United States Environmental Protection Agency

Toxics Release Inventory Reporting Requirements

Advanced Concepts: Do I Need to Report to TRI and How Do I Report

REPORTING YEAR / **2019**

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

TRI Training Module Agendas

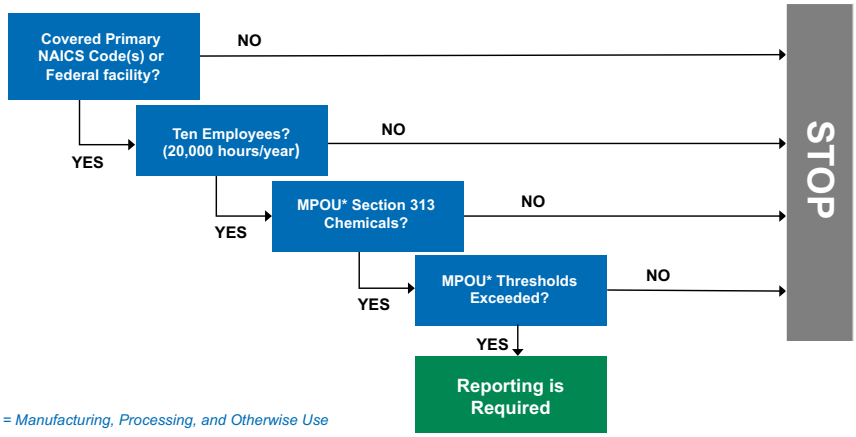
Basic Concepts Module

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

Advanced Concepts Module

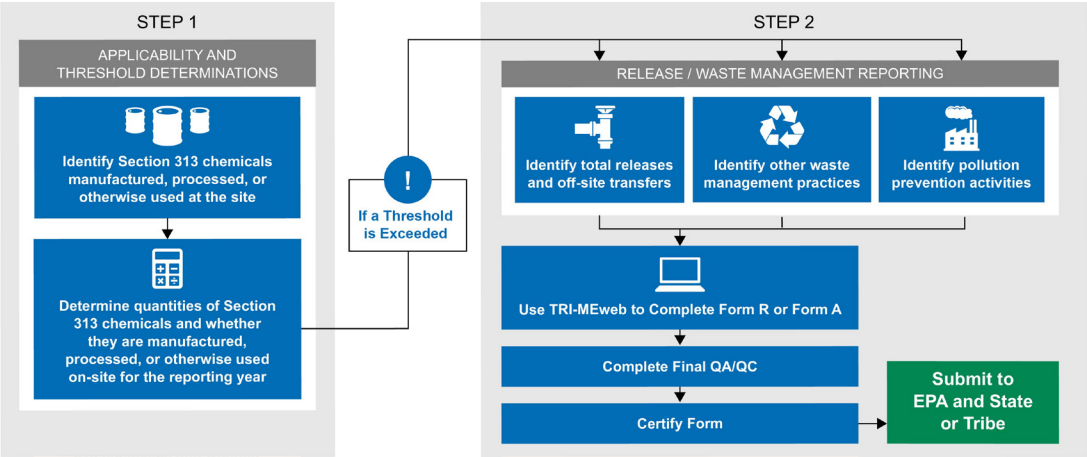
1. Recent TRI Program Changes
2. Advanced Reporting Guidance
3. Detailed PBT Guidance
4. Tools and Assistance
5. TRI-MEweb

Toxic Reporting Requirements



**MPOU = Manufacturing, Processing, and Otherwise Use*

TRI Process: 2 Step Process



SECTION I: RECENT TRI PROGRAM CHANGES

TRI Program Changes for RY 2019

- **Key program changes and changes to TRI reporting Form R** are listed in the front of the Reporting Forms & Instructions, as well as in TRI-MEweb, and on EPA's TRI website.
- **Updated *de minimis* levels are in effect for N,N dimethylformamide (68-12-2), 2-mercaptobenzothiazole (149-30-4), and molybdenum trioxide (1313-27-5)** since these chemicals are now classified as an Occupational Safety and Health Administration (OSHA) carcinogen due to an assessment by the International Agency for Research on Cancer (changed from 1.0% to 0.1%).

Chemical List Changes

A rule was published on June 7, 2018, adding a category of 13 specific nonylphenols ethoxylates (NPEs) to the TRI list of reportable chemicals.

- Facilities that manufacture, process, or otherwise use NPEs must submit reports for this chemical category by July 1, 2020 on data for *Reporting Year 2019.*
- *https://www.epa.gov/toxics-release-inventory-tri-program/addition-npes-category-tri-list-final-rule*

Chemical List Changes

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) adds certain per- and polyfluoroalkyl substances (PFAS) to the TRI list of reportable chemicals.

- Facilities that manufacture, process or otherwise use PFAS must submit reports for the specific chemicals by July 1, 2021 on data for Reporting Year 2020.
- PFAS chemicals will be individually listed and subject to manufacturing, processing, and otherwise use reporting thresholds of 100 pounds.
- https://www.epa.gov/toxics-release-inventory-tri-program/addition-certain-pfas-tri-national-defense-authorization-act

SECTION II: ADVANCED REPORTING GUIDANCE

Non-PBT TRI Chemical Activity Thresholds

A facility meeting the first two applicability criteria for reporting must file a TRI Report for a non-PBT Section 313 chemical if the facility:

NON-BPT 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

OR

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

- Most of the 650+ chemicals and chemical categories on the Section 313 list are non-PBT chemicals. Some chemicals have qualifiers (see the Reporting Forms and Instructions, Table II). Guidance documents for many chemicals are available at: https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:gd-list#chemical

PBT Chemicals and Activity Thresholds

PBT chemicals 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
- Pendimethalin
- Polycyclic Aromatic Cmpds.
- Tetrabromobisphenol A
- Trifluralin
- Methoxychlor

10 lb/yr (manufactured, processed, or otherwise used):
- Chlordane
- Heptachlor
- Mercury
- Toxaphene
- Isodrin
- PCBs
- 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 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
- Not including 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 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

Section 313 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 Section 313 chemicals in fuels combusted for energy are considered otherwise used.

Exemptions

- TRI regulations **provide exemptions** for specific scenarios.
- These exemptions allow for a facility to **not consider quantities** of toxic chemicals for certain threshold determinations and waste management calculations.
- To learn more about TRI exemptions, **please visit:**
  - *https://ofmpub.epa.gov/apex/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 Section 313 chemical are manufactured as by-products, coincidentally as impurities, or otherwise manufactured, they must be considered toward the manufacturing threshold.
- Section 313 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.
- 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.

- Separate activity threshold determinations.
- Report for each listing (e.g., nickel or nickel compound) only if the 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 exceeded for both the elemental metal and metal category compound (e.g., nickel and nickel compounds), you may report separately or file one combined report.
  - *If combined, file as metal and metal category compound.*
  - *The reason both the elemental metal and its compound may be reported on the same form is that while the entire weight of the compound is used to determine the threshold, only the amounts of the parent metal are reported.*

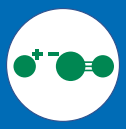
Cyanide Compounds and Hydrogen Cyanide

Cyanide compounds have the form $X^{+}CN^{-}$ where X = any other group 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

- An individually listed toxic chemical
- Current EPA guidance is to not count hydrogen cyanide as part of cyanide compounds for thresholds and release and waste management reporting



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.

* *Qualifier for cyanide compounds states: $X^{+}CN^{-}$, where $X=H^{+}$ or any other group where a formal dissociation may occur. 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 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 run off.
- 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?

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 (HNO_3) with sodium hydroxide (NaOH) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ($NaNO_3$), which is discharged to a nearby water body.

The molecular weight (MW) of HNO_3 = 63 and the MW of $NaNO_3$ = 85. One mole of HNO_3 generates one mole of $NaNO_3$.

Does the facility exceed the manufacturing threshold for nitrate compounds?

Select Yes or No

Quiz #1: Question 3

A facility neutralizes 20,000 lb of nitric acid (HNO_3) with sodium hydroxide (NaOH) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ($NaNO_3$), which is discharged to a nearby water body.

The molecular weight (MW) of HNO_3 = 63 and the MW of $NaNO_3$ = 85. One mole of HNO_3 generates one mole of $NaNO_3$. The MW of the nitrate ion NO_3 = 62.

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

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 thresholds and releases
  - *Including air releases from aqueous ammonia*
- Amounts from aqueous sources and anhydrous sources get added together for threshold determinations and ammonia reports.

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 of the 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 have a chemical qualifier….They are reportable only if in the aerosol form.

- These aerosols are common combustion 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

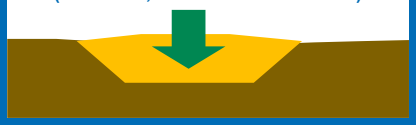
Migration of a Section 313 chemical contained in waste disposed or released from one environmental medium to another within the reporting year:

- 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.

Year 1

2,000 lb to surface impoundment

(Form R: 1,000 lb in Section 5.5.3B)



Year 1

1,000 lb to air

(Form R: 1,000 lb in Section 5.1)

Chemical Migration Guidance

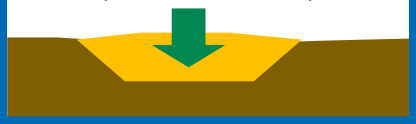
Migration of a Section 313 chemical contained in waste disposed or released from one environmental medium to another within the reporting year:

- 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.

Year 1

2,000 lb to surface impoundment

(Form R, Section 5.5.3B)



Year 2

500 lb leachate in year 2

Not reported on Year 2 Form R

EPA Compliance Incentives

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 can be found by visiting:

- https://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:

- https://www.epa.gov/compliance/epas-audit-policy

EPA Self-Disclosure Audit Policy

EPA Compliance Incentive Policy 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 which may have been realized by the facility.

Conditions to qualify (four criteria):

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:

- https://www.epa.gov/compliance/small-business-compliance

Revising TRI Data

Revised TRI data that are not trade-secret must be submitted using TRI-MEweb through the Internet via EPA's CDX. You may only revise back to RY 1991.

If your state or tribe participates in the TRI Data Exchange (TDX) then **submitting via CDX to EPA will also satisfy your obligation** to report to the state or tribe in which your facility is located if the revision is for RY 2005 through the present reporting year. Otherwise, revisions must also be submitted in the state- or tribe-specified format. To determine if your state or tribe is in TDX go to:

- https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange

Withdrawing TRI Data

You must use TRI-MEweb to withdraw a TRI form (except for trade secrets). You may withdraw forms back to RY 1991.

For more information regarding withdrawals, go to the following tutorial:

- https://www3.epa.gov/tri/tutorials/TRIT-33/

Please be aware if your state or tribe is a TRI Data Exchange (TDX) participant, submitting to EPA via CDX will also satisfy your state obligations for reporting years back to 2005. For states or tribes that are not TDX participants, withdrawals should also be submitted in the specified format for the state/tribe.

Submitting Revisions and Withdrawals

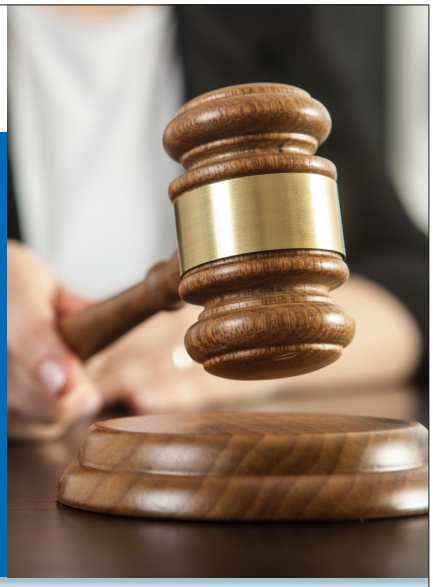
Form R submitted to replace previously filed Form A Certification Statement.

- You must withdraw the previously filed Form A Certification Statement and then submit a Form R. The Form R is considered to be a late submission if submitted after the reporting deadline.

For a change in chemical 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 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:
  - *https://www.epa.gov/sites/production/files/2017-03/documents/epcra313erpamendments2017.pdf*

SECTION III: DETAILED PBT GUIDANCE

PBT Chemicals

Organic Compounds:

- Benzo(g,h,i)perylene, Dioxin and dioxin-like compounds category, Hexabromocyclododecane, Hexachlorobenzene, Octachlorostyrene, Pentachlorobenzene, Polycyclic aromatic compounds (PAC) category, Polychlorinated biphenyl (PCB), and Tetrabromobisphenol A (TBBPA)

Metals

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

Pesticides:

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

PBT chemicals are subject to separate and 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 in decimal amounts.
- Cannot use range codes
- 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 gram.

Dioxins 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 it takes 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 individually listed 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 Factors (TEFs) 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:

- https://ofmpub.epa.gov/apex/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 PBT 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 PBT except for lead contained in stainless steel, brass, and bronze alloys

PBT activity threshold for lead and lead compounds:

- 100 pounds for lead (not contained in stainless steel, brass, or bronze)
- 100 pounds for lead compounds

Non-PBT activity threshold for lead:

- Non-PBT thresholds apply to lead contained in stainless steel, brass, or bronze*.
  - *25,000 pounds for manufacture or process*
  - *10,000 pounds for otherwise use*
- 0.1% *de minimis* limit for non-PBT forms of lead

* *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[1], AND lead not in stainless steel, brass or bronze alloy?

[1]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** → **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.
- **NO** → **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** → **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** → **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

B. Manufacturing only

C. Neither

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

B. Range Code 'A'

C. 95.2 lb

D. Either 2.86 lb or Range Code 'A'

PACs and Benzo(g,h,i)perylene

PBT activity threshold

- 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-processes access roads – EXEMPT

See also EPA's PACs and PBTs guidance

- https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:gd-title::::title:pacs
- https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:gd-title::::title:pbts

PACs (cont.)

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

Mercury and Mercury Compounds

PBT activity threshold:

- 10 pounds for mercury
- 10 pounds for mercury compounds

Combustion of fuels is expected to be a main source of mercury triggering a reporting 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 x 10^9 gallons
- No. 6 Fuel Oil: 1.89 x 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 Section 313 chemicals are released from all like items as a result of processing or 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

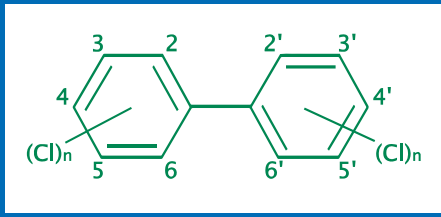
Polychlorinated Biphenyls (PCBs)

PBT activity threshold: 10 pounds

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

Otherwise use:

- On-site treating or disposing PCB-contaminated waste received from off-site
- Combusting PCB-contaminated oil



Polychlorinated Biphenyls (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 "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 for PCBs.

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

SECTION IV: TOOLS AND ASSITANCE

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

- Browse frequently asked questions and answers.
- Browse guidance materials.
- Available at: https://epa.gov/tri/guideme

Reference Sources

EPA Industry Guidance located at:

- https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:gd-list

AP-42: Compilation of Air Pollutant Emission Factors located at:

- https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors

Technology Transfer Network located at:

- https://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 Information

Visit the new:
TRI Pollution Prevention web page

- https://www.epa.gov/toxics-release-inventory-tri-program/pollution-prevention-p2-and-tri

Pollution Prevention Information Clearinghouse (PPIC)

- (202) 566-0799
- www.epa.gov/ppic

TRI Contact Information

TRI Technical Support

- For technical questions related to TRI-MEweb and the Central Data Exchange (CDX), please contact the CDX Hotline at helpdesk@epacdx.net or call toll-free at (888) 890-1995.

TRI Information Center

- Provides a toll free number that facilities may call to obtain guidance on TRI reporting requirements and help on completing the TRI reporting forms
- The number is (800) 424-9346. Callers in the Washington, D.C. metropolitan area call (703) 348-5070. The TDD is (800) 553-7672.

TRI Regional Coordinators

- https://www.epa.gov/toxics-release-inventory-tri-program/tri-regional-coordinators

SECTION V: TRI-MEweb

TRI-MEweb and Submitting Via CDX

Electronic filing via TRI-MEweb is required

- No paper submissions are accepted (except for trade secrets), including 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:
  - *www2.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources*.

Use hard-copy form only for trade secret reporting

- Information about trade secret reporting at:
  - *https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:rfi:0::::rfi:apx_g*.

All TRI reports must be prepared and certified by July 1st following the calendar year's activities (aka Reporting Year (RY))

- July 1, 2020 deadline for RY 2019 (January 1 - December 31, 2019) activities

Accessing TRI-MEweb

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

- CDX is accessed through: https://cdx.epa.gov.
- TRI-MEweb users must have a CDX account.
- Select 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 code.
- Option 2: Enter TRIFID and Technical Contact Name.
- Option 3: Begin a new facility profile if the facility has never reported to TRI

For assistance with accessing your facility, contact the CDX helpdesk at 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 number or category code and name of chemical or chemical category; or
- Select "Add generic chemicals", if supplier claims trade secret.
- Indicate if Reporting Form R or From A (non-PBT chemicals only).

TRI-MEweb preloads previous year's reporting details using "Import Forms."

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) Edit	Current Year (RY 2018)	Reporting Year 2019 Use Current Year Quantities	Reporting Year 2020 Use Current Year Quantities
Section 8.1a: Total On-site Disposal to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills	NA	700 Edit	700 NA	700 NA
Section 8.1b: Total Other On-site Disposal or Other Releases	NA	1,450 Edit	1450 NA	1450 NA
Section 8.1c: Total Off-site Disposal to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills	NA	4,300 Edit	4300 NA	4300 NA
Section 8.1d: Total Other Off-site Disposal or Other Releases	NA	NA	NA	NA
Section 8.2: Quantity Used for Energy Recovery On-site	NA	Edit	NA	NA
Section 8.3: Quantity Used for Energy Recovery Off-site	NA	NA	NA	NA
Section 8.4: Quantity Recycled On-site	NA	6,000 Edit	6000 NA	6000 NA
Section 8.5: Quantity Recycled Off-site	NA	NA	NA	NA
Section 8.6: Quantity Treated On-site	NA	NA	NA	NA
Section 8.7: Quantity Treated Off-site	NA	2,800 Edit	2800 NA	2800 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 as long as 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 access to any pending submission (s) for certification is granted*

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

State and Tribal Submission Requirements

For most facilities, reporting via TRI-MEweb automatically satisfies EPA and state or tribal reporting requirements via data sharing through the TRI Data Exchange (TDX).

For facilities in states or tribal lands not participating in TDX, TRI-MEweb will help prepare separate submissions to satisfy state or tribal reporting requirements.

All States currently participate in TDX:

- https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange

As of December 2018, one tribe (Oneida Tribe Of Indians Of Wisconsin) participates in TDX.

TDX does not support reporting for years prior to 2005.

TRI-MEweb Tutorials

TRI-MEweb has integrated online tutorials to assist users with common functions in the application.

- Tutorials cover areas such as
  - *Overview*
  - *Registration*
  - *Accessing Your Facility*
  - *Nominating a Certifying Official*
  - *Section 8 Calculator*
  - *Submitting Data*
  - *Certifying Data*
  - *Getting Help*

The tutorials can be viewed at:

- https://www.epa.gov/toxics-release-inventory-tri-program/tri-meweb-mini-tutorials

eReceipts

- Facilities can obtain a copy of their electronic receipt (formerly known as the electronic Facility Data Profile report (eFDP)) using TRI-MEweb under the Submission History tab.
- Review your eReceipt immediately after certifying TRI forms in CDX to verify that EPA processed your data correctly.
- The eReceipt provides an opportunity to review data submitted to EPA.
- It allows EPA to highlight errors and possible issues with your submission.
- If you have problems accessing your eReceipt, contact:
  - E-mail: tri.efdp@epacdx.net

TRI-MEweb Demo

If you are viewing an Online Training Module, please visit www.epa.gov/tri to view the TRI-MEweb tutorials.

END OF MODULE

Quiz Answers

Quiz #1: Question 1

A facility processes 200,000 pounds of a mixture containing 10% zinc chromate ($ZnCrO_4$) and 15% chromium dioxide (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%) × (200,000 lb) = 50,000 lb

Total zinc compounds processed:
(10%) × (200,000 lb) = 20,000 lb

The non-PBT chemical processing threshold (25,000 lb) was exceeded for chromium compounds, but not zinc compounds

Quiz #1: Question 2

A facility neutralizes 20,000 lb of nitric acid (HNO_3) with sodium hydroxide (NaOH) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ($NaNO_3$), which is discharged to a nearby water body.

The molecular weight (MW) of HNO_3 = 63 and the MW of $NaNO_3$ = 85. 1 mole of HNO_3 generates 1 mole of $NaNO_3$.

Does the facility exceed the manufacturing threshold for nitrate compounds?

Answer: Yes

The quantity of nitrate compounds manufactured =
(quantity of HNO_3 neutralized) × (MW of $NaNO_3$ / MW of HNO_3)

$NaNO_3$ manufactured =
(20,000 lb) × (85/63) = 26,984 lb (rounded to 27,000)

The 25,000 lb manufacturing threshold for non-PBT chemicals 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 (HNO_3) with sodium hydroxide (NaOH) in an on-site wastewater treatment system. The neutralization is 100% complete and generates sodium nitrate ($NaNO_3$), which is discharged to a nearby water body. The molecular weight (MW) of HNO_3 = 63 and the MW of $NaNO_3$ = 85. 1 mole of HNO_3 generates 1 mole of $NaNO_3$

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 (NO_3^-) basis. Based on molecular weights ($NaNO_3$ = 85, 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 $NaNO_3$) x (MW of NO_3^- / MW of $NaNO_3$) = (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 lb) * (7 x 10-6) = 95.2 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 lb) * (223/207) = 103 lb

Since lead is expected to be present in coal in compound, you could consider that 103 lb of lead compounds was combusted and, therefore, otherwise used

Total lead oxide manufactured (103 lb) exceeds the threshold for manufacturing and otherwise use 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 lb coal)/(2,000 lb/ton) = 6,800 tons coal

Point Source Emissions =
4.2E-4 (lb Pb/ton coal) × 6,800 tons coal = 2.86 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 PBT chemicals. While threshold determination is 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)