United States Environmental Protection Agency

Toxics Release Inventory Reporting Requirements

Basic 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

INTRODUCTION

What is EPCRA Section 313 and TRI?

Section 313 of EPCRA requires facilities to file a TRI report annually for each Section 313 chemical exceeding an activity threshold (manufacturing, processing, or otherwise use)

- Section 313 chemical list contains 595 individually listed chemicals and 33 chemical categories

Facilities exceeding an activity threshold must report if they are

- In a "covered sector" (defined by NAICS codes); and
- Have 10 or more employees

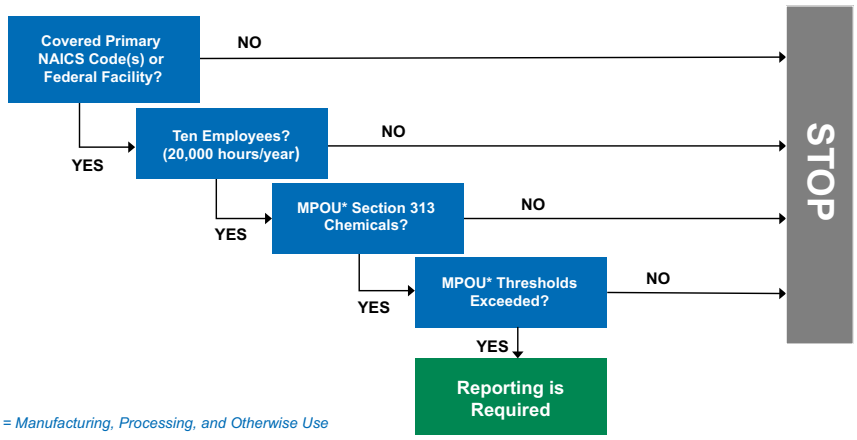
Submit TRI reports to U.S. EPA and either

- Designated state officials, or
- Designated tribal office

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

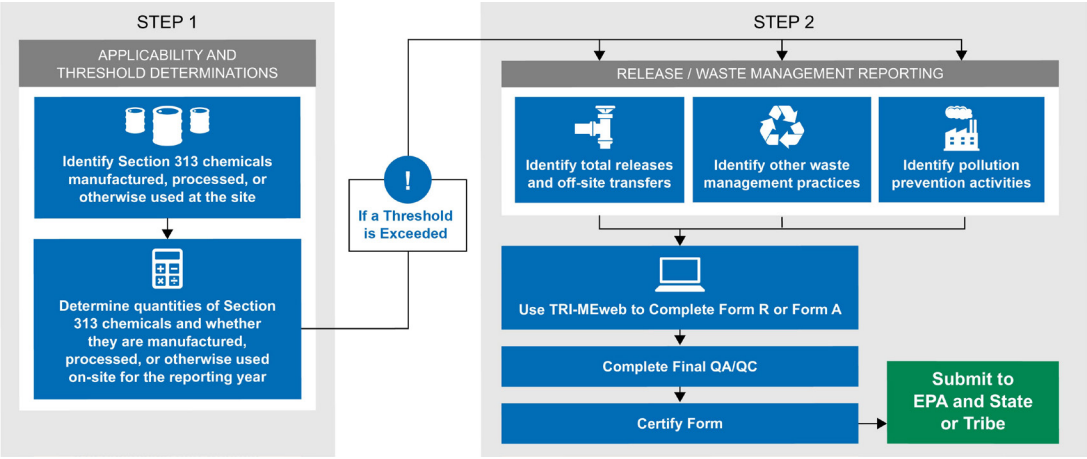
- July 1, 2020 deadline for RY 2019 (January 1 - December 31, 2019) activities

Toxic Reporting Requirements



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

TRI Process: 2 Step Process



SECTION 1: COVERED SECTORS

Industrial Sectors Covered

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

Covered NAICS Codes

2017 North American Industry Classification System (NAICS) codes are used for TRI reporting

To determine whether your facility's primary NAICS code is covered by TRI regulations, see:

https://www.epa.gov/toxics-release-inventory-tri-program/tri-covered-industry-sectors

TRI-Covered* Industries NAICS

- 212 Mining
- 221 Utilities
- 31 - 33 Manufacturing
- All Other Miscellaneous Manufacturing (includes some sectors under NAICS 1119, 1133, 2111, 4883, 5417, 8114)
- 424 Merchant Wholesalers, Non-durable Goods
- 425 Wholesale Electronic Markets and Agents Brokers
- 511, 512, 519 Publishing
- 562 Hazardous Waste
- Federal Facilities

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

Federal Facilities

Federal facilities (covered by Executive Order 13423 and its implementing instructions)

- Required to report regardless of their NAICS code
  - *Includes military bases, federal prisons, national parks, etc*
- Other reporting requirements apply
  - *10 or more full-time employees*
  - *Exceed manufacture, process, or otherwise use thresholds of a listed chemical*
- The federal agency or department that owns or operates the facilities is responsible for reporting
- Government owned contractor operated (GOCO) facilities
  - *Same reporting requirements as non-federal facilities*
  - *Counted as federal facilities in TRI data analysis*
- See Federal Facility Reporting Information guidance document
  - *https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:gd:::::gd:fed_fac*

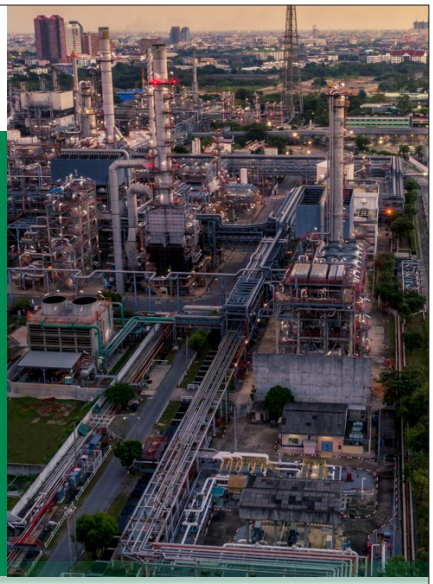
Definition of "Facility"

TRI reporting requirements are determined by activities at "facilities."

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

> *Facility - all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person).*
>
> ***EPCRA § 329 (4)***

Multi-Establishment Facility



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

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

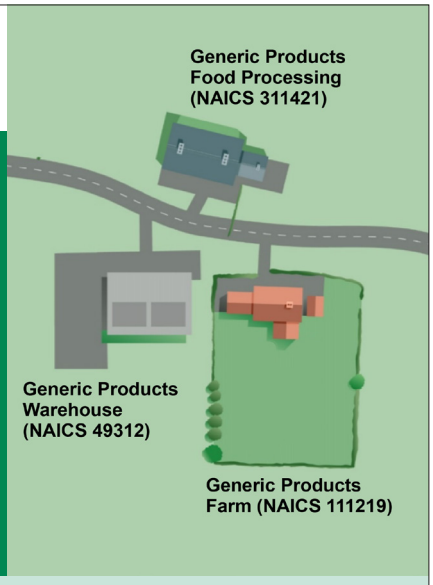
When a majority is not present, the primary NAICS is determined by the plurality of greatest percentage of value added.

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

Example of a Multi-Establishment Facility

Three separate establishments with distinct and separate economic units located on contiguous/ adjacent property owned by same person(s) is one facility under EPCRA
(40 CFR §§ 372.22(b) and 372.3)

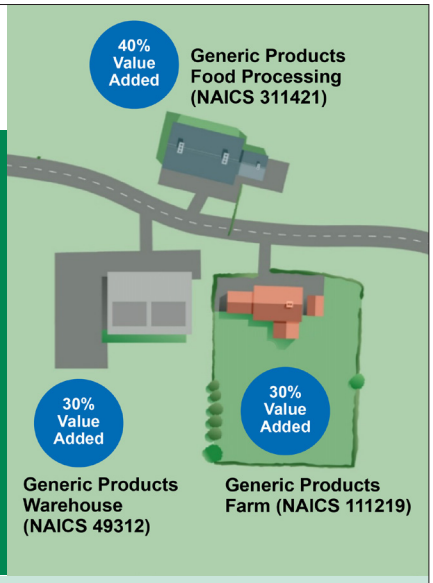
- Establishment - unique and separate economic unit of a facility (See 40 CFR § 372.3)



Example of a Multi-Establishment Facility

In this example, the plurality is with the foods processing establishment

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



Employee Threshold

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

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

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

Quiz #1: Question 1

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

Select Yes or No

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

Quiz #1: Question 2

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

Select Yes or No

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

Quiz #1: Question 3

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

Select Yes or No

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

SECTION II: LISTED CHEMICALS AND ACTIVITY THRESHOLDS

Section 313 Chemicals and Chemical Categories

Current list contains over 650 individual chemicals and chemical categories (See Table II of the EPA's TRI Reporting Forms and Instructions document.) There are 4 parts to the chemical list:

- Individual chemicals listed alphabetically by name
- Individual chemicals listed by CAS #
- Chemicals with qualifiers
- Chemical categories

The list can change. Check every year. Changes are listed in the front of the TRI Reporting Forms and Instructions on the TRI website and in TRI-MEweb

Section 313 chemical list and more information available at:

https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals

TRI Chemical Categories

Metal compound chemical categories

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

For all categories: Includes any unique chemical substance that contains the element or compound as part of that chemical's infrastructure

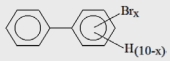
* Does not include Barium Sulfate CAS 7727-43-7

** Except chromite ore and unreacted ore component of processing residue (see RFI for further information)

*** Does not include copper Phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine and/or bromine

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

EPCRA TRI Chemical Categories (examples)

Chlorophenols	
Cyanide Compounds	XCN where X=H or any other group where a formal dissociation may occur. For example, KCN or $Ca(CN)_2$
Diisocyanates	20 individual compounds cited in Category
Dioxin and Dioxin-Like Compounds	17 individual compounds cited in Category
Ethylenebisdithiocarbamic acide, salts and esters (EBDCs)	Includes a substance that may contain EBDC or EBDC salt or ester as part of its infrastructure
Certain Glycol Ethers	Complex definition
Nicotine and salts	Includes a substance that may contain it or salt as part of *its infrastructure*
Nitrate Compounds	Water dissociable, reportable only when in *aqueous solution*
Polybrominated Biphenyls (PBBs)	

Section 313 Chemicals With Qualifiers

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

Below are some examples (see Table II of EPA's *TRI Reporting Forms and Instructions* document for full list of chemical qualifiers):

CHEMICAL	CASRN	QUALIFIER
Aluminum	7429-90-5	Fume or dust
Aluminum oxide	1344-28-1	Fibrous forms
Asbestos	1332-21-4	Friable
Isopropyl alcohol	67-63-0	Only manufacturers using the strong acid processes
Hydrochloric acid	7647-01-0	Acid aerosols
Phosphorus	7723-14-0	Yellow or white
Saccharin	81-07-2	Manufacture only
Sulfuric Acid	7664-98-8	Acid aerosols
Vanadium	7440-62-2	Except when contained in an alloy
Zinc	7440-66-6	Fume or dust

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

Toxic Chemical Activity Thresholds

A TRI report must be prepared and submitted for any chemical that has exceeded an activity threshold

Threshold calculations are based on cumulative quantities of each Section 313 chemical manufactured, processed, or otherwise used over the reporting year for the whole facility

Each activity threshold is treated separately:

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

Lower thresholds apply to the 21 chemicals/chemical categories designated as persistent, bioaccumulative, and toxic (PBT) chemicals

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)		Processed		Otherwise Used
more than *25,000* pounds of the chemical in the reporting year	OR	more than *25,000* pounds of the chemical in the reporting year	OR	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

Listed PBT* TRI Chemicals

Within the list of 650+ chemicals and chemical categories, there is a subset designated as being of special concern and commonly referred to as PBT chemicals (40 CFR § 372.28)

PBT chemicals have lower activity thresholds and different reporting requirements than non-PBT TRI chemicals

- Special rules often apply to PBT chemicals

21 chemicals and chemical compound categories are classified as PBTs and have lower activity thresholds

**PBT = Persistent, Bioaccumulative, Toxic*

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

Manufacturing Activities

Manufacturing (EPCRA §313(b)(1)(C)(i) and 40 CFR § 372.3): Generating a Section 313 chemical

Intentionally producing chemicals for:

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

Coincidentally producing chemicals as impurities* or by-products:**

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

Importing:

- "Cause" to be imported

**Impurity=TRI chemical that still remains with the final facility product as it is distributed into commerce*
***By-product=TRI chemical that is separated out from the process mixture before it becomes the final product*

Processing Activities

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

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

Repackaging as a Processing Activity

Repackaging a Section 313 chemical for distribution in commerce is considered processing

Repackaging includes:

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

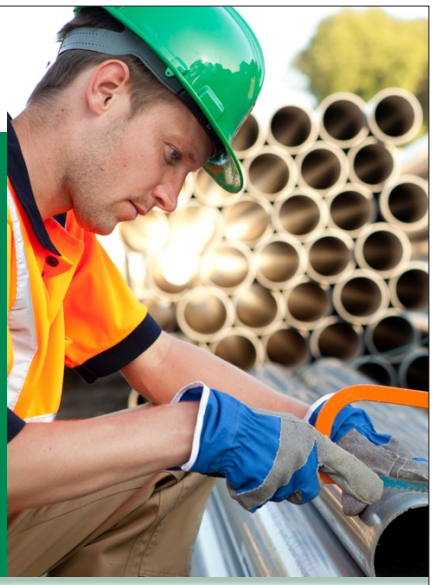
Repackaging does not include:

- Sampling without repackaging
- Re-labeling

Repackaging without distribution into commerce is not processing

Transfer to a storage tank for mere storage is not processing

Otherwise Use Activities



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

Examples

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

Otherwise Use Activities (continued)

Managing wastes received from off-site also counts as "Otherwise Use"

- Disposal, treatment for destruction on-site, or stabilization that does not result in further distribution in commerce are considered otherwise use if:
  - *Section 313 chemical was received from off-site for the purposes of further waste management, or*
  - *Section 313 chemical was manufactured as a result of waste management activities on materials received from off-site for the purpose of further waste management*
- On-site energy recovery is an otherwise use activity.
- Waste management activities, including on-site recycling, treatment for destruction, waste stabilization and release/disposal of Section 313 chemicals in wastes generated on-site are not threshold activities.

Calculating Activity Thresholds

The threshold quantity is the total amount manufactured, processed, or otherwise used, NOT the amount released.

Calculate the total amount of Section 313 chemical used for a specific threshold activity.

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

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

Example of Calculating Activity Thresholds

Over the course of a reporting year, a facility manufactures 24,000 pounds of a non-PBT chemical, subsequently process that amount, and also happen to otherwise use 9,000 pounds of the same chemical. That facility has not exceeded a non-PBT chemical activity threshold and would NOT be required to submit a TRI report for that chemical.

Threshold Determination for Compound Categories

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

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

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

Activities That Are Not TRI Threshold Activities

Activities that, alone, do NOT constitute a threshold activity

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

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

Quiz #2: Question 1

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

Select your choice

A. 27,000 lb

B. 24,000 lb

C. 3,000 lb

Quiz #2: Question 2

If a facility processes 20,000 lb of methylene diphenyl diisocyanate (MDI) in one operation and 10,000 lb of isophorone diisocyanate in another operation during the reporting year, what should it apply towards it's processing threshold for the diisocyanates category?

Select your choice

A. 10,000 lb

B. 20,000 lb

C. 30,000 lb

Quiz #2: Question 3

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

Select your choice

A. copper compounds and sulfuric acid

B. only copper compounds

C. only sulfuric acid

Section III: Reporting Exemptions

Reporting Exemptions

If an exemption applies, then the amount of Section 313 chemical subject to the exemption does NOT have to be included in:

- Threshold determinations
- Release and waste management reporting

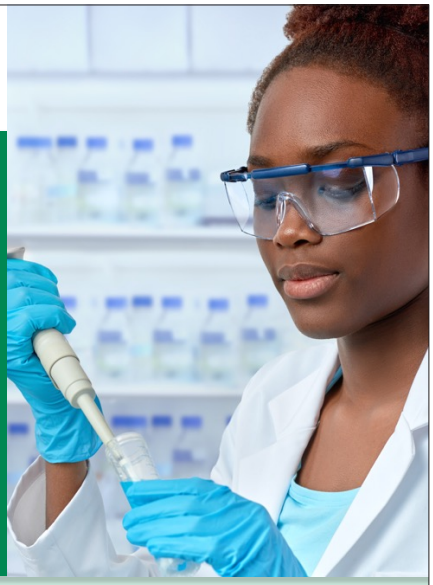
Recognize that exemptions only apply to certain limited circumstances.

Misusing exemptions may lead to enforcement action.

To learn more about TRI exemptions, please visit:

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

Reporting Exemptions



Types of exemptions (40 CFR § 372.38)

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

De Minimis Exemption

The quantity of a non-PBT Section 313 chemical in a mixture or other trade name product is eligible for the *de minimis* exemption (40 CFR §372.38(a)) if the chemical is:

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

The TRI *de minimis* level appears next to each chemical on the chemical list in Table II of the TRI Reporting Forms and Instructions (1.0, 0.1 or * for PBT chemicals where *de minimis* is not allowed (See 40 CFR §372.38(a)))

De Minimis Exemption: How it Works

***De minimis* exemption generally applies to non-PBT chemicals:**

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

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

- Manufactured chemicals (in most cases): this includes by-products produced from manufacturing, processing, otherwise use, or any waste management
- Wastes received from off-site
- PBT chemicals (except for supplier notification)

PBT Chemicals and the De Minimis Exemption

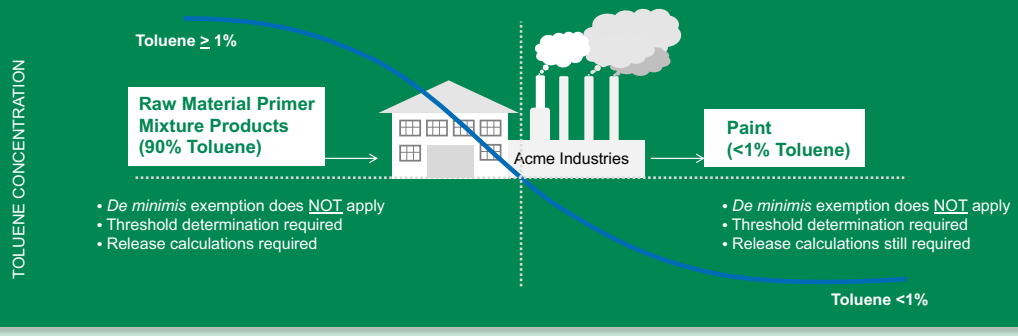
The *de minimis* exemption cannot be applied to PBT chemicals.

All other EPCRA section 313 exemptions can apply to PBT chemicals.

Facilities that receive a mixture and know that PBT chemicals are present must consider each PBT chemical in threshold and release calculations regardless of whether or not supplier notification was provided

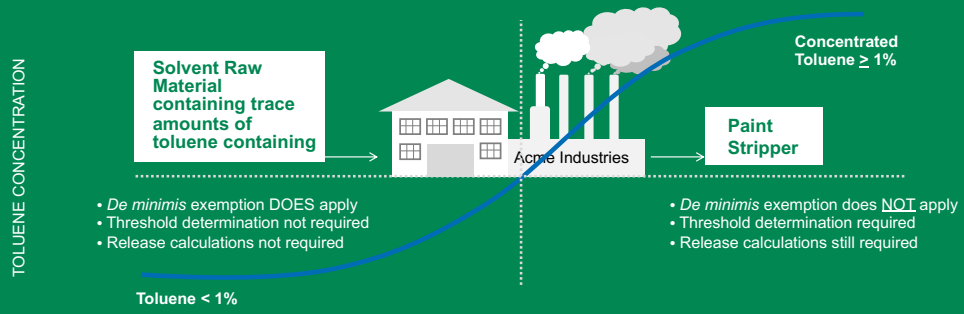
De Minimis Exemption: How It Works… (cont.)

Processing a non-PBT Section 313 chemical in a mixture to below the *de minimis* concentration does NOT exempt the chemical from threshold determinations and release calculations



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

Processing a non-PBT Section 313 chemical in a mixture to above the *de minimis* concentration triggers threshold determinations and, if thresholds are met, release calculation requirements



Article Exemption Applicability

To qualify for the article exemption, the article must meet 3 criteria (40 CFR § 372.3):

1. Is formed into a specific shape or design during manufacture; and
2. Has end-use functions dependent in whole or in part on its shape or design during end-use; and
3. Does NOT release a Section 313 chemical under normal processing or use conditions at a facility

Article Exemption: How it Works

Releases of a Section 313 chemical from an article may negate the exemption. To maintain the article status, total releases from all like items must be:

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

If more than 0.5 pound per year of a Section 313 chemical is released from all like items in a form not having a specific shape or design and is not recycled or directly reused, none of the items meet the articles exemption.

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

See the articles exemption summary on GuideME for more information:

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

Article Exemption: Examples

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

- Generation of off-spec cuts that are recognizable as articles will not, by themselves, negate the article status
- Dust and off-spec cuts not recognizable as articles, with greater than 0.5 pound of ANY Section 313 chemical released annually, and not recycled or directly reused, negate the article status.

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

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

Article Exemption

Article Exemption is often inappropriately used!

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

The articles exemption does not apply to the actual manufacturing of articles.

Laboratory Activity Exemptions: How it Works

Section 313 chemicals used in these laboratory activities under the direct supervision of a technically qualified individual ARE exempt from threshold and release and waste management reporting (40 CFR § 372.38(d)):

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

Section 313 chemicals used in these laboratory activities are NOT exempt:

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

Motor Vehicle Maintenance Exemption

Section 313 chemicals used to maintain vehicles operated by the facility are eligible for the exemption from threshold determinations (40 CFR § 372.38(c)(4))

- "Otherwise use" exemption

Motor vehicles include cars, trucks, tanks, and forklifts

Motor vehicle maintenance includes:

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

***Note**: This exemption does NOT apply to "manufacture" of Section 313 chemicals from combustion of fuels*

Routine Janitorial or Facility Grounds Maintenance Exemption

Section 313 chemicals contained in products used for non-process related routine janitorial or facility grounds maintenance ARE eligible for exemption (40 CFR § 372.38(c)(2)):

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

Section 313 chemicals used in the following activities are NOT exempt

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

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

Structural Component Exemption

Section 313 chemicals used as structural components are eligible for exemption (See 40 CFR § 372.38(c)(1)). Building components that are process-related are not "structural components" as contemplated by the exemption

Non-process-related building components that are "structural components" and therefore eligible for the exemption include:

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

Processed-related building components that are NOT "structural components" and therefore NOT eligible for the exemption include:

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

Other Section 313 "Otherwise Use" Exemptions

Section 313 chemicals contained in non-process-related items for employee personal use (40 CFR § 372.38(c)(3)):

- Non-Federal Facilities:
  - *HCFC 22 in air conditioners used solely for employee comfort (exemption does NOT cover process cooling using chemical-based cooling systems)*
  - *Chlorine used to treat on-site potable water*
  - *Phenol used in a facility medical dispensary*
- Federal Facilities:
  - *Does not include TRI chemicals used for providing services to non-employees (e.g., patients in federal hospitals, prisoners, park visitors)*

Section 313 chemicals found in intake water and air.

Sector Specific Exemptions

Coal mining extraction activities are exempt from threshold determinations and release reporting (40 CFR § 372.38(g)) (applies to NAICS Codes 212111-212113):

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

Chemicals in metal mining overburden that are processed or otherwise used are specifically exempt from TRI reporting (40 CFR § 372.38(h)) (applies to NAICS Codes 212221, 212222, 212230, 212299):

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

Section IV: Threshold Determination

Chemical Information Management

All non-exempt manufacture/processes/otherwise use of Section 313 chemicals at the facility must be counted towards chemical activity thresholds.

Tracking toxic chemicals entering facility

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

Need cooperation and support from all functional groups purchasing or using Section 313 chemicals

Be comprehensive to ensure accurate threshold determination!

Threshold Determinations

Identify Chemicals and Concentrations

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

→

Collect Data to Calculate Thresholds

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

TRI Chemicals Contained in Mixtures

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

The *de minimis* exemption (40 CFR § 372.38(a)) applies to non-PBT chemicals contained in mixtures at less than 1.0% or 0.1% (for carcinogens).

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

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

Determining Concentrations in Mixtures or Other Trade Name Products

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

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

Determining Concentrations in Wastes

%

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

bd

If concentration is below detection limit, use engineering judgment:

- If the Section 313 chemical IS expected to be present, assume 1/2 of full detection limit
- If the Section 313 chemical is NOT expected to be present, assume 0

Supplier Notification

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

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

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

Suppliers of mixtures containing PBT chemicals below *de minimis* concentrations do not need to supply notification.

Watch for Double Counting

For threshold determinations, Section 313 chemicals recycled from spent or contaminated materials or Section 313 chemicals directly reused:

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

Section 313 chemicals that are stockpiled or in inventory but not manufactured, processed, or otherwise used during reporting year are NOT counted for threshold determinations.

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

Count the Original Amount Used Only Once

Example

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

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

Multi-Establishment Facility

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

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

Example: EPCRA Section 313 Non-PBT Chemical Reporting Threshold Worksheet

Facility Name: Omni Chemical
Toxic Chemical or Chemical Category: Toluene
Reporting Year: _____

Date Worksheet Prepared: _____
Prepared By: J.S.P.

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

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

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

Mixture Name as Listed Above	Applicable Exemption	Note Fraction or Percent Exempt (if Applicable)	Exempt Amount of the Toxic Chemical from Above (in lb): Manufactured	Processed	Otherwise Used
1. Bathroom Paint	Struct. Comp.	100			1,500
2.					
3.					
4.					
5.					
6.					
7.					
Subtotal:			(A_1) _____ lb	(B_1) _____ lb	(C_1) 1,500 lb

Step 3. Calculate the amount subject to threshold: (A - A_1) _____ lb (B - B_1) 22,500 lb (C - C_1) 9,000 lb

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

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

Lessons Learned

Begin early

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

Team approach

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

Recordkeeping & Documentation

- Keep good records and document all work.

Record Keeping and Documentation

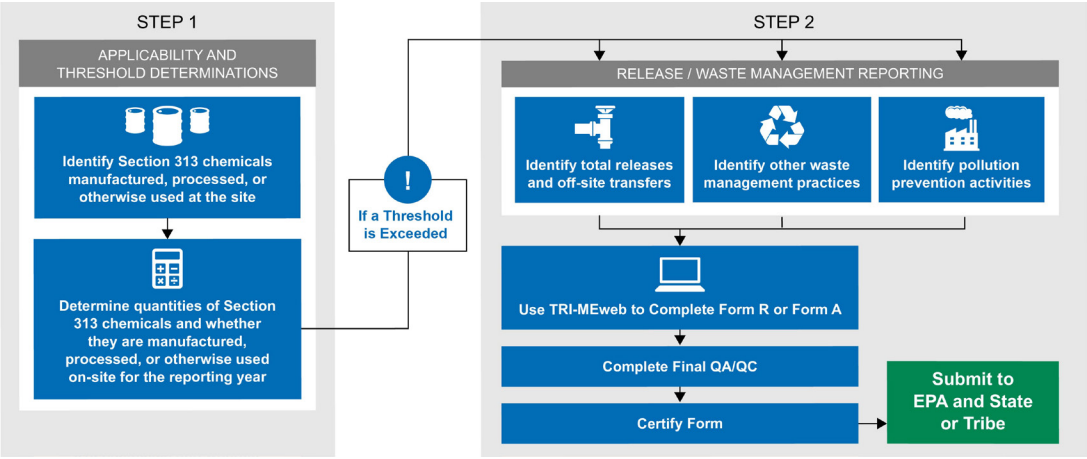
Importance of good record keeping:

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

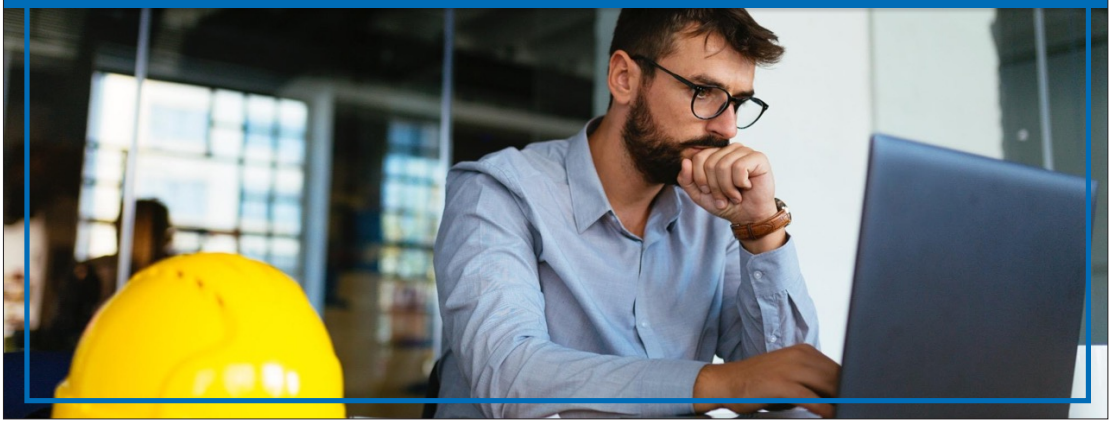
EPA Requirements

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

TRI Process: 2-Part Process



Section V: Overview of Form R



Overview of Form R

Two principal types of information required:

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

One form must be submitted to EPA and to the State/Tribe for each Section 313 chemical or chemical category exceeding applicable thresholds (assuming other reporting criteria are met).

Forms must be submitted electronically via TRI-MEweb. No paper submissions are accepted (except for trade secrets), including revisions and withdrawals.

Form R Content

Part I: Facility Identification Information

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

Part II: Chemical Identification Information

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

Part I: Facility Identification

Facility Name and Address (Section 4.1)

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

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

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

Part I: Facility Identification (continued)

Technical and Public Contact information (Sections 4.3 and 4.4)

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

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

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

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

Part I: Facility Identification (continued)

Parent Company Information (Section 5)

- Parent company name (Section 5.1)
- Parent company Dun and Bradstreet number (Section 5.2)
- TRI-MEweb preloads standardized Parent Company names and D&B number for prior TRI reporters. Reporter may change these preloaded values, if necessary.
- For new TRI reporters, the TRI-MEweb software has a list of standardized Parent Company names. If reporters cannot find correct name from the provided list, enter a new name.

To verify the accuracy of facility and parent company D&B number and name, go to: https://www.dnb.com/duns-number/lookup.html or call 1-888-814-1435

Part II: Chemical-Specific Information

EPCRA Section 313 Chemical Identify (Sections 1 and 2)

The vast majority of submitted forms use these sections to identify the EPCRA section 313 chemical being reported:

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

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

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

If claiming chemical name as a trade secret:

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

Activities and Uses

Activity and Uses of the EPCRA Section 313 Chemical at the Facility (Section 3)

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

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. ☐ Produce b. ☐ Import If Produce or Import c. ☐ For on-site use/processing d. ☐ For sale/distribution e. ☐ As a byproduct f. ☐ As an impurity	a. ☐ As a reactant b. ☐ As a formulation component c. ☐ As an article component d. ☐ Repackaging e. ☐ As an impurity f. ☐ Recycling ☐ ☐ ☐ ☐ ☐ Enter 4-digit code(s) from instruction package	a. ☐ As a chemical processing aid b. ☐ As a manufacturing aid c. ☐ Ancillary or other use ☐ ☐ ☐ ☐ ☐ Enter 4-digit code(s) from instruction package

Activities and Uses (continued)

Section 3 requires indication of more specific subcategories for certain processing and otherwise use activities

3.2a. As a reactant
P101: Feedstocks
P102: Raw materials
P103: Intermediates
P104: Initiators
P199: Other

3.2b. As a formulation component
P201: Additives
P202: Dyes
P203: Reaction diluents
P204: Initiators
P205: Solvents
P206: Inhibitors
P207: Emulsifiers
P208: Surfactants
P209: Lubricants
P210: Flame retardants
P211: Rheological modifiers
P299: Other

3.3a. As a chemical processing aid
Z101: Process solvents
Z102: Catalysts
Z103: Inhibitors
Z104: Initiators
Z105: Reaction terminators
Z106: Solution buffers
Z199: Other

3.3b. As a manufacturing aid
Z201: Process lubricants
Z202: Metalworking fluids
Z203: Coolants
Z204: Refrigerants
Z205: Hydraulic fluids
Z299: Other

3.3c. Ancillary or other use
Z301: Cleaner
Z302: Degreaser
Z303: Lubricant
Z304: Fuel
Z305: Flame retardant
Z306: Waste treatment
Z307: Water treatment
Z308: Construction Materials
Z399: Other

Maximum On-Site Amount

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

Use maximum total (non-exempt) amount present at one time during reporting year, even if the Section 313 chemical is present at more than one location at the facility.

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

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

Reporting Releases and Waste Management

In the following sections, reporters provide quantitative data regarding toxic chemical releases and waste management including:

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

Tools and Data Sources for Release and Waste Management Calculations

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

Estimating Quantities Released and Managed as Waste

- **Consider all sources of toxic chemical releases and waste, both routine and non-routine.**
- **Reasonable estimates are required by law.**
- **TRI does not require additional monitoring, but it does require the best reasonable approach for making all calculations.**
- **Data and approach must be documented and should be consistent with the document approach.**
- **The upcoming slides describe an overview of the process.**

Data Precision

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

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

For estimates of non-PBT Section 313 chemicals under 1,000 pounds, a range code can be used*:

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

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

Data Precision (continued)

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

For PBT chemicals, 0.1 pound (100 micrograms for dioxins) is the smallest amount required to be reported.

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

TRI-MEweb will allow for decimal reporting for PBT chemicals (e.g., 9.3 pounds, 0.2 pounds).

“NA” vs. “0”

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

- Use “NA” (not applicable) when no possibility of the Section 313 chemical being released to or otherwise managed as waste in that media (e.g., facility has no on-site landfill; has not transferred any waste to an off-site location; has not performed on-site recycling) OR
- Use “0” when no release occurs or < 0.5 pound of a non-PBT Section 313 chemical from a waste stream is directed towards that medium.
  - *Example: Discharge to water is zero; however, release possible if control equipment fails.*
  - *Must indicate a Basis of Estimate code (i.e., M1, M2, C, E1, E2, O) for all numerical estimates, including “0.”*

Basis of Estimate Codes

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

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

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

Estimating Releases When No Data Available

Example

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

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

Release Quantity Entering Each Medium

Report total releases of the Section 313 chemical to each environmental medium on-site (Section 5):

Air:

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

Water:

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

Land:

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

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

On-Site Air Emissions

Enter total fugitive releases of the Section 313 chemical, including leaks, evaporative losses, building ventilation, or other non-point air emissions (Section 5.1).

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

Data sources commonly used for air emissions calculations.

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

On-Site Wastewater Discharges

Releases to streams or water bodies (Section 5.3)

- Use the map provided in TRI-MEweb to select the name of the receiving stream or waterbody. If not found, manually enter the name.
- Optional: Reach Code, which describes the specific location of the outfall. TRI-MEweb will automatically provide the Reach Code by using the map.
- Enter the total amount of Section 313 chemical released to each receiving stream or waterbody.
- Enter the basis of estimate code.
- Indicate percentage of total release quantity contributed by stormwater runoff (choose NA if not applicable).
- Select NA box for Section 5.3 if the facility does not discharge the Section 313 chemical to streams or water bodies.

Stream or Water Body Name	Reach Code (optional)	Total Quantity (lbs)	Numeric Basis	Basis of Estimate Code	% from Stormwater	Edit	Delete
Charles River	01090001000111	313 or Select a Range...		M2 - Monitoring, Period...	NA	Edit	Delete

Calculating Wastewater Discharges

Release to stream or water body (Section 5.3) and discharges to POTW (Section 6.1) are not the same.

- Direct AND Indirect Discharges
  - *Don't forget stormwater!*
- If no monitoring data exists, estimate based on process knowledge and/or mass balance calculation.

Data Sources

- DMRs (or related wastewater monitoring reports)
- Other monitoring data such as permit applications

On-Site Injection Wells

Underground injection to Class I wells (Section 5.4.1)

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

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

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

Form Section	Not Applicable	Total Quantity (lbs)	Numeric Basis	Basis of Estimate
Land Releases				
Section 5.4.1: On-site Underground Injection: Class I Wells	☐	or Select a Range Code		Select a Basis of Estim...
Section 5.4.2: On-site Underground Injection: Class II-V Wells	☐	or Select a Range Code		Select a Basis of Estim...

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

Other Disposal to Land On-Site

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

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

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

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

Off-Site Transfers

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

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

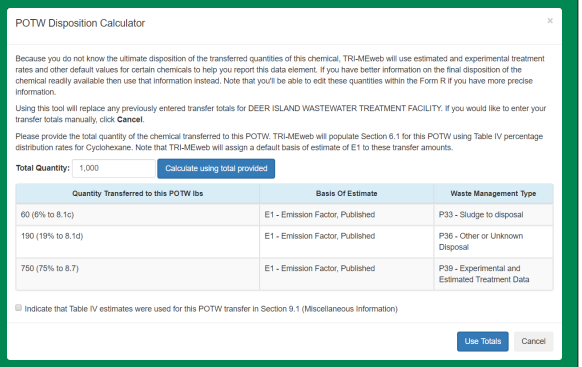
Transfers to POTWs

Discharges to Publicly Owned Treatment Works (Section 6.1)

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

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

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



POTW Disposition Calculator

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

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

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

Total Quantity: 1,000 Calculate using total provided

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

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

Use Totals Cancel

Other Off-Site Transfers

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

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

Common data and tools used to complete this section:

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

Tips for Off-Site Waste Transfers

Identify all sources of off-site transfers of TRI chemicals. Potential off-site waste transfers of reportable chemicals include:

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

Identify basis of estimate sources for waste composition data

Identify final disposition of each Section 313 chemical:

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

On-Site Waste Management

On-Site Waste Treatment

Energy Recovery

Recycling Methods (Section 7)

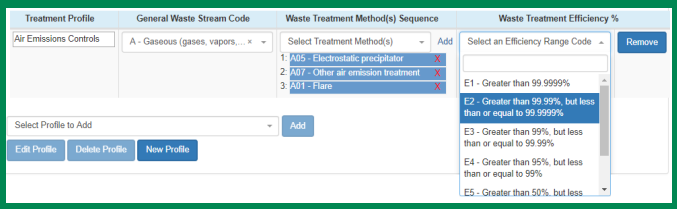
Examples of on-site waste management include:

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

Waste Treatment Methods and Efficiency

Report each waste treatment method that each waste stream containing the Section 313 chemical undergoes (Section 7A).

- Treatment methods include destruction or physical removal.
- Include all methods even if a method has no effect on the chemical.
- Report the efficiency of the waste treatment methods at eliminating the Section 313 chemical from the waste stream.
- Enter total quantity treated on-site for all methods in Section 8.6 .



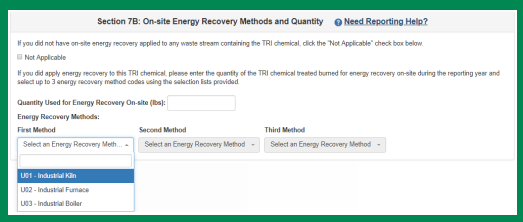
Energy Recovery Methods and Quantity

Enter on-site energy recovery methods (Section 7B) and total quantity (Section 8.2) for Section 313 chemical.

- Section 313 chemical must be combustible and have a significant heating value (>5,000 BTU/lb).
- Combustion unit is integrated into an energy recovery system (e.g., industrial furnace, industrial kiln, or boiler).

Enter codes in descending order by quantities combusted

TRI-MEweb collects methods and quantity data simultaneously.



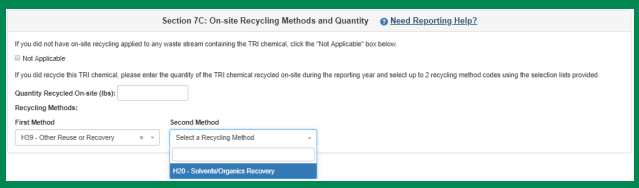
Recycling Methods and Quantity

Enter recycling methods used (Section 7C) and total quantity for on-site recycling (Section 8.4) of the Section 313 chemical.

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

Enter codes in descending order by quantities recycled.

TRI-MEweb collects methods and quantity data simultaneously.



Release and Waste Management Estimates

Helpful hints for accurate release estimates:

- Always use your best available information.
- Estimate the quantity of Section 313 chemical, not the entire waste stream.
- Differentiate fugitive from stack air emissions.
- Zero air emissions for volatile organic compounds (VOCs) are unlikely.
- Watch out for releases of Section 313 chemicals with qualifiers.
- Check your math and document your work!

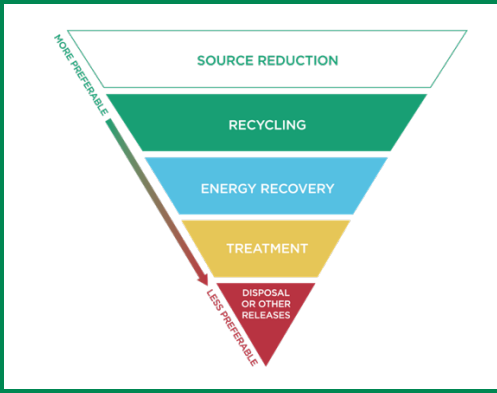
Result of release estimation errors:

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

Source Reduction and Waste Management

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

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



Production-Related Waste Managed (Section 8.1-8.7)

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

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

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

Production-Related Waste Managed (Section 8.1-8.7)

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

Section 8: Relationship to Sections 5 and 6

PART II. SECTION 8.1 – 8.7	
8.1a	**Total on-site disposal to Class I UIC wells, RCRA & other landfills** = 5.4.1 + 5.5.1A + 5.5.1B – 8.8*
8.1b	**Total other on-site disposal or other releases** = 5.1 + 5.2 + 5.3 + 5.4.2 + 5.5.2 + 5.5.3A + 5.5.3B + 5.5.4 – 8.8*
8.1c	**Total off-site disposal to Class I UIC wells, RCRA & other landfills** = 6.1 (P33, P34) + 6.2 (M64, M65, M81) – 8.8*
8.1d	**Total other off-site disposal or other releases** = 6.1 (P30, P31, P32, P35, P36) + 6.2 (M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, M99) – 8.8*
8.3	**Off-site energy recovery** = 6.2 (M56, M92) – 8.8*
8.5	**Off-site recycling** = 6.2 (M20, M24, M26, M28, M93) – 8.8*
8.7	**Off-site treatment** = 6.1 (P37, P38, P39) + 6.2 (M50, M54, M61, M69, M95) – 8.8*

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

Section 8: Relationship to Section 7

PART II. SECTION 8.1 – 8.7	
8.2	**On-site energy recovery** Determine quantity for activities described in 7B. Report quantity actually combusted in energy recovery unit (i.e., consider efficiency).
8.4	**On-site recycling** Determine quantity for activities described in 7C. Report quantity actually recycled (i.e., consider efficiency).
8.6	**On-site treatment** Determine quantity of the chemical for activities on waste stream described in 7A. Report quantity actually destroyed (i.e., consider efficiency). Metals and metal category compounds cannot be reported here.

Non-Production-Related Waste Managed

Enter the quantity of Section 313 chemical released into the environment or transferred off-site (Section 8.8) as a result of:

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

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

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

- TRI-MEweb calculator will subtract any quantities reported as non-production-related waste from 8.1-8.7 quantities.

Production Ratio or Activity Ratio

Production ratio or activity ratio (Section 8.9)

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

Reporting tips

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

A Production Ratio Wizard is now available in TRI-MEweb to help you calculate your Production Ratio or Activity Ratio.

Source Reduction Activities

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

- Include only those source reduction activities implemented for the first time during the reporting year.
  - *Include activities that reduce the total quantity of chemical waste released (including disposal), recycled, combusted for energy recovery, or treated.*
- Examples of Source Reduction Activities:
  - *Process or equipment changes (e.g., replacements, adjustments)*
  - *Product redesign*
  - *Changed production schedule to minimize equipment changeovers*
  - *Green chemistry practices (e.g., Optimized reaction conditions or otherwise increased efficiency of synthesis)*

You may also report the estimated annual reduction associated with each activity using range codes provided.

- Based on expected amount of chemical waste generation once the activity has been implemented as a percentage of the amount that would have been generated otherwise.

Optional Pollution Prevention Information

Report additional information in the open-ended Pollution Prevention Information text field (Section 8.11).

- This optional section provides an opportunity to publicly highlight any steps your facility took to reduce the amount of toxic chemicals entering the environment.
- Information about recycling, energy recovery, and treatment is welcome in addition to details about source reduction activities.
- Facility can provide information on previous years' activities.

Reporting tips

- Be specific.
- Provide useful URLs.
- Note any barriers inhibiting P2 (using checkboxes in TRI-MEweb).
- Put information unrelated to P2 in Section 9.1.

TRI’s P2 website features P2 information reported by facilities and includes a P2 reporting tip-sheet: https://www.epa.gov/toxics-release-inventory-tri-program/pollution-prevention-p2-and-tri

Optional Miscellaneous Information

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

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

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

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

Section VI: Form R Calculation Examples

Fugitive Air Emissions Example: Section 5.1

Example

Using a Mass Balance Basis of Estimate (C):

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

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

Stack Air Emissions Example: Section 5.2

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

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

Wastewater Discharges Example – Section 5.3

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

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

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

Assuming 365 days of discharge and no other sources:

- 4.33 lb/day × 365 day = 1,580 lb total release
- Basis of Estimate Code: M2
- Include receiving stream or waterbody name and Reach Code (optional)
- Indicate NA for contribution from stormwater

POTW Transfers Example – Section 6.1

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

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

Production and Activity Ratio Examples: Section 8.9

Example (Production Ratio): Oven manufacturing

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

Example (Activity Ratio): Tank washouts

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

Additional Production / Activity Variable Examples, by Industry

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

Section VII: Alternate Threshold Rule (Form A)

Form A Eligibility

The TRI Form A Certification Statement is a simplified two-page form eligible for facilities meeting the alternate threshold.

If alternate threshold criteria is met:

- Have the option to file a Form A in lieu of a Form R
- No detailed release, other waste management, or source reduction reporting
- Maintain records and calculations used to determine Form A eligibility

Facilities can submit a combination of Forms R and Forms A. Some chemicals may meet Form A criteria; others may not.

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

Criteria for Submitting Form A

Must NOT be a PBT chemical.

Do not exceed 1,000,000 pounds of the toxic chemical manufactured, processed, or otherwise used alternate threshold.

Do not exceed 500 pounds for the total annual waste management (i.e., releases including disposal, recycling, energy recovery, and treatment) of the Section 313 chemical.

- *Equivalent to the sum of the quantities calculated for Sections 8.1 – 8.7 of the Form R*

Section VIII: TRI-MEweb Introduction

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 withdrawal.
- TRI-MEweb supports new reporting, revisions & withdrawals for RY 1991 – current year.
- TRI-MEweb resources including tutorials are available to help users at: https://www.epa.gov/toxics-release-inventory-tri-program/electronic-submission-tri-reporting-forms.

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-home

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.
  - *Preparers are able to create, prepare, revise and withdraw TRI Forms.*
  - *Certifying officials have these abilities plus are able to certify forms. Certifying officials should be in a senior management role for the facility.*

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

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

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

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 Signature Agreement
  - *The TRIFID Signature Agreement authorizes the certifying official to certify forms for the specific TRI facility.*
  - *Facility profiles must be added to TRI-MEweb before a TRIFID Signature Agreement Form can be signed.*
  - *Certifying officials must have a digitally signed TRIFID Signature Agreement for each facility profile before access to any pending submission(s) for certification is granted.*

New certifying officials must obtain approval of an ESA and digitally sign a TRIFID Signature Agreement(s) for each facility profile(s) before pending submissions can be reviewed and certified.

Optional Facility-Level Information

Facilities may provide optional information on facility operations.

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

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

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

Optional Facility-Level Information

Topics on which you may elect to provide information include:

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

Benefits of providing this information include:

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

For More Information and Assistance

For more information on TRI requirements see the second part of this training course on TRI Advanced Concepts.

For TRI reporting guidance, information and tutorials on the TRI-MEweb reporting software, and the latest changes to the TRI Program please visit: https://www.epa.gov/tri.

Industry-specific and chemical-specific guidance can be found at: https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:gd-list.

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

End of Module

Quiz Answers

Quiz #1: Question 1

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

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

Select Yes or No

Answer: Yes

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

Quiz #1: Question 2

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

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

Select Yes or No

Answer: No

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

Quiz #1: Question 3

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

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

Select Yes or No

Answer: Yes

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

Quiz #2: Question 1

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

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

Select your choice

Answer: A is correct

27,000 total lb of benzene is processed. Always apply the total amount that enters a process toward the activity threshold. The quantity of benzene processed exceeds the 25,000 lb processing threshold for non-PBT chemicals, therefore, the facility would need to complete a TRI form for benzene. The quantity released to the environment would be reported on the TRI Form R.

Quiz #2: Question 2

If a facility processes 20,000 lb of methylene diphenyl diisocyanate (MDI) in one operation and 10,000 lb of isophorone diisocyanate in another operation during the reporting year, what should it apply towards it's processing threshold for the diisocyanates category?

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

Select your choice

Answer: C is correct

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

Quiz #2: Question 3

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

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

Select your choice

Answer: B is correct

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