



# Toxics Release Inventory Reporting

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## Advanced Concepts

REPORTING YEAR 2025



# TRI Training Module Agendas



## Basic Concepts Module

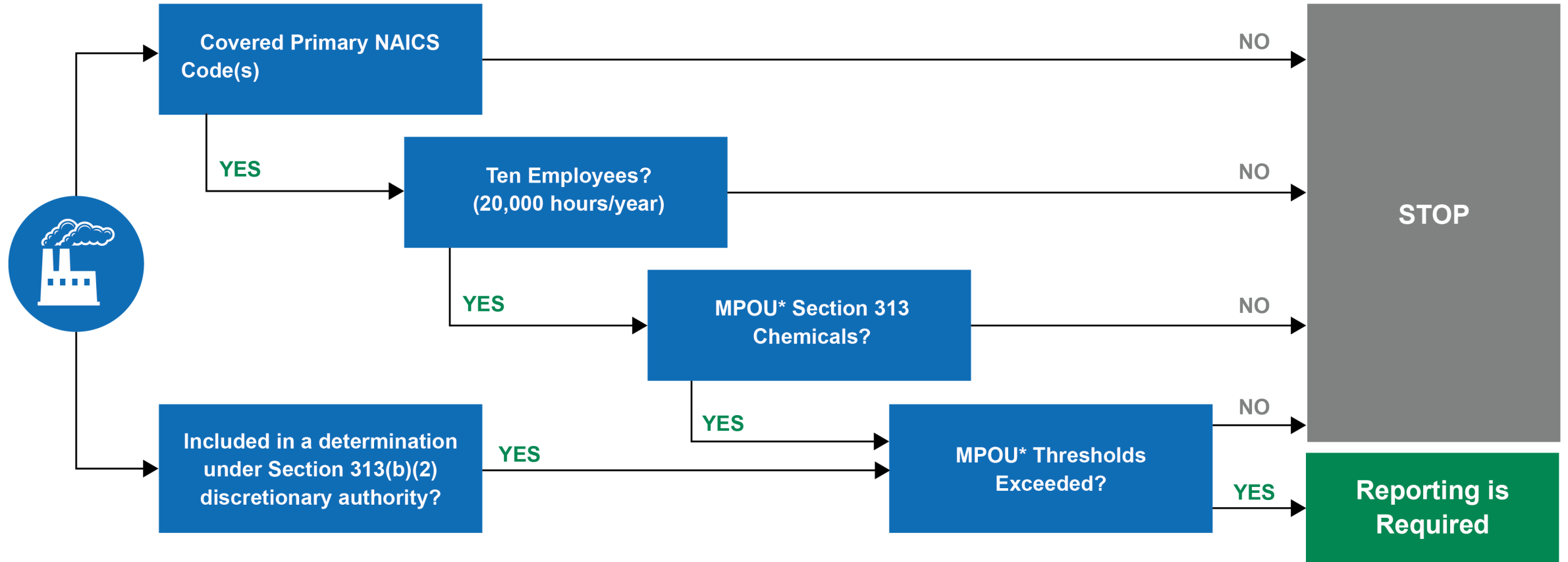
1. Covered Sectors
2. Listed Chemicals and Activity Thresholds
3. Reporting Exemptions
4. Threshold Determination
5. Overview of Form R
6. Form R Calculation Examples
7. Alternate Threshold Rule (Form A)
8. TRI-MEweb Introduction



## Advanced Concepts Module

1. Recent TRI Program Changes
2. Advanced Reporting Guidance
3. Detailed Guidance for Chemicals of Special Concern
4. Tools and Assistance
5. TRI-MEweb

# TRI Reporting Requirements



\*MPOU=Manufacturing, Processing, and Otherwise Use

# 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: RECENT TRI PROGRAM CHANGES





# TRI Program Changes Beginning RY 2025

- Key program changes and changes to TRI Reporting Form R are listed in TRI-MEweb and in GuideME at
- [guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:rfi-home#summary](https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:rfi-home#summary)





# TRI Program Changes Beginning 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 chemical list via the FY2020 NDAA as chemicals of special concern.
- This designation removes certain burden reduction options, including the *de minimis* exemption, 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 is effective beginning with RY 2024. Affected facilities should update their tracking of chemical activities involving PFAS accordingly. Find more information about the rule 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)





# TRI Program Changes Beginning RY 2024

Per the requirements of 40 CFR §372.38(a), the *de minimis* levels for the following two chemicals have been changed from 1.0% to 0.1% since these chemicals are classified as carcinogens due to assessments by the International Agency for Research on Cancer (IARC):

- Some cobalt compounds (N096): soluble cobalt(II) salts, cobalt(II) oxide
- Some antimony compounds (N010): trivalent antimony



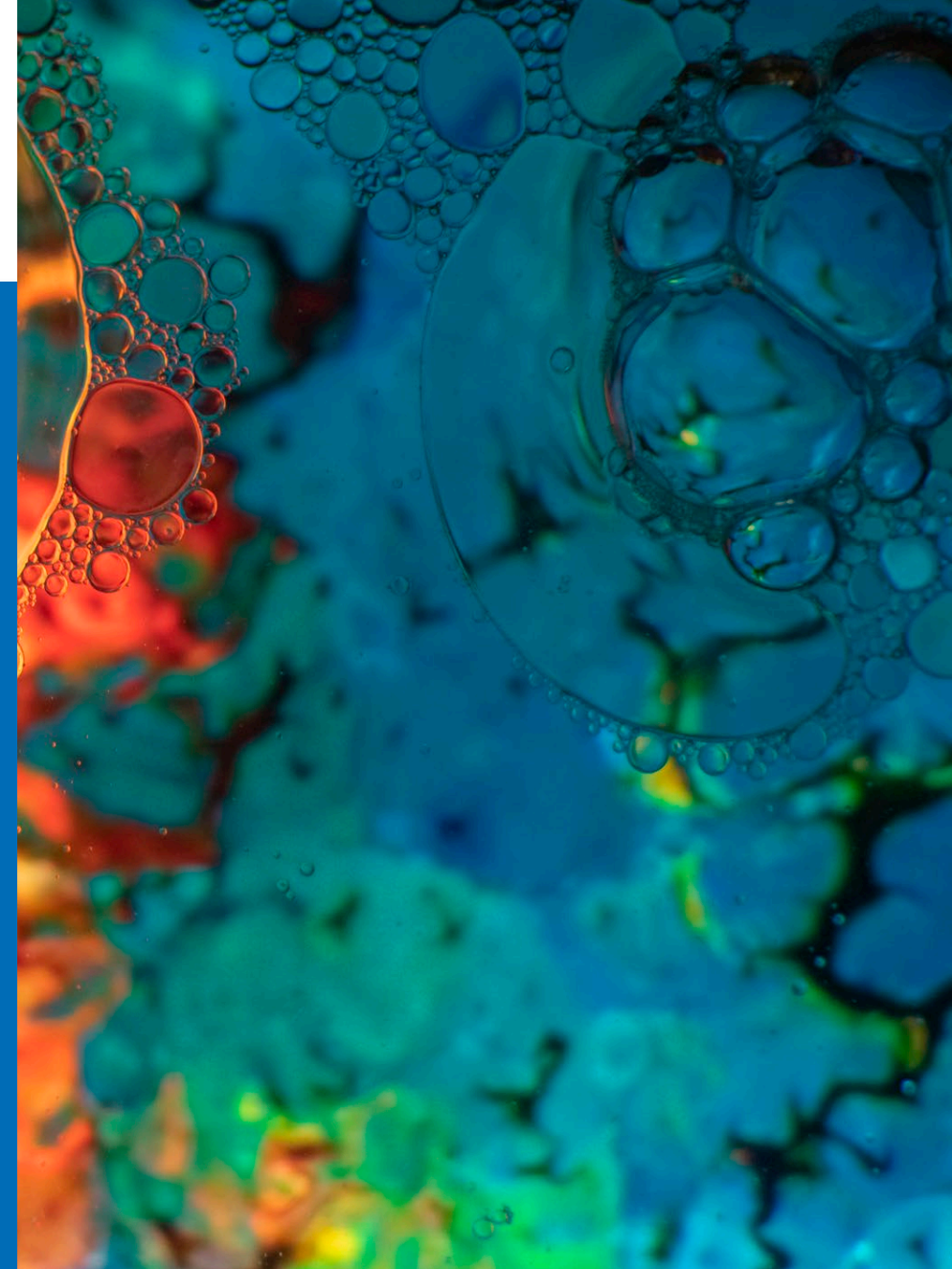


# Chemical List Changes: DINP Category

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.

It 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)





# Chemical List Changes: PFAS

**Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) adds certain per- and polyfluoroalkyl substances (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 to the TRI list mandated by NDAA Section 7321(c) that occur 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.
- [www.epa.gov/tri/pfas](https://www.epa.gov/tri/pfas)



# Chemical List Changes: PFAS

Beginning RY 2025, nine PFAS have been added to the TRI chemical list, per the requirements of the NDAA.

## These are:

- 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, [( $\gamma$ - $\omega$ -perfluoro-C8-10-alkyl)thio] derivs., Bu esters (3030471-22-5)





# SECTION 2: ADVANCED REPORTING GUIDANCE



# Chemicals with 25,000/10,000-pound Activity Thresholds

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

## 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

OR

## 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. Some have qualifiers (see the Reporting Forms and Instructions, Table II). Guidance documents for many chemicals are available at [guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:gd-list#chemical](https://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd-list#chemical).

# PFAS Activity Thresholds



A TRI-covered facility must submit a reporting form a TRI-listed PFAS if it:

**Manufactured  
(including imported)**

more than 100 pounds of the chemical in the reporting year

OR

**Processed**

more than 100 pounds of the chemical in the reporting year

OR

**Otherwise Used**

more than 100 pounds of the chemical in the reporting year

**205 TRI-listed PFAS are reportable for RY 2025.**

# Chemicals of Special Concern and Activity Thresholds

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

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

- Aldrin
- Hexabromocyclododecane
- Lead\*
- Lead compounds
- Pendimethalin
- PFAS
- 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*



# Threshold Guidance



The following activities are not considered “manufacturing,” “processing,” or “otherwise use”:

## Remediation

- Chemicals being remediated are not manufactured, processed, or otherwise used.
- Chemicals used to remediate waste ARE counted as otherwise used.
- Chemicals manufactured when treating or remediating waste ARE counted toward the manufacturing threshold

## Treatment of wastes generated on site

- Wastes brought in from off site for treatment or other management count towards the otherwise use threshold.

## Storage

## Recycling on site for use on site

### Transferring chemicals off-site for further waste management (except off-site transfers for recycling)

- Chemicals sent off-site for recycling are counted as processed.

**These activities do not constitute threshold activities** but are not exempt from reporting if a threshold is exceeded through other activities unless specifically eligible for one of the reporting exemptions.

Chemicals coincidentally manufactured during waste treatment or remediation must be considered.

# Threshold Guidance: Combustion

TRI-listed chemicals may be coincidentally manufactured during combustion of:

- Oil
- Coal
- Natural gas
- Waste
- Other materials

**Includes acid aerosols and metal compounds manufactured as by-products of fuel combustion.**

**Any TRI-listed chemicals in fuels combusted for energy are considered otherwise used.**





# Exemptions



- TRI regulations **provide exemptions** for specific scenarios.
- These exemptions allow a facility to **not consider quantities** of TRI-listed chemicals for certain threshold determinations and waste management calculations.
- More about TRI exemptions:
  - [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)

## Exemption List

- Articles
- *De Minimis*
- Coal Extraction
- Intake Air and Water
- Laboratory Activities
- Janitorial or Facility Grounds Maintenance
- Metal Mining Overburden
- Motor Vehicle Maintenance
- Operators of Establishments on Leased Property
- Owners of Leased Property
- Personal Use
- Structural Component of the Facility

# Exemption Guidance

## Reminder:

- Even where your activity is covered by an “otherwise use” exemption such as motor vehicle maintenance, if TRI-listed chemicals are manufactured as by-products, coincidentally as impurities, or otherwise manufactured, they must be considered toward the manufacturing threshold.
- TRI-listed chemicals in fuels added to motor vehicles as part of the facility’s service or product do not qualify for the motor vehicle maintenance exemption.
- The laboratory activities exemption only applies to certain activities that take place in a laboratory, and they must be under the direct supervision of a technically qualified individual.





# Metals and Metal Compound Category



**Elemental metals (metals in their neutral state) and their corresponding metal compound categories are listed separately under Section 313.**

- These have separate activity threshold determinations.
- Report for each listing (e.g., nickel or nickel compound) only if a threshold for each listing is exceeded.
- For metal compounds calculations:
  - Use full compound mass for threshold determination.
  - Use only parent metal mass for release and waste quantities.
- If threshold is exceeded for both the elemental metal and metal category compound (e.g., nickel and nickel compounds), you may report separately or submit one combined report.
  - If combined, file as metal and metal category compound.
  - The elemental metal and its compound may be reported on the same form because while the entire weight of the compound is used to determine the threshold, only the amounts of the parent metal are reported.

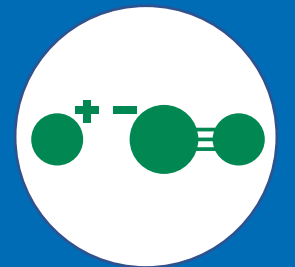
# Cyanide Compounds and Hydrogen Cyanide

**Cyanide compounds have the form  $X^+CN^-$  where  $X$  = any other group (except  $H^+$ ) where a formal dissociation can be made. For example,  $KCN$  or  $Ca(CN)_2$**

- Includes metal (cyanometalates, such as ferricyanides) and non-metal (such as ammonium cyanide) dissociative cyanide complexes.
- For threshold determinations, use weight of the entire compound.
- For release and other waste management reporting, report weight of entire compound.

## Hydrogen cyanide (74-90-8)

- An individually-listed toxic chemical.
- The Corrections to TRI Reporting Requirements rule clarified that hydrogen cyanide is not part of the cyanide compounds category.





# Metal Cyanide Compound Guidance



A metal cyanide compound, such as cadmium cyanide, requires separate reporting under both the corresponding metal category compound and cyanide compounds\*.

## For reporting the metal category compounds, such as cadmium compounds:

- For threshold determinations, use entire weight of compound.
- For release and other waste management reporting, report only the weight of metal portion of the compound.

## For cyanide compounds:

- For threshold determinations, use weight of entire compound.
- For release and other waste management reporting, report weight of entire compound.

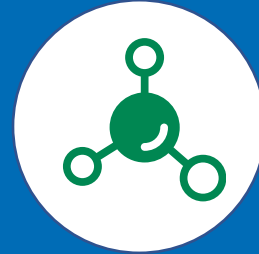
*\*Category description for cyanide compounds states:  $X^+CN^-$  where  $X^+$  = any group (except  $H^+$ ) where a formal dissociation can be made. For example,  $KCN$  or  $Ca(CN)_2$*

# Nitrate Compounds Category



## Qualifier: “Water dissociable; reportable only when in aqueous solution”

- For threshold determinations, use weight of entire nitrate compound.
- Calculate only weight of nitrate ion portion when reporting releases and other waste management quantities on the Form R.



## Common nitrate compounds sources

- Nitrate compounds are produced most commonly when nitric acid is neutralized or in biological treatment of wastewater.
- Nitrate compound releases to surface water may result from stormwater runoff.
- Exemption may apply for nitrates in intake water (used for processing or non-contact cooling).



## Quiz #1: Question 1

A facility processes 200,000 lb of a mixture containing 10% zinc chromate and 15% chromium dioxide by weight.

***For which of the following chemical categories was the processing threshold exceeded?***

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- A. Chromium compounds only**
- B. Zinc compounds only**
- C. Neither**
- D. Both**



## Quiz #1: Question 2

A facility neutralizes 20,000 lb of nitric acid ( $\text{HNO}_3$ ) with sodium hydroxide ( $\text{NaOH}$ ) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ( $\text{NaNO}_3$ ), which is discharged to a nearby waterbody.

The molecular weight (MW) of  $\text{HNO}_3 = 63$  and the MW of  $\text{NaNO}_3 = 85$ . One mole of  $\text{HNO}_3$  generates one mole of  $\text{NaNO}_3$ .

***Does the facility exceed the manufacturing threshold for nitrate compounds?***

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**Select Yes or No**



## Quiz #1: Question 3

A facility neutralizes 20,000 lb of nitric acid ( $\text{HNO}_3$ ) with sodium hydroxide ( $\text{NaOH}$ ) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ( $\text{NaNO}_3$ ), which is discharged to a nearby waterbody.

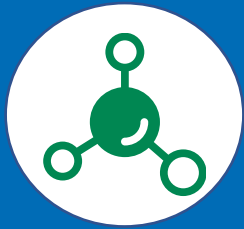
The molecular weight (MW) of  $\text{HNO}_3 = 63$  and the MW of  $\text{NaNO}_3 = 85$ . One mole of  $\text{HNO}_3$  generates one mole of  $\text{NaNO}_3$ . The MW of the nitrate ion  $\text{NO}_3 = 62$ .

***In this example, should the facility report release of 27,000 lb of nitrate compounds into a stream or waterbody (Section 5.3 on Form R)?***

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**Select Yes or No**

# Ammonia Guidance



## Ammonia

- Aqueous ammonia: threshold determination and release and other waste management quantity calculations for aqueous ammonia from any source (i.e., anhydrous ammonia placed in water or water dissociable ammonium salts) is based on 10% of the total ammonia present in aqueous solutions.
- Anhydrous ammonia: include 100% for threshold determinations and release calculations
  - Including air releases from aqueous ammonia
- Amounts from aqueous sources and anhydrous sources get added together for threshold determinations and ammonia release reporting.





# Ammonia Calculation Examples



In a calendar year, a facility places 25,000 pounds of anhydrous ammonia in water for processing and processes 25,000 pounds of aqueous ammonia from an ammonium salt.

The facility must include all 25,000 pounds of anhydrous ammonia in the determination of the processing threshold, but only 10 percent (or 2,500 pounds) of the aqueous ammonia from the ammonium salt in the processing threshold determination.

In a calendar year, a facility uses 30,000 pounds of anhydrous ammonia to neutralize acids in a wastewater stream. The neutralized waste stream (containing aqueous ammonia from dissociated ammonium salts) is then transferred to a POTW.

The quantity to be applied toward threshold determinations is the total quantity of anhydrous ammonia used in the waste stream neutralization, or 30,000 pounds. The quantity of ammonia reported as transferred is 10 percent of the total quantity of aqueous ammonia transferred, or 3,000 pounds.

# Acid Aerosols

**Hydrochloric and sulfuric acids are only reportable if in the aerosol form.**

- These aerosols are common products of coal and other fuels combustion.
- Includes mists, vapors, gas, fog, and other airborne forms of any particle size.

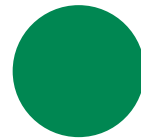
**Threshold determination for closed-loop reuse systems that generate acid aerosol:**

- Acid aerosols are manufactured and otherwise used.
- Applicable for sulfuric and hydrochloric acid only.

**Total Amount  
of Acid in  
Reuse System**



**Total Virgin Acid  
Added in RY**



**Amount Acid Aerosols  
Manufactured/  
Otherwise Used**



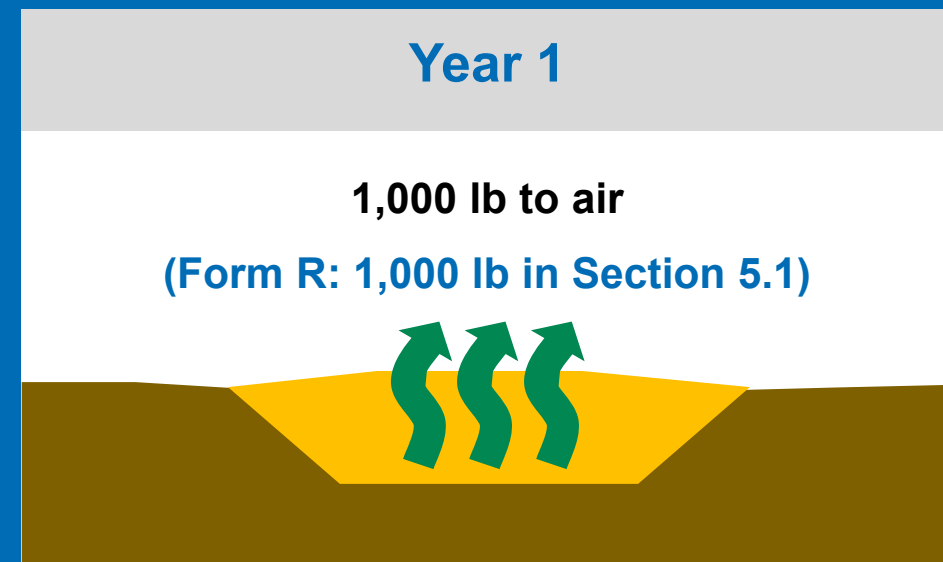
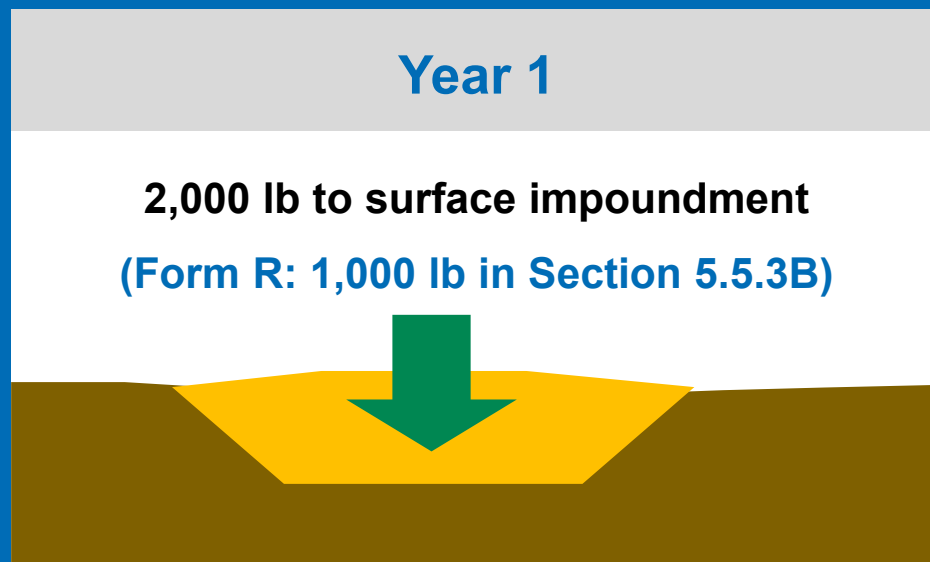
**Closed-loop  
Acid Reuse  
System**

*\* See EPA's Guidance for Reporting Sulfuric Acid and Guidance for Reporting Hydrochloric Acid for specific calculations*

# Chemical Migration Guidance

How to report migration of a TRI-listed chemical contained in waste disposed or released from one environmental medium to another within the reporting year:

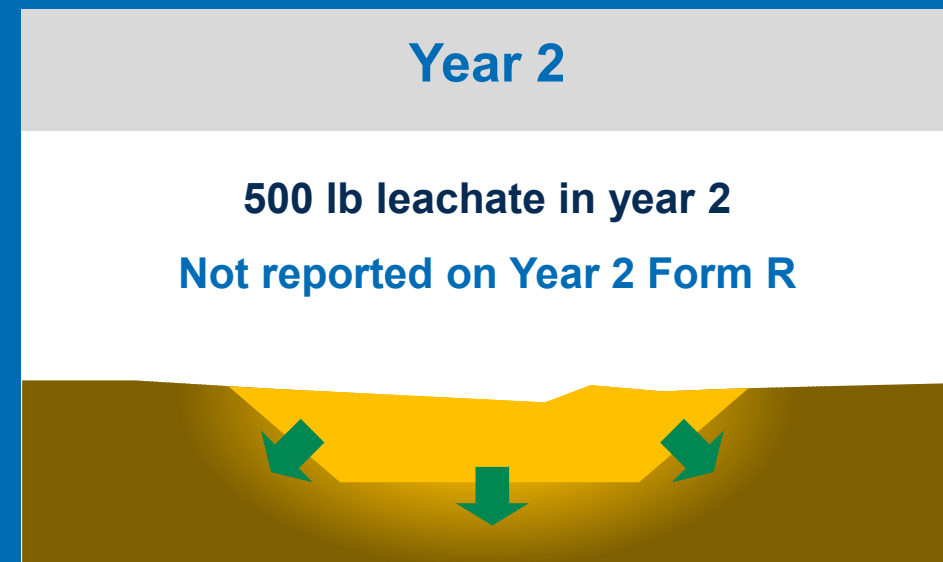
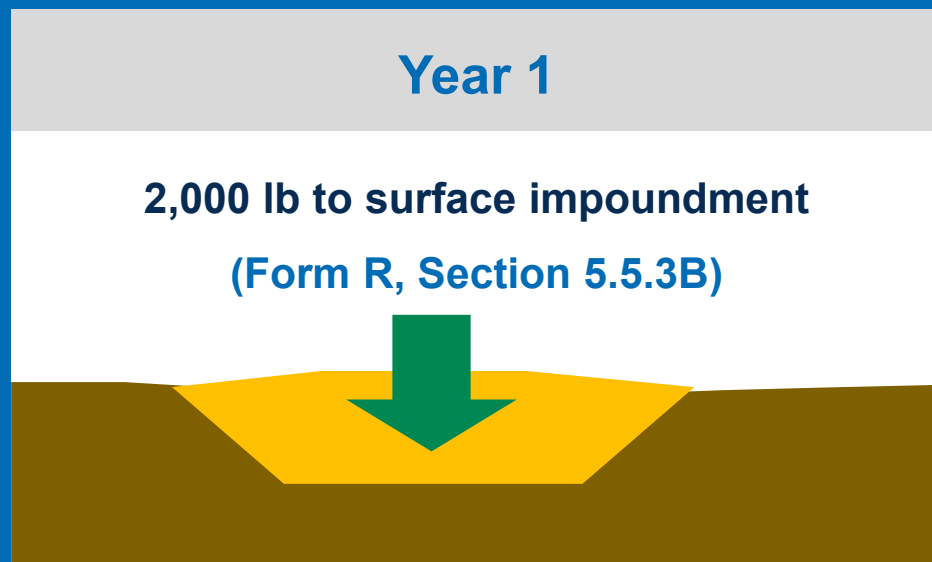
- For example, volatilization from a landfill
- Release estimates must be calculated and reported for all media in Part II, Sections 5, 6, and 8 of Form R.



# Chemical Migration Guidance

How to report migration of a TRI-listed chemical contained in waste disposed or released from one environmental medium to another within the reporting year:

- For example, leachate from a landfill
- Release estimates must be calculated and reported for all media in Part II, Sections 5, 6, and 8 of Form R.



# EPA Compliance Incentives

**July 1 is the TRI reporting deadline.** Facilities have a legal obligation to file an accurate and complete Form R or Form A for each chemical by July 1 each year. EPA may take enforcement action and assess civil administrative penalties regarding corrections to errors on Form Rs that are not changes based on previously unavailable information or procedures that improve the accuracy of the data initially reported.

**The Agency implements policies that reduce or waive penalties under certain conditions for facilities that discover, disclose, correct, and prevent future violations.**

**Current Compliance Incentive Policies, Guidance, and Audit Protocols:**

- [www.epa.gov/compliance/audit-protocols](http://www.epa.gov/compliance/audit-protocols)



# EPA Self-Disclosure Audit Policy

## Conditions to qualify (nine criteria):

- 1 Systematic Discovery of the Violation Through Environmental Audit or the Implementation of a Compliance Management System
- 2 Voluntary Discovery
- 3 Prompt Disclosure
- 4 Discovery and Disclosure Independent of Government or Third-Party Plaintiff
- 5 Correction and Remediation
- 6 Prevent Recurrence
- 7 No Repeat Violations
- 8 Other Violations Excluded
- 9 Cooperation

**For more information, including a copy of the Audit Policy, visit:**

- [www.epa.gov/compliance/epas-audit-policy](http://www.epa.gov/compliance/epas-audit-policy)



# EPA Self-Disclosure Audit Policy

## EPA Compliance Incentive Policy is available only to small businesses

- Small businesses employ 100 or fewer individuals across all facilities and operations.

**Small businesses that meet all four conditions of the policy may have 100% of the gravity-based penalty waived. However, EPA reserves the option to collect any significant economic benefit that may have been realized by the facility.**

### Four Qualification Conditions:

- 1 Good Compliance Record
- 2 Voluntary Discovery
- 3 Prompt Disclosure
- 4 Correction and Remediation

**For more information, including a copy of the Small Business Compliance Policy and a Q&A document, visit:**

- [www.epa.gov/compliance/small-business-compliance](http://www.epa.gov/compliance/small-business-compliance)



# Submitting Revisions and Withdrawals

## To replace a previously submitted Form A Certification Statement with a Form R: .

- You must withdraw the previously filed Form A Certification Statement and then submit a Form R. EPA will consider the Form R to be a late submission if submitted after the July 1 reporting deadline.

## To change what chemical is being reported (including a metal to a metal compound):

- You must withdraw the original submission and re-submit for the new chemical. This is not a revision.

**EPA may audit reporting form revisions or withdrawals at any time.**





# EPCRA Section 313 Enforcement

Owners and operators of covered facilities violating any statutory or regulatory requirement are **subject to penalties of up to \$40,779 per day per violation** (periodically adjusted for inflation).

Owners and operators of covered facilities subject to citizen suits could also be **liable for attorney fees and litigation costs** (EPCRA § 326(f)).

Government's penalty for Section 313 of EPCRA is determined by applying the statutory penalty factors as described in the **Enforcement Response Policy (ERP)** to each violation.

- For EPA's EPCRA enforcement policies, see:
  - [www.epa.gov/sites/production/files/2017-03/documents/epcra313erpamendments2017.pdf](http://www.epa.gov/sites/production/files/2017-03/documents/epcra313erpamendments2017.pdf)



# SECTION 3: DETAILED GUIDANCE FOR CHEMICALS OF SPECIAL CONCERN





# Chemicals of Special Concern



## Organic Compounds:

- Benzo[g,h,i]perylene, Dioxin and dioxin-like compounds category, Hexabromocyclododecane, Hexachlorobenzene, 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta[g]-2-benzopyran, Octachlorostyrene, Pentachlorobenzene, Polycyclic aromatic compounds (PAC) category, Polychlorinated biphenyls, and Tetrabromobisphenol A

## Metals and Metal Compounds:

- Mercury, Mercury compounds category, Lead, and Lead compounds category

## Pesticides:

- Aldrin, Chlordane, Heptachlor, Isodrin, Methoxychlor, Pendimethalin, Toxaphene, Trifluralin

## PFAS

**Chemicals of special concern are subject to separate, lower reporting thresholds and different reporting requirements than the other TRI chemicals.**

- Facilities must use Form R (cannot use Form A)
- Quantities can be reported to decimal amounts
- Cannot use range codes for release reporting
- Cannot use the *de minimis* exemption

# Dioxin and Dioxin-like Compounds

Dioxin and dioxin-like compounds are reported in grams.

The manufacture, process, or otherwise used activity thresholds are 0.1 grams.

Dioxins can be formed as unwanted by-products when chlorinated materials are involved in combustion or other high-temperature processes, such as:

- Fossil fuel and wood combustion
- Waste incineration
- Metallurgical processes

**What does it take to exceed the 0.1-gram activity threshold?**

- 64,462 tons of coal combusted in a utility boiler
- 8.31 million gallons of fuel oil combusted in a utility boiler
- 1,230 tons of copper scrap fed to a secondary copper smelter



# Dioxin and Dioxin-like Compounds

**Dioxin and dioxin-like compounds category is composed of 17 specific compounds.**

- In addition to the total mass grams released for the entire chemical category, facilities that have the data are required to report the quantity of each of the 17 individual members, which must add up to the total mass for the category.

## **Dioxin and Dioxin-like Compounds Toxicity Equivalency (TEQ)**

- Each compound has an assigned Toxic Equivalency Factor (TEF) that is multiplied with the compound mass to yield TEQ.
- TEQ for each of the compounds are summed to provide a category TEQ.
- TEQ values are made available to the public along with mass data.

## **Emission factors, listed compounds, TEFs, and other guidance:**

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





# Lead and Lead Compounds



**Raw materials processed by a variety of facilities may contain metallic lead or lead compounds:**

- Metal ores
- Coal
- Wood
- Oil & Oil products: heating oils, gasolines

**Lead used in solder and other alloys is in the elemental NOT the compound form (i.e., this is lead, not a lead compound).**

**Lead-acid batteries will typically meet the articles exemption.**

**Sending old paint containing lead off site for disposal or treatment is not a threshold activity.**

**Other sources of lead and lead compounds for Chemicals of Special Concern threshold:**

- Lead solder, lead babbitt, castings/molds, contaminants of aluminum and other common base alloys, X-Ray film
- Cement, asphalt, graphite brushes, leaded glass
- Transfers of lead and lead compounds off-site for recycling



**Pb**

# Lead and Lead Compounds

Under TRI, lead is classified as a Chemical of Special Concern except for lead contained in stainless steel, brass, and bronze alloys



Pb

## Chemicals of special concern activity thresholds:

- Lead: 100 pounds (not contained in stainless steel, brass, or bronze)
- Lead compounds: 100 pounds



## 25,000/10,000-pound reporting thresholds apply to lead contained in stainless steel, brass, or bronze\*

- 25,000-pound thresholds for manufacturing or processing
- 10,000-pound threshold for otherwise use
- 0.1% *de minimis* level applies to lead contained in stainless steel, brass, or bronze

\* If elemental lead is removed from the qualified alloy, such as vaporization during melting of an alloy, the 100 lb threshold applies.

# Lead Threshold Determination Flow Chart

Did the facility exceed the 25,000/10,000 lb threshold, considering lead in stainless steel, brass or bronze alloy<sup>1</sup>, AND lead not in stainless steel, brass or bronze alloy?

<sup>1</sup>The de minimis exemption may be considered for quantities of the lead in stainless steel, brass or bronze alloy.

YES

Did the facility exceed the 100 lb threshold considering only lead not in stainless steel, brass or bronze alloy?

YES

NO

Must use Form R, without range reporting in Section 5 and 6 of Part II.  
Report releases and transfers from BOTH lead in stainless steel, brass or bronze alloy and lead not in stainless steel, brass or bronze alloy.

May use Form A or Form R; range reporting can be used in Section 5 or 6 of Part II.  
Report releases and transfers from BOTH lead in stainless steel, brass or bronze alloy and lead not in stainless steel brass or bronze alloy.

NO

Did the facility exceed the 100 lb threshold considering only lead not in stainless steel, brass or bronze alloy?

YES

NO

Must use Form R, without range reporting in Section 5 and 6 of Part II.  
Only required to report releases and transfers of lead not in stainless steel, brass or bronze alloy.

No reporting for lead required.

This flowchart does not apply to Lead Compounds, a separately listed TRI chemical



## Quiz #2: Question 1

A facility combusts 13,600,000 lb of coal to fire its boilers. The coal contains elemental lead (Pb) at 7.0 ppm by weight. In combusting the coal, the facility otherwise uses lead and coincidentally manufactures lead compounds. The facility has no other information about the chemical makeup of the lead compounds manufactured and assumes it is the lowest-weight oxide - PbO. Based on molecular weights (Pb = 207, PbO = 223), the facility knows that 223 lb of PbO is formed for every 207 lb Pb used.

***Which of the following thresholds have been exceeded for lead or lead compounds?***

---

**A. Otherwise Use only**

**C. Neither**

**B. Manufacturing only**

**D. Both**



## Quiz #2: Question 2

The facility in the previous question combusted 13,600,000 pounds of coal in the reporting year and has exceeded the reporting threshold for lead compounds. The facility has no monitoring data on their point source lead emissions from combusting the coal. They determined that their best available information for calculating their point source air emissions is the published emission factor for lead from controlled coal combustion from EPA's AP-42, which is 4.2E-04 lb Pb/ton of coal combusted.

***What are the facility's point source emissions of lead from coal combustion?***

---

**A. 2.86 lb**

**C. 95.2 lb**

**B. Range Code 'A'**

**D. Either 2.86 lb or Range Code 'A'**



# Polycyclic Aromatic Compounds (PACs) and Benzo[g,h,i]perylene



## Chemicals of Special Concern activity thresholds

- PACs category threshold: 100 pounds
- Benzo[g,h,i]perylene threshold: 10 pounds

**Present in coal, fuel oil, other petroleum products, such as asphalt and roofing tars**

**Asphaltic concrete (blacktop) typically contains 4 - 10% paving asphalt**

## Some uses of paving asphalt (blacktop) are NOT EXEMPT

- Paved process areas and roads for process vehicles (e.g., on-site haul trucks) – NOT EXEMPT
- Employee parking lot and non-process access roads – EXEMPT

## See also EPA's PACs and Persistent Bioaccumulative Toxic (PBT) guidance

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

## PACs (cont.)



FUEL MATERIAL	TYPICAL PAC CONCENTRATION	QUANTITY NEEDED TO EXCEED THRESHOLD (GALLONS)
<b>No. 6 Fuel Oil (Bunker C)</b>	2,461 ppm	5,140
<b>No. 2 Fuel Oil</b>	10.0 ppm	1,410,000
<b>Crude Oil</b>	depends on type of crude	
<b>Gasoline</b>	17 ppm	1,060,000
<b>Paving Asphalt</b>	178 ppm	51,800

# Mercury and Mercury Compounds

## Chemicals of Special Concern activity thresholds:

- 10 pounds for mercury
- 10 pounds for mercury compounds

**Combustion of fuels is expected to be a main source of mercury, exceeding an activity threshold.**

**Combustion involves the otherwise use of mercury compounds in fuel and the manufacture of elemental mercury.**

## Amount of fuel required to exceed a threshold:

- No. 2 Fuel Oil:  $1.41 \times 10^9$  gallons
- No. 6 Fuel Oil:  $1.89 \times 10^9$  gallons
- Coal: 11,000 – 120,000 tons





# Mercury and Mercury Compounds



## Present in some switches and lights

- Bulbs and switches may qualify as articles for which the articles exemption would apply IF less than 0.5 pound of TRI-listed chemicals are released from all like items as a result of processing or otherwise use of the items during the year.

**Mercury may be present in measurement devices such as thermometers or manometers. The addition of mercury to these devices needs to be considered in threshold and release calculations.**

**Present in Caustics/Acids (if produced in mercury cell process – not common)**

**May be present in mined ores**

# Polychlorinated Biphenyls (PCBs)

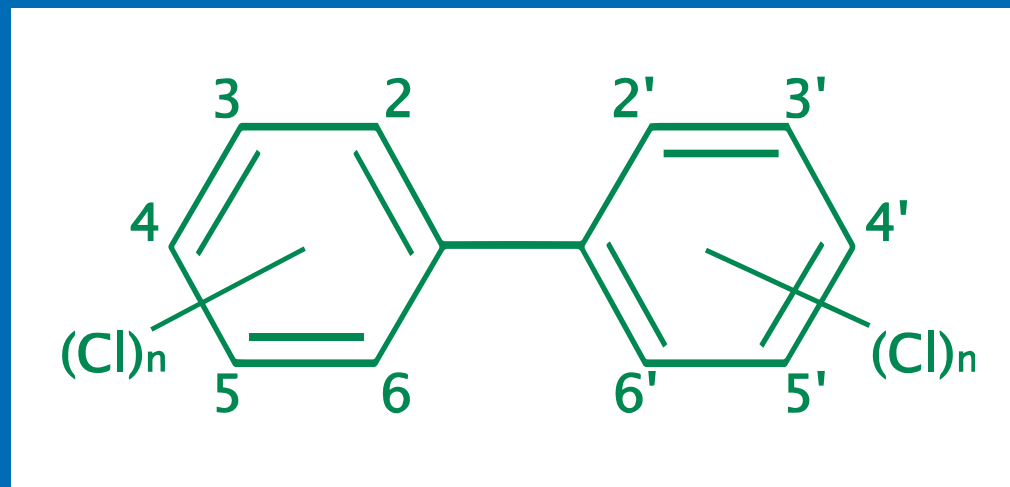
**Chemicals of Special Concern activity thresholds:**  
10 pounds

## Manufacturing:

- PCBs may be manufactured as a product of incomplete combustion (PIC)

## Otherwise use:

- On-site treatment or disposal of PCB-contaminated waste received from off site
- Combusting PCB-contaminated oil



# PCBs

## Activities NOT considered manufacturing, processing, or otherwise use:

- On-site disposal or treatment of PCBs
  - Exception: if PCBs were received as wastes from off site they are counted towards the “otherwise use” threshold.
- Off-site shipment of PCBs for disposal or treatment

## Transformers containing PCBs may be considered articles and thus exempt from consideration towards reporting and release thresholds.

- Leaks may negate article exemption if 0.5 pounds of PCBs are released in a reporting year.





# PFAS



PFAS have been used to formulate some firefighting foams (e.g., aqueous film forming foam (AFFF)) that have been stored and used at facilities for fire suppression, fire training, and flammable vapor suppression.

## Chemicals present in fire suppression equipment that is used and maintained on site

- Use of a fire suppression system for system testing, training, or to suppress a fire as part of an emergency response would constitute otherwise use of the TRI-listed chemicals in the firefighting foam, per the definition of otherwise use in the TRI Reporting Forms and Instructions, Section B.3.a.

## Chemicals present in fire suppression equipment that is not used

- Storage is not considered a M/P/OU activity.
- A facility receiving and incorporating AFFF into a fire suppression system on site is considered to be storing the AFFF for intended future use. The placement of AFFF into a fire suppression system is not an otherwise use activity for TRI reporting purposes, until the AFFF is released from the system.
- An accidental release is not otherwise use and is therefore not a threshold activity. Note that, while an accidental spill is not itself a threshold activity, an accidental spill may be a reportable release if a reporting threshold is otherwise exceeded.

See [guideme.epa.gov/ords/guideme\\_ext/f?p=GUIDEME:GD::::RP:gd:pfas\\_resources](https://guideme.epa.gov/ords/guideme_ext/f?p=GUIDEME:GD::::RP:gd:pfas_resources) for more on TRI PFAS reporting.

## SECTION 4: TOOLS AND ASSISTANCE





[www.epa.gov/tri](http://www.epa.gov/tri)



## TRI website for reporting materials and guidance includes:

- Electronic versions, or links to electronic versions, of the statutes, regulations, executive orders, chemical-specific guidance documents, and industry-specific guidance documents

## TRI GuideME

- Available at [guideme.epa.gov](http://guideme.epa.gov)
- View the Reporting Forms and Instructions
- Browse frequently asked questions and answers
- Browse guidance materials
- View interactive TRI-listed chemical lists



# Reference Sources



## EPA Industry Guidance:

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

## AP-42: Compilation of Air Pollutant Emission Factors:

- [www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors](http://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors)

## Technology Transfer Network:

- [www.epa.gov/technical-air-pollution-resources](http://www.epa.gov/technical-air-pollution-resources)
- AP-42
- WATER9 program
- TANKS program

**Perry's Chemical Engineer's Handbook; CRC Handbook of Chemistry and Physics;  
Lange's Handbook of Chemistry**



# Pollution Prevention (P2) Information



## Visit the TRI Pollution Prevention webpage

- [www.epa.gov/tri/p2](http://www.epa.gov/tri/p2)

## P2 Reporting Guide

- [guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:gd:::::gd:p2\\_reporting\\_guide](http://guideme.epa.gov/ords/guideme_ext/f?p=guideme:gd:::::gd:p2_reporting_guide)

## P2 Resources Search Tool:

- [www.epa.gov/p2/p2-resources-search](http://www.epa.gov/p2/p2-resources-search)

## Contact Info:

- Helpline: [www.epa.gov/p2/forms/contact-us-about-pollution-prevention#helpline](http://www.epa.gov/p2/forms/contact-us-about-pollution-prevention#helpline)
- E-mail: [p2hub@epa.gov](mailto:p2hub@epa.gov)
- Phone: (202) 566-0799

# TRI Contact Information

## TRI Regulatory and Technical Support

- For regulatory assistance, contact [TRI.help@epa.gov](mailto:TRI.help@epa.gov).
- For technical questions related to TRI-MEweb and the Central Data Exchange (CDX), please contact the CDX Hotline at [helpdesk@epacdx.net](mailto:helpdesk@epacdx.net) or call toll-free at (888) 890-1995.

## TRI Regional Coordinators

- [www.epa.gov/toxics-release-inventory-tri-program/tri-regional-coordinators](http://www.epa.gov/toxics-release-inventory-tri-program/tri-regional-coordinators)



## SECTION 5: TRI-MEweb



# TRI-MEweb and Submitting Via CDX



## EPA requires electronic filing via TRI-MEweb

- No paper submissions are accepted (except for trade secrets), including for revisions and withdrawals.
- TRI-MEweb supports new reporting, revisions & withdrawals for RY 1991 – current year.
- TRI-MEweb resources including tutorials are available to help users at [www.epa.gov/tri/trimeweb](http://www.epa.gov/tri/trimeweb)



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

### Use hard-copy form only for trade secret reporting

- Information about trade secret reporting is available at:
  - [guideme.epa.gov/ords/guideme\\_ext/f?p=guideme:rfl:::::rfi:apx\\_a](http://guideme.epa.gov/ords/guideme_ext/f?p=guideme:rfl:::::rfi:apx_a)

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

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

# Accessing TRI-MEweb

## TRI-MEweb is accessed through EPA's Central Data Exchange (CDX)

- CDX is available at <https://cdx.epa.gov>.
- TRI-MEweb users must have a CDX account.
- Select the appropriate TRI-MEweb user role: Preparer or Certifying Official.

## Within TRI-MEweb, new users must gain access to their facility before preparing forms.

- Option 1: Enter facility's access key.
- Option 2: Enter TRIFID and Technical Contact Name.
- Option 3: Begin a new facility profile if the facility has never reported to TRI or has changed physical location.

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



# Starting a Form in TRI-MEweb

## To start a new chemical form from scratch (Part II Sections 1.1-1.2, 2.1):

- Select CAS Registry Number or category code and name of chemical or chemical category; or
- Select “Add generic chemicals,” if supplier claims trade secret.
- Indicate if using Reporting Form R or Form A (only for non-chemicals of special concern).

**TRI-MEweb preloads previous year’s reporting details using “Import Prior Year Form(s).”**

**The XML uploader handles forms generated by third-party tools.**



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

Waste Management Description	Prior Year (RY 2017)	Current Year (RY 2018)	Reporting Year 2019	Reporting Year 2020
	<input type="checkbox"/> Edit		<input checked="" type="checkbox"/> Use Current Year Quantities	<input checked="" type="checkbox"/> Use Current Year Quantities
Section 8.1a: Total On-site Disposal to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	700 <a href="#">Edit</a>	<input type="text" value="700"/> <input type="checkbox"/> NA	<input type="text" value="700"/> <input type="checkbox"/> NA
Section 8.1b: Total Other On-site Disposal or Other Releases <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	1,450 <a href="#">Edit</a>	<input type="text" value="1450"/> <input type="checkbox"/> NA	<input type="text" value="1450"/> <input type="checkbox"/> NA
Section 8.1c: Total Off-site Disposal to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	4,300 <a href="#">Edit</a>	<input type="text" value="4300"/> <input type="checkbox"/> NA	<input type="text" value="4300"/> <input type="checkbox"/> NA
Section 8.1d: Total Other Off-site Disposal or Other Releases <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	NA	<input type="text"/> <input checked="" type="checkbox"/> NA	<input type="text"/> <input checked="" type="checkbox"/> NA
Section 8.2: Quantity Used for Energy Recovery On-site <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	<a href="#">Edit</a>	<input type="text"/> <input type="checkbox"/> NA	<input type="text"/> <input type="checkbox"/> NA
Section 8.3: Quantity Used for Energy Recovery Off-site <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	NA	<input type="text"/> <input checked="" type="checkbox"/> NA	<input type="text"/> <input checked="" type="checkbox"/> NA
Section 8.4: Quantity Recycled On-site <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	6,000 <a href="#">Edit</a>	<input type="text" value="6000"/> <input type="checkbox"/> NA	<input type="text" value="6000"/> <input type="checkbox"/> NA
Section 8.5: Quantity Recycled Off-site <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	NA	<input type="text"/> <input checked="" type="checkbox"/> NA	<input type="text"/> <input checked="" type="checkbox"/> NA
Section 8.6: Quantity Treated On-site <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	<input type="text"/> <input checked="" type="checkbox"/> NA	<input type="text"/> <input checked="" type="checkbox"/> NA	<input type="text"/> <input checked="" type="checkbox"/> NA
Section 8.7: Quantity Treated Off-site <a href="#">?</a>	<input type="text"/> <input checked="" type="checkbox"/> NA	2,800 <a href="#">Edit</a>	<input type="text" value="2800"/> <input type="checkbox"/> NA	<input type="text" value="2800"/> <input type="checkbox"/> NA



# Certifying Official Information



- **All non-trade secret forms must be certified by an electronic signature from a senior management official.**
- **New Certifying Officials must submit an electronic signature agreement (ESA) and a facility certification agreement form before pending submissions can be certified.**
- **Returning Certifying Officials do not need to submit an ESA if they continue to represent the same facility year to year.**
- **TRI-MEweb now includes a built-in Certification module, accessible by users registered as Certifying Officials.**
- **New Certifying Officials will answer personalized security questions in addition to their CDX password for digital procedures.**



# Signing and Certifying Forms



## New Certifying Officials must complete the following two requirements:

- Electronic signature agreement (ESA)
  - Must be completed only once, not annually, applicable 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 Certification Agreement Form
  - Must be completed after access to TRI-MEweb is granted by ESA approval
  - Facility profiles are added to TRI-MEweb using access keys or prior-year information
  - Certifying Officials must have a digitally signed TRIFID Certification Agreement for each facility profile before receiving access to any pending submission (s) for certification

**New Certifying Officials must submit an ESA and digitally sign a TRIFID certification agreement form before pending submissions can be reviewed and certified.**



# eReceipts



- Facilities can obtain a copy of their electronic receipt (formerly known as the electronic Facility Data Profile report (eFDP)) under the Submission History tab within TRI-MEweb.
- Review your eReceipt immediately after certifying TRI reporting forms in CDX to verify that EPA processed your data correctly.
- It allows EPA to highlight errors and possible issues with your submission.
- If you have problems accessing your eReceipt, email [tridpc@epa.gov](mailto:tridpc@epa.gov)

# TRI-MEweb Tutorials

TRI-MEweb has integrated tutorials to assist users with features and common functions, such as:

- Overview
- Registration
- Accessing Your Facility
- Nominating a Certifying Official
- Section 8 Calculator
- Submitting Data
- Certifying Data
- Getting Help



**For a list of tutorials:**

- [www.epa.gov/toxics-release-inventory-tri-program/electronic-submission-tri-reporting-forms#q2](http://www.epa.gov/toxics-release-inventory-tri-program/electronic-submission-tri-reporting-forms#q2)

# END OF MODULE



# Quiz Answers





# Quiz #1: Question 1

A facility processes 200,000 pounds of a mixture containing 10% zinc chromate ( $\text{ZnCrO}_4$ ) and 15% chromium dioxide ( $\text{CrO}_2$ ) by weight

*For which of the following chemical categories was the processing threshold exceeded?*

- A. Chromium compounds only
- B. Zinc compounds only
- C. Neither
- D. Both

---

## Answer: A is correct

**Total chromium compounds processed:**  
 $(10\% + 15\%) \times (200,000 \text{ lb}) = 50,000 \text{ lb}$

**Total zinc compounds processed:**  
 $(10\%) \times (200,000 \text{ lb}) = 20,000 \text{ lb}$

*The processing threshold (25,000 lb) was exceeded for chromium compounds, but not zinc compounds. Both are chemicals with 25,000/10,000-pound reporting thresholds*



## Quiz #1: Question 2

A facility neutralizes 20,000 lb of nitric acid ( $\text{HNO}_3$ ) with sodium hydroxide ( $\text{NaOH}$ ) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ( $\text{NaNO}_3$ ), which is discharged to a nearby water body.

The molecular weight (MW) of  $\text{HNO}_3 = 63$  and the MW of  $\text{NaNO}_3 = 85$ . 1 mole of  $\text{HNO}_3$  generates 1 mole of  $\text{NaNO}_3$ .

*Does the facility exceed the manufacturing threshold for nitrate compounds?*

---

### Answer: Yes

**The quantity of nitrate compounds manufactured =**  
(quantity of  $\text{HNO}_3$  neutralized)  $\times$  (MW of  $\text{NaNO}_3$  / MW of  $\text{HNO}_3$ )

**$\text{NaNO}_3$  manufactured =**  
(20,000 lb)  $\times$  (85/63) = 26,984 lb (rounded to 27,000)

***Nitrate compounds are subject to 25,000/10,000-pound reporting thresholds.***

***The manufacturing threshold (25,000 lb) is exceeded, so the facility must submit a TRI form for nitrate compounds***



## Quiz #1: Question 3

A facility neutralizes 20,000 lb of nitric acid ( $\text{HNO}_3$ ) with sodium hydroxide ( $\text{NaOH}$ ) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ( $\text{NaNO}_3$ ), which is discharged to a nearby water body. The molecular weight (MW) of  $\text{HNO}_3 = 63$  and the MW of  $\text{NaNO}_3 = 85$ . 1 mole of  $\text{HNO}_3$  generates 1 mole of  $\text{NaNO}_3$

*In this example, should the facility report release of 27,000 lb of nitrate compounds as to a stream or water body? (Section 5.3 on Form R)? Yes or no*

---

### Answer: No

Releases of nitrate compounds are reported on nitrate ion ( $\text{NO}_3^-$ ) basis. Based on molecular weights ( $\text{NaNO}_3 = 85$ ,  $\text{NO}_3^- = 62$ ), **62 lb of nitrate ion are generated for every 85 lb of nitrate compounds.**

To calculate the quantity of nitrate ion released to the water body in the example described above:  
(lb of  $\text{NaNO}_3$ ) x (MW of  $\text{NO}_3^-$  / MW of  $\text{NaNO}_3$ ) = (26,984 lb) x (62/85) = 19,682 lb (rounded to 20,000 lb)

On the Form R for nitrate compounds, the facility would report **20,000 lb of the nitrate ion releases to the stream or water body.**



## Quiz #2: Question 1

A facility combusts 13,600,000 lb of coal to fire its boilers. The coal contains elemental lead (Pb) at 7.0 ppm by weight. In combusting the coal, the facility otherwise uses lead and coincidentally manufactures lead compounds. The facility has no other information about the chemical makeup of the lead compounds manufactured and assumes it is the lowest-weight oxide – PbO. Based on molecular weights (Pb = 207, PbO = 223), the facility knows that 223 lb of PbO is formed for every 207 lb Pb used.

*Which of the following thresholds have been exceeded for lead or lead compounds?*

- A. Otherwise Use only    B. Manufacturing only    C. Neither    D. Both

---

### Answer: B is correct

**Pb in coal:**  $(13,600,000 \text{ lb}) * (7 \times 10^{-6}) = 95.2 \text{ lb}$

*Total lead combusted (95.2 lb) does not exceed the threshold for otherwise using lead not in stainless steel, brass, or bronze (100 lb)*

**PbO formed:**  $(95.2 \text{ lb}) * (223/207) = 103 \text{ lb}$

*Total lead oxide manufactured (103 lb) exceeds the threshold for manufacturing of lead compounds (100 lb)*



## Quiz #2: Question 2

The facility in the previous question combusted 13,600,000 pounds of coal in the reporting year and has exceeded the reporting threshold for lead compounds. The facility has no monitoring data on their point source lead emissions from combusting the coal. They determined that their best available information for calculating their point source air emissions is the published emission factor for lead from controlled coal combustion from EPA's AP-42\* which is 4.2E-04 lb Pb/ton of coal combusted.

*What are the facility's point source emissions of lead from coal combustion?*

- A. 2.86 lb      B. Range Code 'A'      C. 95.2 lb      D. Either 2.86 lb or Range Code 'A'

---

### Answer: A is correct

**Point Source Emissions (lb) = EF × W**

*where: EF = emission factor for controlled coal combustion (lb Pb/ton coal), and W = weight of coal combusted (ton)*

**Weight of coal combusted:**

$(13,600,000 \text{ lb coal}) / (2,000 \text{ lb/ton}) = 6,800 \text{ tons coal}$

**Point Source Emissions =**

$4.2\text{E-}4 \text{ (lb Pb/ton coal)} \times 6,800 \text{ tons coal} = 2.86 \text{ lb Pb}$

**Assuming coal combustion was the only source of point source air emissions for this facility, the facility would report 2.86 lb in Section 5.2 of their Form R for lead compounds.**

**Range codes cannot be used for Chemicals of Special Concern.**

**While threshold determinations are based on the weight of the lead compounds, release and waste management calculations are based on the weight of the parent metal (lead) in the metal compound (lead oxide).**