P or M code.
- These codes are provided in Sections 6.1 and 6.2 of the Reporting Forms and Instructions.

# Wastes Otherwise Managed On-Site



**On-Site Waste Treatment**



**Energy Recovery**



**Recycling Methods (Section 7)**

## ► Examples of on-site waste management include:

- Air pollution control devices
- Wastewater treatment processes
- Incineration or thermal destruction
- Chemical oxidization
- Neutralization
- Energy recovery devices
- Recycling devices



# Waste Treatment Methods and Efficiency

Report each waste treatment method that each waste stream containing the TRI-listed chemical undergoes (Section 7A).

- Treatment methods include destruction or physical removal.
- Include all methods even if a method has no effect on the chemical.
- Report the efficiency of the waste treatment methods at eliminating the chemical from the waste stream.
- Enter total quantity treated on-site for all methods in Section 8.6.
- Option to provide additional details about waste treatment in Section 8.11: Optional Pollution Prevention Information.

| Treatment Profile                                  | General Waste Stream Code        | Waste Treatment Method(s) Sequence                                                                                                                                        | Waste Treatment Efficiency %                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air Emissions Controls                             | A - Gaseous (gases, vapors,... × | <div>Select Treatment Method(s) Add</div> <div>1: A05 - Electrostatic precipitator X</div> <div>2: A07 - Other air emission treatment X</div> <div>3: A01 - Flare X</div> | <div>Select an Efficiency Range Code Remove</div> <div>E1 - Greater than 99.9999%</div> <div>E2 - Greater than 99.99%, but less than or equal to 99.9999%</div> <div>E3 - Greater than 99%, but less than or equal to 99.99%</div> <div>E4 - Greater than 95%, but less than or equal to 99%</div> <div>E5 - Greater than 50%, but less</div> |
| <div>Select Profile to Add</div>                   |                                  | <div>Add</div>                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                               |
| <div>Edit Profile Delete Profile New Profile</div> |                                  |                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                               |



# Energy Recovery Methods and Quantity

**Enter on-site energy recovery methods (Section 7B) and total quantity (Section 8.2) for TRI-listed chemical.**

- Chemical must be combustible and have a significant heating value (>5,000 BTU/lb).
- Combustion unit is integrated into an energy recovery system (e.g., industrial furnace, industrial kiln, or boiler).

**Section 7B: On-site Energy Recovery Methods and Quantity** [Need Reporting Help?](#)

If you did not have on-site energy recovery applied to any waste stream containing the TRI chemical, click the "Not Applicable" check box below.

☐ Not Applicable

If you did apply energy recovery to this TRI chemical, please enter the quantity of the TRI chemical treated burned for energy recovery on-site during the reporting year and select up to 3 energy recovery method codes using the selection lists provided.

Quantity Used for Energy Recovery On-site (lbs):

**Energy Recovery Methods:**

| First Method                                                                                                                   | Second Method                    | Third Method                     |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|
| Select an Energy Recovery Meth...<br><div>U01 - Industrial Kiln<br/>U02 - Industrial Furnace<br/>U03 - Industrial Boiler</div> | Select an Energy Recovery Method | Select an Energy Recovery Method |

**Enter codes in descending order by quantities combusted.**

**TRI-MEweb collects methods and quantity data simultaneously.**

**Option to provide additional details about energy recovery in Section 8.11.**



# Recycling Methods and Quantity

Enter recycling methods used (Section 7C) and total quantity for on-site recycling (Section 8.4) of the TRI-listed chemical.

- Codes for recycling methods used are found in EPA's TRI Reporting Forms and Instructions document.
- Do not include energy recovery processes.

Enter codes in descending order by quantities recycled.

TRI-MEweb collects methods and quantity data simultaneously.

Option to provide additional details about recycling in Section 8.11.

Section 7C: On-site Recycling Methods and Quantity [Need Reporting Help?](#)

If you did not have on-site recycling applied to any waste stream containing the TRI chemical, click the "Not Applicable" box below.

☐ Not Applicable

If you did recycle this TRI chemical, please enter the quantity of the TRI chemical recycled on-site during the reporting year and select up to 2 recycling method codes using the selection lists provided.

Quantity Recycled On-site (lbs):

Recycling Methods:

| First Method                  | Second Method                    |
|-------------------------------|----------------------------------|
| H39 - Other Reuse or Recovery | Select a Recycling Method        |
|                               | H20 - Solvents/Organics Recovery |





# Release and Other Waste Management Estimates



## Tips for accurate release estimates:

- Always use your best available information.
- Estimate the quantity of the TRI-listed chemical, not the entire waste stream.
- Differentiate fugitive from stack air emissions.
- Zero air emissions for volatile organic compounds are unlikely.
- Watch out for releases of TRI-listed chemicals with qualifiers.
- Check your math and document your work!

## Result of release estimation errors:

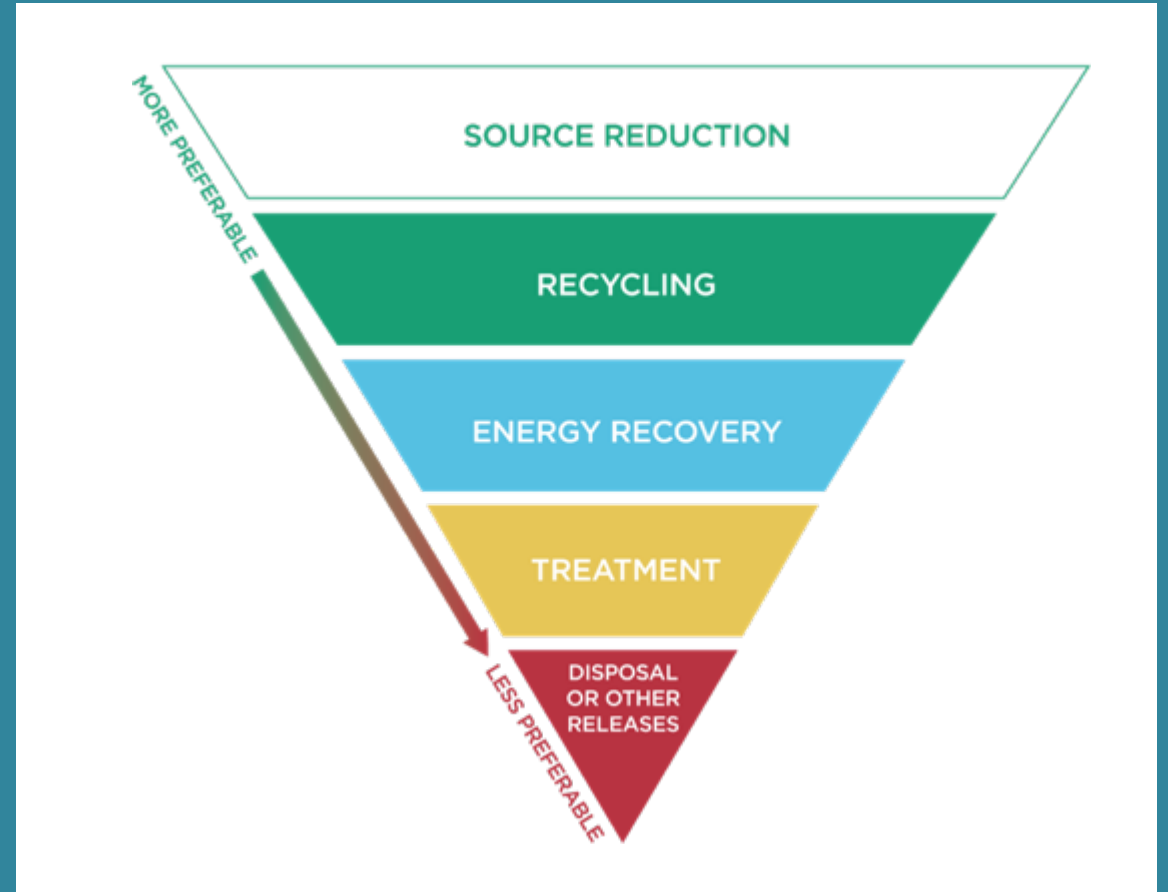
- Incorrect release estimates and inconsistencies could carry over from year to year.



# Source Reduction and Waste Management

Section 8 of Form R focuses on pollution prevention mandated by Section 6607 of the Pollution Prevention Act of 1990 (PPA).

The waste management hierarchy shows that pollution should be reduced at the source whenever feasible and released to the environment only as a last resort.



# Production-Related Waste Managed (Section 8.1-8.7)

**The sum of sections 8.1 through 8.7 represents the total quantity of waste generated through regular production activities at your facility for the reporting year.**

**Waste management quantities must be reported for prior year, current reporting year, following year, and second following year.**

- Prior Year: TRI-MEweb automatically calculates Section 8.1 through 8.7 quantities from prior submissions (or indicates N/A if no report was submitted).
- Current Year: TRI-MEweb automatically calculates Section 8.1, 8.3, 8.5, and 8.7 quantities from Section 5 and 6 data. Reporters must enter total on-site energy recovery, recycling, and treatment quantities (Section 8.2, 8.4 and 8.6).
- Following Year and Second Following Year: Reporters must provide estimates for Section 8.1 – 8.7.



# Production-Related Waste Managed (Section 8.1-8.7)

| SECTION 8. SOURCE REDUCTION AND WASTE MANAGEMENT  |                                                                                                                |                                          |                                                      |                                              |                                                     |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|
|                                                   |                                                                                                                | Column A<br>Prior Year<br>(pounds/year*) | Column B<br>Current Reporting<br>Year (pounds/year*) | Column C<br>Following Year<br>(pounds/year*) | Column D<br>Second Following Year<br>(pounds/year*) |
| <b>8.1 – 8.7 Production-Related Waste Managed</b> |                                                                                                                |                                          |                                                      |                                              |                                                     |
| <b>8.1a</b>                                       | Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills  |                                          |                                                      |                                              |                                                     |
| <b>8.1b</b>                                       | Total other on-site disposal or other releases                                                                 |                                          |                                                      |                                              |                                                     |
| <b>8.1c</b>                                       | Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills |                                          |                                                      |                                              |                                                     |
| <b>8.1d</b>                                       | Total other off-site disposal or other releases                                                                |                                          |                                                      |                                              |                                                     |
| <b>8.2</b>                                        | Quantity used for energy recovery on-site                                                                      |                                          |                                                      |                                              |                                                     |
| <b>8.3</b>                                        | Quantity used for energy recovery off-site                                                                     |                                          |                                                      |                                              |                                                     |
| <b>8.4</b>                                        | Quantity recycled on-site                                                                                      |                                          |                                                      |                                              |                                                     |
| <b>8.5</b>                                        | Quantity recycled off-site                                                                                     |                                          |                                                      |                                              |                                                     |
| <b>8.6</b>                                        | Quantity treated on-site                                                                                       |                                          |                                                      |                                              |                                                     |
| <b>8.7</b>                                        | Quantity treated off-site                                                                                      |                                          |                                                      |                                              |                                                     |



# Section 8: Relationship to Sections 5 and 6

## PART II. SECTION 8.1 – 8.7

**8.1a** Total on-site disposal to Class I UIC wells, RCRA & other landfills

$$= 5.4.1 + 5.5.1A + 5.5.1B - 8.8^*$$

**8.1b** Total other on-site disposal or other releases

$$= 5.1 + 5.2 + 5.3 + 5.4.2 + 5.5.2 + 5.5.3A + 5.5.3B + 5.5.4 - 8.8^*$$

**8.1c** Total off-site disposal to Class I UIC wells, RCRA & other landfills

$$= 6.1 (P33, P34) + 6.2 (M64, M65, M81) - 8.8^*$$

**8.1d** Total other off-site disposal or other releases

$$= 6.1 (P30, P31, P32, P35, P36) + 6.2 (M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, M99) - 8.8^*$$

**8.3** Off-site energy recovery

$$= 6.2 (M56, M92) - 8.8^*$$

**8.5** Off-site recycling

$$= 6.2 (M20, M24, M26, M28, M93) - 8.8^*$$

**8.7** Off-site treatment

$$= 6.1 (P37, P38, P39) + 6.2 (M50, M54, M61, M69, M95) - 8.8^*$$

*\* Section 8.8 includes quantities of toxic chemicals disposed of or otherwise released on site or managed as a waste off site due to remedial actions, catastrophic events, or one-time events not associated with the production process.*



# Section 8: Relationship to Section 7

## PART II. SECTION 8.1 – 8.7

8.2

### **On-site energy recovery**

Determine quantity for activities described in 7B.

Report quantity of the chemical combusted in energy recovery unit.

8.4

### **On-site recycling**

Determine quantity for activities described in 7C.

Report quantity of the chemical recycled.

8.6

### **On-site treatment**

Determine quantity of the chemical for activities on waste stream described in 7A.

Report quantity of the chemical destroyed (i.e., consider efficiency).

Metals and metal category compounds cannot be reported here.

# Non-Production-Related Waste Managed

**Enter the quantity of TRI-listed chemical released into the environment or transferred off site (Section 8.8) due to:**

- Remediation
- Catastrophic events (e.g., earthquake, hurricane, fire, floods)
- Other one-time events not associated with production processes (e.g., pipe rupture due to unexpected weather)

**Does not include quantities treated, recovered for energy, or recycled ON SITE.**

**Quantities in Sections 8.1 through 8.7 should not include amounts reported in Section 8.8.**

- TRI-MEweb calculator will deduct non-production-related waste quantities from Sections 8.1 through 8.7.





# Production Ratio or Activity Ratio



## Production ratio or activity ratio (Section 8.9)

- A ratio of production or activity involving the Section 313 chemical in the reporting year to production or activity in the previous year.
- Puts year-to-year changes in chemical quantities released and managed as waste into the context of production.

## Reporting tips

- Consider using a production ratio when production is directly related to the amount of chemical used or produced.
- Consider using an activity ratio when the chemical is "otherwise used" and the amount is determined by a variable other than production.
- The Production Ratio/Activity Ratio is a ratio, not a percent change.
- You can provide information on the variable you used in your ratio in the "Optional Miscellaneous Info" section using the button in TRI-MEweb.

**TRI-MEweb Production Ratio Wizard helps calculate the Production Ratio or Activity Ratio**



# Source Reduction Activities



**Report Source Reduction activities implemented for the chemical and the methods used to identify those activities (Section 8.10).**

- Use listed codes to report source reduction activities. Codes are organized into five categories.
- Include only new source reduction activities implemented, started, or completed during the reporting year.
- Examples of Source Reduction Activities:
  - Product redesign
  - Material substitution (e.g., switched to aqueous cleaner)
  - Process or equipment changes (e.g., implemented new technique, adjusted or replaced equipment)
  - Changed production schedule to minimize equipment changeovers

**You may also report the estimated annual reduction associated with each activity**

- The reduction range codes reflect the percentage of the annual amount of chemical waste generation mitigated relative to the amount that would have been generated without the source reduction activity.

**Option to provide additional details about source reduction activities in Section 8.11.**



# Optional Pollution Prevention (P2) Information

## Report additional information in the open-ended P2 text fields (Section 8.11)

- This is an opportunity to provide greater details about your source reduction activities, waste management practices, or other pollution prevention activities including barriers preventing P2 implementation.
- Optional comments may be used to publicly highlight your facility's actions to reduce the amount of toxic chemicals entering the environment.
- Any comments entered in TRI-MEweb associated with Sections 7 and 8.10 are prepopulated in Section 8.11.
- For additional guidance, see [www.epa.gov/tri/p2](http://www.epa.gov/tri/p2)

## Topics on which you may elect to provide information include:

- **Source Reduction**
- **Barriers to Source Reduction**
- **Waste Management** including recycling, energy recovery, and treatment practices
- **Other information** such as general environmental management

## Reporting tips

- Be specific – e.g., what new materials were used, how was product design changed, how were processes altered.
- Provide useful URLs and resources used to identify or achieve source reduction.
- Put information unrelated to P2 in Section 9.1.



# Optional Miscellaneous Information

## Optional Miscellaneous Information (Section 9.1, Form R; Section 9.2, Form A)

- Facility can provide any useful additional information related to any portion of the Form R or Form A submission in this new data field.
- Examples of information to include:
  - Changes in production
  - Facility closures
  - Staffing changes
  - Calculation methods, e.g., emission factors
  - Explanation of data quality alerts

## TRI-MEweb provides a pick-list of suggested topics for this section.

- When providing optional miscellaneous information, it is helpful to check the box next to the topic to which your information pertains.



## Section 6: Form R Calculation Examples





# Fugitive Air Emissions Example: Section 5.1

## ► Example

### Using a Mass Balance Basis of Estimate (C):

- 5,000 pounds of a volatile solvent are added during the year as part of the manufacture of a liquid adhesive. 4,950 pounds of the solvent are contained in the final liquid adhesive product. It is assumed all losses are due to uncontrolled evaporations
  - $\text{Input (5,000 lb)} = \text{Output (4,950 lb)} + \text{Loss to Air (50 lb)}$
  - Fugitive emissions to air from this process = 50 lb
  - Assuming no other fugitive emissions to air, the facility would report 50 lb released to air for Section 5.1 and basis of estimate 'C'

**Law of Mass Balance: What Goes In = What Comes Out**

# Stack Air Emissions Example:

## Section 5.2

### Example using an Emission Factor basis of estimate (E1):

- 500,000 tons of coal are combusted in a fluidized bed combustor.
- EPA emission factor: 0.11 lb mercury emitted / 1,000,000 lb coal combusted.
- $500,000 \text{ tons} \times 2,000 \text{ pounds / ton} \times (0.11 \text{ lb mercury} / 1,000,000 \text{ lb coal}) = 110 \text{ lb mercury}$ .
- 110 pounds of mercury are released through the stack.
- Note: A portion of mercury may be present in resulting ash and would need to be reported as such.



# Wastewater Discharges Example: Section 5.3

Calculate the yearly pounds of methanol discharged using the following data concerning wastewater discharges of methanol:

| DATE           | CONC. (MG/L) | FLOW (MGD) | AMT. (LB/DAY) |
|----------------|--------------|------------|---------------|
| 3/1            | 1.0          | 1,0        | 8.33          |
| 9/8            | 0.2          | 0.2        | 0.33          |
| Average = 4.33 |              |            |               |

MGD = million gallons per day  
1 mg/l = 8.33 lb/million gal

Assuming 365 days of discharge and no other sources:

- $4.33 \text{ lb/day} \times 365 \text{ day} = 1,580 \text{ lb total release}$
- Basis of Estimate Code: M2
- Include receiving stream or water body name and Reach Code (optional)
- Indicate NA for contribution from stormwater

# POTW Transfers Example: Section 6.1

## Example using an Engineering Calculations basis of estimate (O):

- A wet grinding process generates wastewater with 300 lb of lead (contained in particulates) during the year. This wastewater undergoes on-site filtration prior to being sent to the POTW. Manuals from the filter equipment vendor indicate a 95% removal efficiency for particulates of this size.
  - $300 \times 0.95 = 285$  lb removed from the wastewater
  - $300 - 285 = 15$  pounds remaining in the wastewater after filtration
  - 15 pounds of lead are transferred off site to the POTW





# Production and Activity Ratio

## Examples: Section 8.9

### Example (Production Ratio): Oven manufacturing

- 40,000 ovens assembled (Current RY) = 1.14
- 35,000 ovens assembled (Prior RY)

### Example (Activity Ratio): Tank washouts

- 50 Washouts (Current RY) = 0.83
- 60 Washouts (Prior RY)

### Additional Production / Activity Variable Examples, by Industry

- Refractory Manufacturing: Tons of brick manufactured
- Chemical Wholesalers: Gallons of glycol ethers packaged
- Electric Power Generation: Megawatt-hours of electricity produced
- National Security: Man-days of training per year
- Synthetic Dye Manufacturing: Number of color changeovers
- Waste Treatment and Disposal: Tons of waste landfilled on-site



## Section 7: Alternate Threshold Rule (Form A)





# TRI Form A Certification Statement



**The “TRI Alternate Threshold for Facilities with Low Annual Reportable Amounts” gives facilities the option to submit a simplified TRI Form A Certification Statement.**

- Form A includes facility identification information and the chemical or chemical category identity.
- Form A does not include release, other waste management, or source reduction reporting.

**To be eligible to submit a Form A for a chemical, the following criteria must be met:**

- The chemical must not be a chemical of special concern,
- The total amount manufactured, processed, or otherwise used does not exceed 1 million pounds for that chemical, and
- The facility does not exceed 500 pounds for the total **annual reportable amount** for that chemical.



# TRI Form A Certification Statement



**The annual reportable amount is equal to the combined total quantities of the following waste management activities:**

- Released or disposed of at the facility
- Treated, recycled, or combusted for the purpose of energy recovery at the facility
- Transferred from the facility to off-site locations for the purpose of recycling, energy recovery, treatment, and/or disposal

**Facilities must retain Alternate Threshold calculations documentation for three years from the submission of the Form A.**

**If a facility submits a Form A and does not meet the qualifying criteria, it may result in an enforcement action.**

## Section 8: TRI-MEweb Introduction



# TRI-MEweb and Submitting Via CDX



**EPA requires electronic filing via TRI-MEweb.**

**EPA will not accept any paper submissions except for trade secret claims.**

**TRI-MEweb supports new reporting, plus revisions and withdrawals for RY 1991 through the current year.**

- TRI-MEweb resources, including tutorials, are available at [www.epa.gov/tri/trimeweb](http://www.epa.gov/tri/trimeweb).



**Use paper form only for trade secret reporting.**

- Information about trade secret reporting at [www.epa.gov/tri/rfi](http://www.epa.gov/tri/rfi)

**All TRI reporting forms must be prepared and certified by July 1 following the calendar year's activities (aka Reporting Year (RY)).**

- July 1, 2026 deadline for RY 2025 (January 1-December 31, 2025) activities



# Accessing TRI-MEweb



## Access TRI-MEweb through EPA's Central Data Exchange (CDX).

- CDX Login: <https://cdx.epa.gov>.
- TRI-MEweb users must have a CDX account.
- Select TRI-MEweb user role: Preparer or Certifying Official.
  - Preparers can create, prepare, revise, and withdraw TRI forms.
  - Certifying Officials have Preparers' abilities plus can certify forms. Certifying Officials should be in a senior management role at the facility.

## Within TRI-MEweb, new users must gain access to their facility profile:

- Option 1: Enter TRIFID and Technical Contact name.
- Option 2: Enter the facility-specific access code.
- Option 3: Begin a new facility profile if the facility has never reported to TRI.

**For help accessing your facility, contact the CDX helpdesk at [helpdesk@epacdx.net](mailto:helpdesk@epacdx.net) or call toll-free at (888) 890-1995**



# Signing and Certifying Forms



## New Certifying Officials must complete two requirements:

- Electronic Signature Agreement (ESA)
  - Completed only once, not annually
  - Will apply to all facility profiles
  - Option 1: Real-time ESA approval: verify user's identity electronically
  - Option 2: Mail-in signature form: minimum of 5 business days to process
- TRIFID Signature Agreement
  - The TRIFID Signature Agreement authorizes the certifying official to certify forms for the specific TRI facility.
  - Facility profiles must be added to TRI-MEweb before a TRIFID Signature Agreement Form can be signed.
  - Certifying officials must have a digitally signed TRIFID Signature Agreement for each facility profile before access to any pending submission(s) for certification is granted.

**New Certifying Officials must obtain approval of an ESA and digitally sign a TRIFID Signature Agreement(s) for each facility profile(s) before they can review and certify pending submissions.**



# Optional Facility-Level Information



**Facilities may provide optional information on facility operations.**

**Section 9.1 of the Form R and Section 9.2 of Form A allow a facility to provide optional miscellaneous information on the form submission or facility.**

**However, some types of miscellaneous information do not fit well into a TRI reporting form or arise outside of the reporting process.**

- TRI-MEweb allows you to provide optional facility-level information without preparing and submitting a TRI reporting form.
- Accessible on the Facility Management Screen: Click the Take Action button and select 'Not Reporting?'



# Optional Facility-Level Information



## Topics on which you may elect to provide information include:

- Facility name or address has changed.
- Facility contact information has changed.
- Facility closed either permanently or temporarily
- Facility did not trigger reporting due to:
  - Not having 10 or more full-time employee equivalents
  - Not being in a covered NAICS sector
  - Having fallen below reporting threshold for one or more chemicals

## Benefits of providing this information include:

- Keeps address and contact information up-to-date to help EPA contact your facility
  - Ensures email notices reach proper facility contacts
- Provides clarity on why reporting may have changed substantially
  - Could minimize need for EPA to contact facility on data quality matters



# For More Information and Assistance



**For more information on TRI requirements see the second module of this training course on advanced TRI reporting concepts.**

**For TRI reporting guidance, information and tutorials on the TRI-MEweb reporting software, and the latest changes to the TRI Program, please visit: [www.epa.gov/tri](http://www.epa.gov/tri).**

**Industry-specific and chemical-specific guidance can be found at: [https://guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:gd-list](https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-list).**

**For help accessing CDX accounts, password resets, accessing a facility, or completing an ESA, contact the CDX helpdesk: <https://cdx.epa.gov/contact>.**

| **End of Module**

# Quiz Answers



# Quiz #1: Question 1



Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

A manufacturing facility, owned by ABC Corporation, with 100 full-time employees

*Select Yes or No*

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**Answer: Yes**

**As a manufacturing facility, its primary NAICS code will be among those covered by EPCRA Section 313 (TRI). In addition, the facility employs more than 10 full-time employees. This facility would need to consider whether it has exceeded any activity thresholds for TRI chemicals or chemical categories to determine if it needed to report**

## Quiz #1: Question 2



Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, a few blocks away from the manufacturing facility described in Question 1

*Select Yes or No*

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**Answer: No**

**The facility's maintenance and warehouse activities are represented by a primary NAICS code that will not be among those covered by EPCRA 313 (TRI). In addition, the facility has fewer than 10 full-time employees. This facility would not need to report.**

## Quiz #1: Question 3



Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, next door to the manufacturing facility described in Question 1

*Select Yes or No*

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**Answer: Yes**

**The maintenance and warehouse activities are considered part of the manufacturing facility because they are on adjacent properties. Since the employee threshold is exceeded, this facility would need to consider any chemical use at the warehouse and maintenance establishment along with that of the manufacturing facility to determine if the facility needed to report.**

## Quiz #2: Question 1



A plant uses benzene as a raw material to manufacture liquid industrial adhesive. The plant adds 27,000 lb of benzene to its liquid adhesive-making operation during the reporting year, but 3,000 lb are volatilized during the operation. How much of the benzene should be applied toward the processing activity threshold?

- A. 27,000 lb      B. 24,000 lb      C. 3,000 lb

*Select your choice*

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**Answer: A is correct**

**27,000 total lb of benzene is processed. Always apply the total amount that enters a process toward the activity threshold. The quantity of benzene processed exceeds the processing threshold (25,000 lb) for chemicals with 25,000/10,000-pound reporting thresholds. Therefore, the facility would need to complete a TRI form for benzene. The quantity released to the environment would be reported on the TRI Form R.**

## Quiz #2: Question 2



If a facility processes 20,000 lb of 4,4'-Methylenedi(phenyl isocyanate) in one operation and 10,000 lb of isophorone diisocyanate in another operation during the reporting year, what should it apply towards its processing threshold for the diisocyanates category?

- A. 10,000 lb      B. 20,000 lb      C. 30,000 lb

*Select your choice*

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**Answer: C is correct**

**4,4'-Methylenedi(phenyl isocyanate) and isophorone diisocyanate are both chemicals within the diisocyanates chemical category; therefore, the quantities of each chemical processed during the reporting year should be summed. The facility has exceeded the reporting threshold for processing (25,000 lb) and would need to report for the diisocyanates category.**

## Quiz #2: Question 3



A facility processes 18,000 lb copper sulfate, 10,000 lb of cuprous oxide, and otherwise uses 12,000 lb of aqueous sulfuric acid solution in a closed system. For which TRI chemicals or chemical categories would the facility need to submit a TRI form?

A. Copper compounds and sulfuric acid   B. only copper compounds   C. only sulfuric acid

*Select your choice*

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**Answer: B is correct**

The facility has exceeded the 25,000 lb processing threshold for copper compounds ( $18,000 + 10,000 = 28,000$ ) and would need to submit a TRI form for copper compounds. The qualifier for sulfuric acid (see Section 313 Chemicals) indicates that it is only reportable in an aerosol form. Because the facility only used the sulfuric acid in an aqueous form (and does not generate acid aerosols), it does not need to consider it towards the otherwise use threshold, and no report for sulfuric acid is required.