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Toxics Release Inventory: The Basics of Reporting

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This session will cover:

- The basics of TRI Reporting
- Best Practices – Lessons Learned for TRI Reporting
- Legal Perspectives

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Toxics Release Inventory

The Basics of Reporting

Presented by Parker Emahiser
Date

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What is the TRI?

- The Toxic Release Inventory (TRI)
  - Database of TRI-listed chemical releases and pollution prevention activities
  - Chemicals are identified in the EPCRA 313 list of chemicals
    - Individual chemicals
    - Chemical categories
    - PFAS chemicals
  - TRI data is open to the public

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Who Reports for TRI?

- Must assess reporting based on:
  - North American Industry Classification Code System (NAICS Code)
    - e.g. 311513 cheese manufacturing, 312130 wineries, 327310 cement manufacturing, etc.
  - The number of full-time employees or hours worked
    - 10 full time employees or 20,000 hours worked by employees
  - Manufacture, process, or otherwise use an EPCRA Section 313 chemical (TRI-listed Chemical)

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Activity Determination

- Manufacture = We produce, prepare, import, or compound a TRI-listed chemical. Coincidental manufacturing (byproducts and impurities).
  - Example: We make zinc ingots
- Process = We prepared a TRI-listed chemical after it was manufactured.
  - Example: We dip iron into molten zinc as a protective coating
- Otherwise Use = Any use of a TRI-listed chemical not related to manufacturing or processing.
  - We need to use a hydrochloric acid solution to clean our equipment between batches.

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Threshold Determination

- Manufacture
  - 25,000 lbs
- Process
  - 25,000 lbs
- Otherwise Use
  - 10,000 lbs

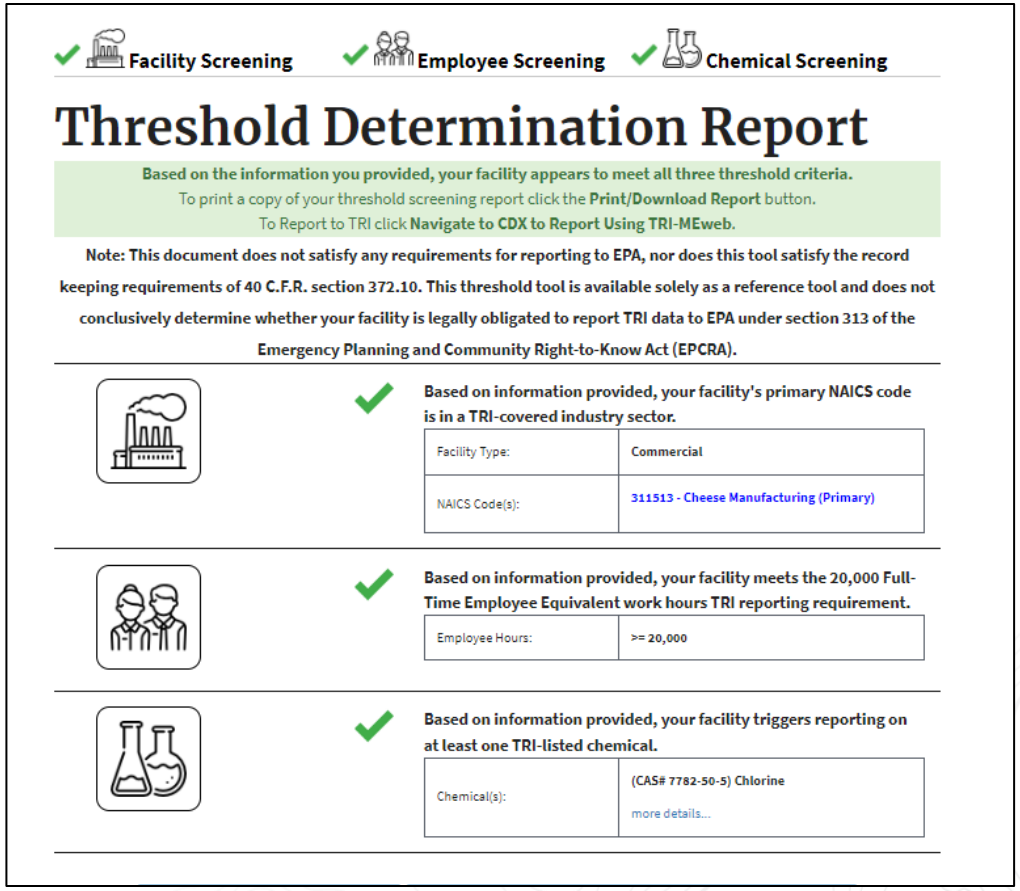
Notes:

- Chemicals of special concern have lower thresholds identified in the table.
- PFAS have a threshold of 100 lbs (189 listed).

Chemical or chemical category name	CASRN or chemical category code	Threshold (lb, unless noted otherwise)
Aldrin	309-00-2	100
Benzo[g,h,i]perylene	191-24-2	10
Chlordane	57-74-9	10
Dioxin and dioxin-like compounds category (manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds category if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical)	N150	0.1 grams
Heptachlor	76-44-8	10
Hexabromocyclododecane category	N270	100
Hexachlorobenzene	118-74-1	10
1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta[g]-2-benzopyran	1222-05-5	100
Isodrin	465-73-6	10
Lead (this lower threshold does not apply to lead when it is contained in stainless steel, brass or bronze alloy)	7439-92-1	100
Lead compounds category	N420	100
Mercury	7439-97-6	10
Mercury compounds category	N458	10
Methoxychlor	72-43-5	100
Octachlorostyrene	29082-74-4	10
Pendimethalin	40487-42-1	100
Pentachlorobenzene	608-93-5	10
Polychlorinated biphenyls	1336-36-3	10
Polycyclic aromatic compounds category (PACs)	N590	100
Tetrabromobisphenol A	79-94-7	100
Toxaphene	8001-35-2	10
Trifluralin	1582-09-8	100

Example

- EPA has a screening tool.
- Useful for NACIS and Employee hours
- Not always helpful for threshold determinations. Requires calculations and knowledge of process.



✔ Facility Screening ✔ Employee Screening ✔ Chemical Screening

Threshold Determination Report

Based on the information you provided, your facility appears to meet all three threshold criteria.
To print a copy of your threshold screening report click the **Print/Download Report** button.
To Report to TRI click **Navigate to CDX to Report Using TRI-MEweb.**

Note: This document does not satisfy any requirements for reporting to EPA, nor does this tool satisfy the record keeping requirements of 40 C.F.R. section 372.10. This threshold tool is available solely as a reference tool and does not conclusively determine whether your facility is legally obligated to report TRI data to EPA under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA).

✔ **Based on information provided, your facility's primary NAICS code is in a TRI-covered industry sector.**

Facility Type:	Commercial
NAICS Code(s):	311513 - Cheese Manufacturing (Primary)

✔ **Based on information provided, your facility meets the 20,000 Full-Time Employee Equivalent work hours TRI reporting requirement.**

Employee Hours:	>= 20,000

✔ **Based on information provided, your facility triggers reporting on at least one TRI-listed chemical.**

Chemical(s):	(CAS# 7782-50-5) Chlorine more details...

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Calculations and Documantation

- Takes time and data gathering.
- Calculates chemical usage and releases.
- Documents determinations and assumptions.
- Must use best available information.
- Should reflect the information in the Form A or R.

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Form R or Form A?

One form for each TRI-listed chemical or chemical category

Form A

- Chemical is not a PBT
- You do not exceed 1,000,000 lbs of a listed chemical
- Total annual amount release reportable is less than 500 lbs

Form R

- PBT chemicals
- Manufacture, process, or otherwise use listed chemical above threshold.
- Total annual reportable release amount is more than 500 lbs.

Use of the Form A is rare.

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Form A

Form A Required Information

- Location of facilities
- Demonstration that the chemicals are meeting the manufacturing, processing, or otherwise used thresholds
- Certification that the reportable amounts of chemicals is less than 500lbs

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Form R

Form R Required Information

- Location of facilities
- Demonstration that the chemicals are meeting the manufacturing, processing, or otherwise used thresholds
- Accounting for on-site releases
- Accounting for off-site transfer of wastes
- Description of on-site waste treatment, energy recovery, and recycling
- Other disposal, source reduction, and recycling activities
- Additional optional pollution prevention information

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Form R

Time consuming to gather data and calculate:

- Accounting for on-site releases
  - Air emissions
  - Discharges to receiving waters and UICs
  - On-site disposal (i.e. landfills)
  - Land treatment/application
- Accounting for off-site transfer of wastes
  - Discharges to POTWs
  - Waste disposal

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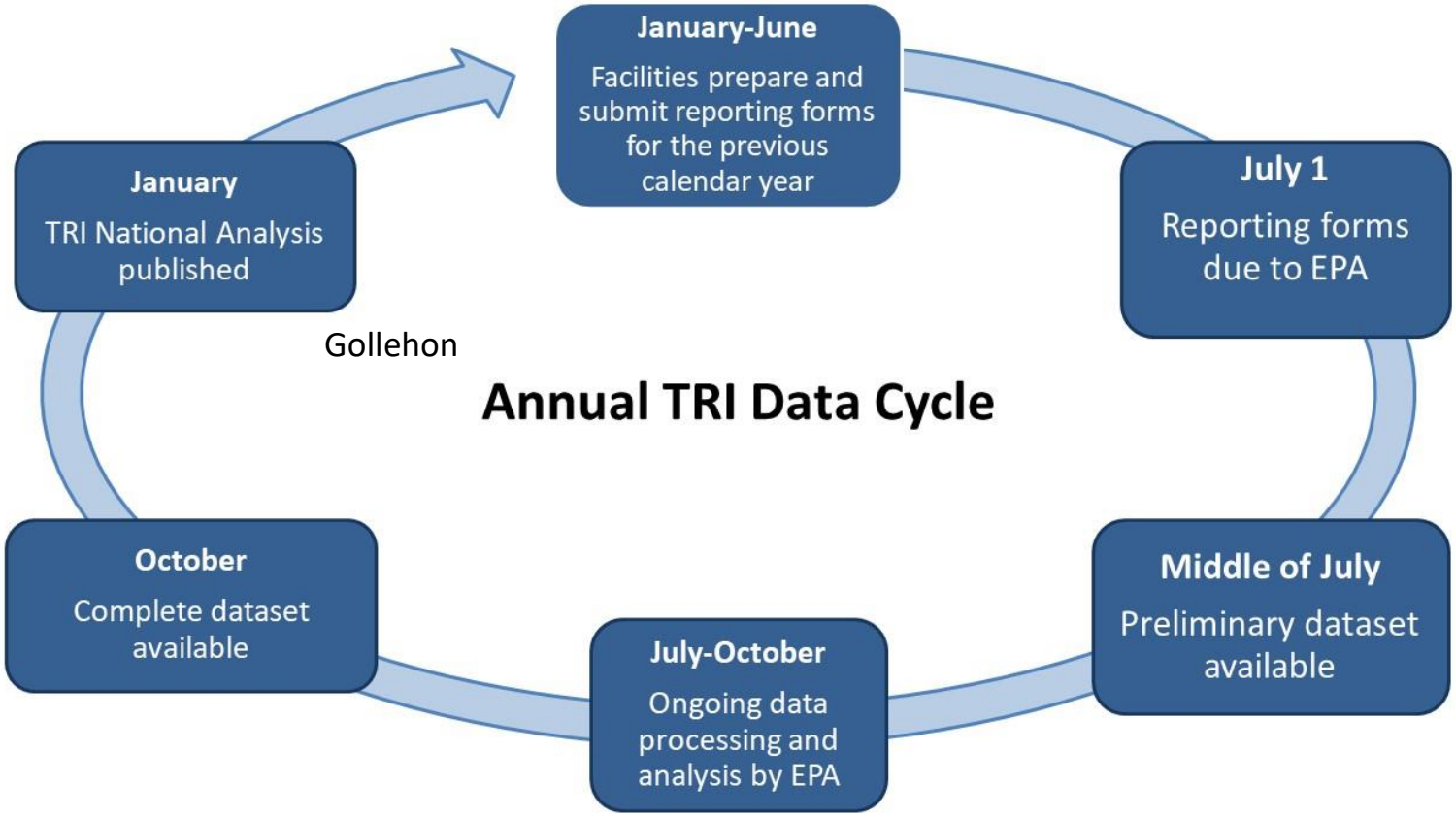
Submittal

- Central Data Exchange
  - Clunky system
  - Helpdesk can support log-in issues (888) 890-1995
  - TRIMe Web application used to fill Forms
  - New login requirements. Check account early.

- Due Date
  - Due annually on July 1
  - Previous operating years report
  - We will submit Form Rs for 2024 reporting year no later than July 1, 2025.

EPA's Annual Reporting Timeline



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Best Practices and Lessons Learned for TRI Reporting

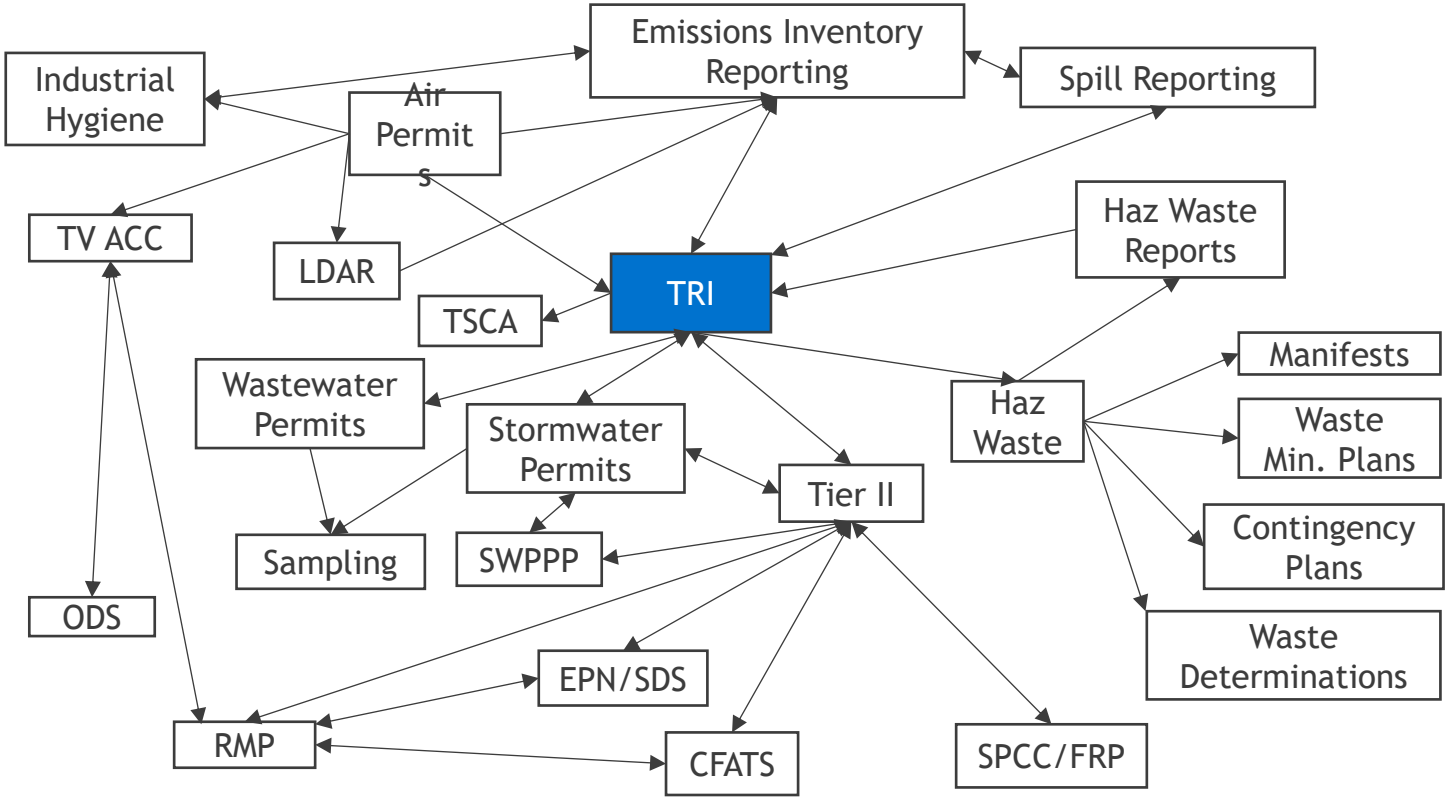
December 11, 2024

Jesse Gonzalez – Manager of Consulting Services

Trinity Consultants

Celebrating 50 1974 2024 Years

TRI – "Ultimate" Report



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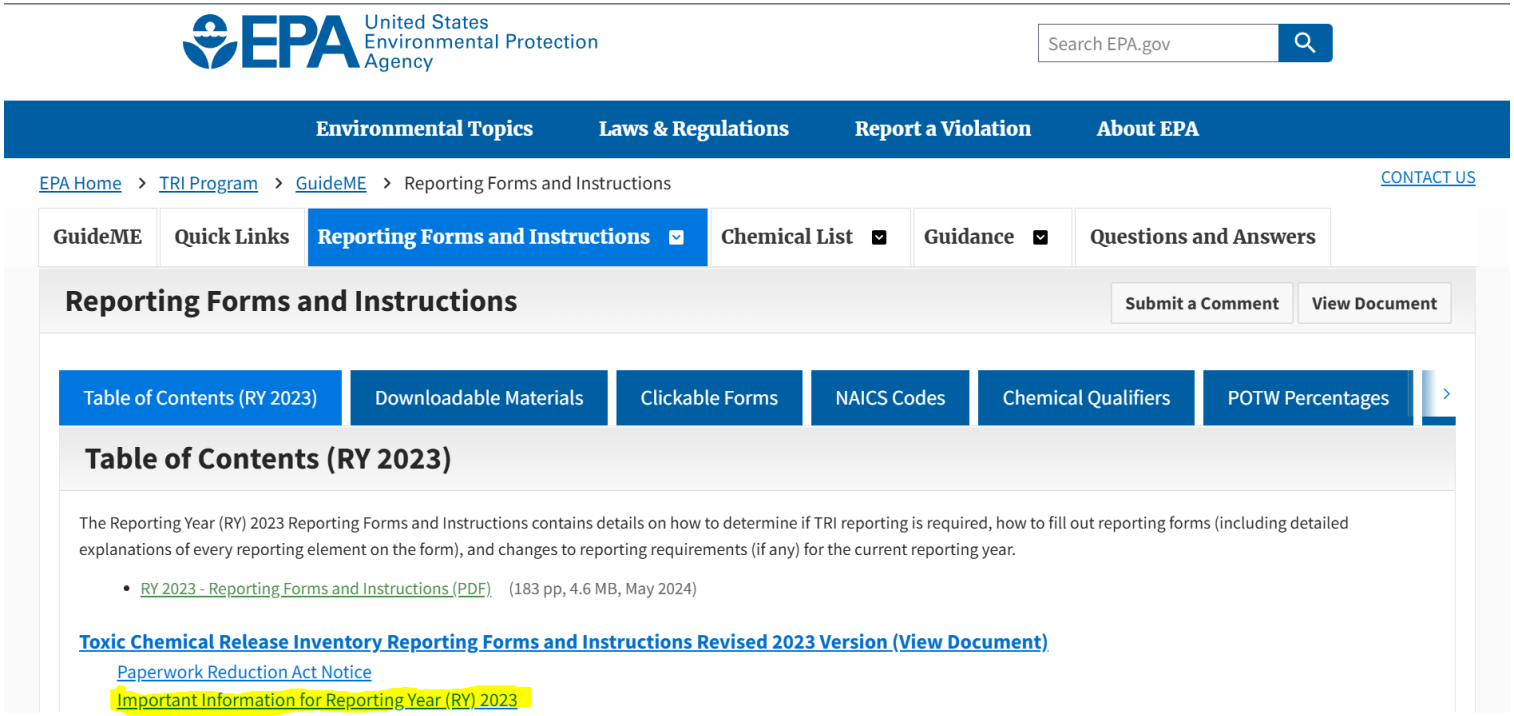
Annual Instructions



Addition of 7 PFAS Chemicals – RY2024

- Beginning RY2024, EPA is adding an additional seven PFAS chemicals to the TRI list:
  - Perfluorohexanoic acid (PFHxA); 307-24-4
  - Perfluoropropanoic acid (PFPrA); 422-64-0
  - Sodium perfluorohexanoate; 2923-26-4
  - Ammonium perfluorohexanoate; 21615-47-4
  - 1,1,1-Trifluoro-N-[(trifluoromethyl)sulfonyl] methanesulfonamide (TFSI); 82113-65-3
  - Lithium bis[(trifluoromethyl)sulfonyl] azanide; 90076-65-5
  - Betaines, dimethyl(γ-ω-perfluoro-γ-hydro-C8-18-alkyl); 2816091-53-7

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Employee Threshold

- 10 or more full-time employee equivalents (i.e., 20,000 hours) (40 CFR §372.3 and 372.22(a))
  - Worked for the facility
  - Includes operational staff, administrative staff, contractors, dedicated sales staff, company drivers, off-site direct corporate support
  - Does **NOT** include contract drivers or contractors performing intermittent service functions such as janitorial services (1998 Q&A #21, #29 and #38)
  - Add **all** hours from part-time **and** full-time employees
- Determinations based on available time management systems/data

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Threshold Determination – SDS Review

- Reminder – Review SDS annually for updates!
  - Confirm
    - Density
    - Chemical constituent breakdown
    - Chemical constituent percentages
  - Event the slightest difference in any of these between two SDS can be a finable offense!

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SDS Review - Section 15 of SDS

SECTION 15. REGULATORY INFORMATION

TSCA	:	On the inventory, or in compliance with the inventory
Other regulations	:	Active Ingredient in this composition is POTASSIUM PEROXYMONOSULFATE, CAS. No. 10058-23-8, Concentration: 43-47% (Typical 45%) Active ingredient may also be described by the synonym POTASSIUM MONOPERSULFATE.
SARA 313 Regulated Chemical(s)	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	styrene	100-42-5	<= 40.0
Supplier notification	styrene	100-42-5	39.79

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.
Any concentration shown as exact is based on formula.

Section 15: REGULATORY INFORMATION

UNITED STATES

HCS Classification: Toxic Material, Irritating materi

U.S. Federal Regulations: All ingredients comply with applicable rules or orders under US TSCA.
All components are listed or exempted.
TSCA 6 proposed risk management: LEAD.
TSCA 8(b) inventory: LEAD
TSCA 12(b) annual export notification: LEAD

SARA 313	Substance Name
Form R - Reporting Requirements:	Lead
Supplier Notification:	Lead

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Mixtures and Calculating Threshold Quantities

- Individually listed chemicals are separately reported
- % by wt. Chemical x weight of mixture
- Guidelines for reporting SDS Ranges:

Upper bound concentration (<35%)	→	Use upper concentration (35%)
Concentration Range (5-10%)	→	Use midpoint of range (7.5%)
Concentration Range (0-10%)	→	Use upper concentration
Lower bound conc. (>80%)	→	Two ways:

1. Subtract percentages of other known constituents to determine upper bound, then use midpoint (80-100%)
2. Calculate midpoint assuming upper concentration of 100% (90%)

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Example TRI Chemicals with Qualifiers

Chemical/ Chemical Category	CASRN/ Category Code	Qualifier
Aluminum (fume or dust)	7429-90-5	**Only** if it is a fume or dust form.
Aluminum oxide (fibrous forms)	1344-28-1	**Only** if it is a fibrous form.
Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing)	7664-41-7	**Only** 10% of aqueous forms. 100% of anhydrous forms.
Asbestos (friable)	1332-21-4	**Only** if it is a friable form.
Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	7647-01-0	**Only** if it is an aerosol form as defined.
Nitrate compounds (water dissociable; reportable only when in aqueous solution)	N511	**Only** if in aqueous solution
Phosphorus (yellow or white)	12185-10-3	**Only** if it is a yellow or white form.
Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	7664-93-9	**Only** if it is an aerosol form as defined.
Vanadium (except when contained in an alloy)	7440-62-2	**Except** if it is contained in an alloy.
Zinc (fume or dust)	7440-66-6	**Only** if it is in a fume or dust form.

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Metal Compound Categories

- Separate activity threshold determinations:
  Elemental Metal vs. Metal Compound
- Metal Compound Threshold Determination:
  - Consider the **total weight** of metal compound (PbO)
- Release/Waste Management Calculations (Form R):
  - Report only the **weight of the elemental metal portion** of the metal compound (Pb)
- Report for each listing (e.g., nickel or nickel compound) only if the threshold for each listing is exceeded
  - If threshold exceeded for both the elemental metal and metal category compound (e.g., nickel or nickel compound), you have options to report separately or file one combined report

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Zero vs. NA for Releases

- 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)
- Use “0” when <0.5 pound of a non-PBT Section 313 chemical is directed towards that medium
- Use “0” when leaks, spills or fugitive emissions can occur (even if they did not), e.g., volatile organic compounds (VOCs)
- Examples:
  - If a facility uses nitric acid and the wastes are neutralized to a pH of 6 or above, then the facility reports a release of zero, not NA.
  - The facility does not landfill the acidic waste, use NA.
  - A facility has no underground injection well, use NA.

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Maximum On-Site

- Select appropriate code indicating the maximum quantity on-site during the reporting year (Section 4)
- Use maximum total (non-exempt) amount present at one time during reporting year
  - Based on amount in storage, in process, and in wastes
  - Maximum amount on site may differ from the Tier II reported maximum amount on site
    - Tier II is usually by mixtures, Form R is chemical-specific
    - Tier II excludes hazardous wastes, Form R does not

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Air Emissions

- Form R Section 5.1 and 5.2
- Fugitives - Cannot reasonably pass through a stack vent
  - Equipment leaks
  - Evaporative losses
  - Spills that include volatile TRI chemicals
- Stack Emissions
  - Stacks, vents, ducts, pipes
  - Including storage tanks
- **Should generally agree with emissions inventory report**
  - HAP emissions should match the TRI except as documented
  - Include emissions from insignificant sources
  - Use mid-point of SDS ranges versus maximum

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Discharge to Surface Waters (On-Site)

- Form R Section 5.3
- Examples:
  - Process outfalls
  - On-site WWTPs
  - Discharge to POTW
  - Storm Water Runoff
- Enter name of water body that receives direct discharge (should match permit)
  - TRI-MEweb now has a mapping tool to assist facilities in selecting the correct water body

Stormwater Runoff

- Use monitoring data
- Estimate flow using Rational Method

Q = Land Area * Runoff Coefficient * Rainfall Intensity

Where:

Runoff coefficient related to land use (fraction that does not seep into ground)
[Obtain from TRI Guidance or Engineering Manual]

Rainfall intensity specific to geographic location
Assume 1 ft snow = 1 in. rain
[Obtain from internet for previous year, e.g., NWS]

Description of Land Area	Runoff Coefficient
Business	
Downtown areas	0.70-0.95
Neighborhood areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Industrial	
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30
Streets	
Asphaltic	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.70-0.85
Roofs	0.75-0.95
Lawns: Sandy Soil	
Flat, 2%	0.05-0.10
Average, 2% - 7%	0.10-0.15
Steep, 7%	0.15-0.20
Lawns: Heavy Soil	
Flat, 2%	0.13-0.17
Average, 2% - 7%	0.18-0.22
Steep, 7%	0.25-0.35

Calculating Wastewater Discharges

- Calculate the yearly pounds of a TRI chemical discharged using the following data concerning wastewater discharges:

Date	Conc. (mg/l)	Flow (MGD)	Amt. (lbs/day)
3/1	1.0	1.0	8.34
9/8	0.2	0.2	0.33
Average	*0.6*	*0.6*	*4.34*

- EPA way: Average = **4.34 lbs/day = 1600 lbs/yr**
- Incorrect approach: 0.6 mg/L x 0.6 MGD x 8.34 lbs/million gallons / 1 mg/L = 3.00 lbs/day (1,100 lbs/yr)

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Legal Perspectives

- Rule Making
- EPA Information Requests
- Enforcement
- Voluntary Disclosure

FINAL RULE: CHANGES TO REPORTING REQUIREMENTS FOR PFAS AND TO SUPPLIER NOTIFICATIONS FOR CHEMICALS OF SPECIAL CONCERN, 88 FED. REG. 74360 (OCT. 31, 2023)

- TRI reporting rule, effective on 11/30/23
- PFAS added to the list of Lower Thresholds for Chemicals of Special Concern
  - Eliminates the de minimis reporting exemption
    - All quantities of listed PFAS, no matter how low the concentration, needs to be included in threshold calculation and release determinations.
  - Eliminates the Form A reporting option
  - Limits the use of range reporting
- Eliminates de minimis supplier notification requirements exemption for all chemicals of special concern
- Applies for reporting year beginning 1/1/24, reports due by 7/1/25

PROPOSED RULE: ADDITION OF CERTAIN PFAS TO LIST OF TRI CHEMICALS, 89 FED. REG. 81776 (OCT. 8, 2024)

- EPA proposing to add 16 individual PFAS and 15 PFAS categories representing over 100 individual PFAS
- Designated as chemicals of special concern
- Sets a reporting threshold of 100 pounds for the manufacture, processing and otherwise use
- Proposes to reclassify some individual-listed PFAS added to TRI under the 2020 National Defense Authorization Act as part of the proposed PFAS categories
- Addresses what events may trigger the automatic addition of PFAS to the TRI list pursuant to the framework established by the NDAA
- Comment period expired on December 9, 2024

Information Requests

- Often very broad & requires information in unique formats. For example:

7. A list of all TRI-listed chemicals that are manufactured (either directly or coincidentally), processed, or otherwise used at the Facility during each calendar year. (Information on TRI-listed chemicals can be found at EPA's TRI homepage at http://www.epa.gov/tri).

8. Copies of Safety Data Sheets (SDSs) for all raw materials and products utilized at the Facility that contain a TRI-listed chemical. Please organize the SDSs by the calendar year that it was utilized by the Facility, either by including the calendar year in the file name or on the document.

9. Data tables or spreadsheets of TRI-listed chemical usage. The Facility can utilize a table similar to the one shown below. Two **sample** rows of data are shown:

Product or Trade Name	EPCRA § 313 Chemical Name & CAS #	Weight Percent of EPCRA § 313 Chemical in Product	Product "Manufactured, Processed, or Otherwise Used"	Pounds of Product Used	Pounds of EPCRA § 313 Chemical Used
Blue Paint	Toluene - CAS: 108-88-3	12%	Otherwise Used	9,850	1,182
Stainless Steel A-240	Nickel - CAS: 7440-02-0	9%	Processed	55,000	4,950

- Short response timeline

Information Requests: Response Strategy

- Negotiate upfront:
  - Additional time
  - Rolling production if multiple facilities
  - Narrow the response
- Get in front of potential issues
- Engage 3rd party consultants under privilege

ENFORCEMENT PROCESS

- Notice of intent to file administrative complaint
- Settlement discussion
  - Adjust up for prior violations
  - Adjust down for cooperation
- If settlement
  - Consent Agreement
  - Final Order
- If no settlement
  - Administrative complaint and hearing or
  - Referral to DOJ for civil complaint

EPA TRI ENFORCEMENT PROCESS: PENALTIES

- 2024 inflation adjusted statutory maximum civil penalties for reporting violations:
  - $69,733 for violations after 11/2/15

- No specific criminal sanctions but prosecution under 18 USC 1001 a possibility if knowing and willingly make a false statement or conceal a material fact

EPA TRI ENFORCEMENT PROCESS: PENALTIES CONT'D

- EPA's generally assesses penalties under the EPCRA 313 Enforcement Response Policy
- Penalties are assessed per TRI chemical, per facility, per reporting year (typically assessed as a single vs. continuing per day violation)
- Penalties are assessed based on a matrix that considers the "circumstance" (type of violation) and "extent" (size of the company and amount of chemical manufactured, processed or otherwise used in comparison to the threshold)

POTENTIAL CIVIL PENALTIES (TRI VIOLATIONS)

- Base penalty determined based on "Extent and Circumstance Level"
  - "Extent" factors in size of violator (corporate entity sales) and whether the facility manufactured, processed or otherwise used ≥ 10x or more of the TRI chemical involved in the violation
  - Different violations assessed different "Circumstance Levels" based on seriousness of violation
- Penalties assessed for each violation per chemical per year
- No specific criminal sanctions but prosecution under 18 USC 1001 a possibility if knowing and willingly make a false statement or conceal a material fact

Violation	≥ 10x Threshold	< 10x Threshold
Failure to report in a timely manner	$52,753	$35,872
Significant data quality error	$42,202	$27,431
Data quality error	$31,651	$21,102

EPA TRI ENFORCEMENT PROCESS: PENALTIES CONT'D

Adjustments under EPA Enforcement Response Policy:

- Upward: for prior violations (can significantly increase penalty)
- Downward: up to 15% each for cooperation and compliance

EPA TRI ENFORCEMENT PROCESS: STRATEGY

- Typical strategy = push for quick settlement via Consent Agreement & Final Order
  - Maximize potential for 30% downward adjustment
  - Limit allegations
  - Minimize transaction costs

ENFORCEMENT AVOIDANCE STRATEGY: AUDIT POLICY

- Audit Policy:
  - Incentives for Self Policing: Discovery, Disclosure, Correction and Prevention of Violations, 65 FR 19,617 (April 11, 2000), Effective May 11, 2000
  - Implemented through EPA's eDisclosure portal
- Purpose: To encourage regulated entities to voluntarily discover, disclose correct and prevent violations of federal environmental requirements

ENFORCEMENT AVOIDANCE STRATEGY: AUDIT POLICY CONT'D

Applied to EPCRA TRI Violations: Process resolves with automatic issuance of a determination from EPA providing:

- 100% gravity penalty mitigation
- No payment of economic benefit
- No request for audit reports
- No referral for further enforcement or criminal prosecution

ENFORCEMENT AVOIDANCE STRATEGY: AUDIT POLICY CONT'D

1. Systematic discovery (audit typically for TRI)
2. Voluntary (can't be in response to info. request)
3. Promptly disclosed (within 21 days of discovery)
4. Independent discovery (before EPA likely would have discovered)
5. Correction (within 60 days of discovery)
6. Prevent recurrence
7. Repeats ineligible (3 years at facility; 5 years if pattern across company)
8. No serious harm
9. Cooperation

Questions?