



# Toxics Release Inventory Violations and EPA Findings

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# Toxics Release Inventory Violations and EPA Findings

- Brief review of the Emergency Planning and Community Right to Know Act and Toxics Release Inventory.
- Review of Penalty Policy.
- Discussion of TRI Reporting for Ethanol Facilities.

# Union Carbide – Bhopal, India


- ▶ December 2, 1984
- ▶ One of the world's worst industrial catastrophes
- ▶ Massive release of methyl isocyanate gas from Union Carbide pesticide plant
- ▶ Killed 3,800 and injured tens of thousands



# Union Carbide – Institute, West Virginia

- August 11, 1985
- Cloud of methylene chloride and aldicarb oxime released (used in pesticide manufacture)
- Six workers injured; > 100 residents hospitalized
- Facility spent \$5M to improve safety systems; two more leaks occurred in February 1990





# Emergency Planning and Community Right to Know Act Created 1986

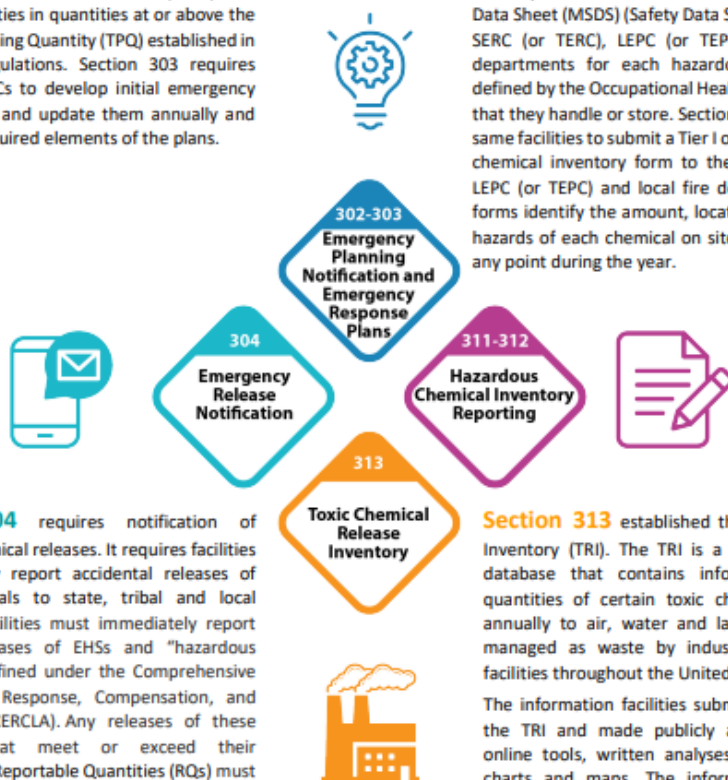
## Goals:

- Tailor a chemical emergency program to community needs
- Provide public with “right-to-know” attitude and information
- Included
  - Formation of emergency planning framework
  - Facilities report
    - Inventories (Tier II)
    - Releases that are occurring (accidental and routine)

The goal of the 1986 [Emergency Planning and Community Right-to-Know Act \(EPCRA\)](#) is to prepare communities for and protect communities from chemical accidents. To ensure these goals are achieved, Section 301 of EPCRA required the creation of State Emergency Response Commissions (SERCs), Tribal Emergency Response Commissions (TERCs), Tribal Emergency Planning Committees (TEPCs), and Local Emergency Planning Committees (LEPCs). These groups share responsibility for developing and implementing emergency response plans and providing residents with information on the presence and releases of hazardous chemicals reported by facilities in each community. EPCRA has four major focus areas:

**Sections 302 to 303** focus on emergency planning. Section 302 requires notification when Extremely Hazardous Substances (EHSs) are present at facilities in quantities at or above the Threshold Planning Quantity (TPQ) established in the EPCRA regulations. Section 303 requires LEPCs and TEPCs to develop initial emergency response plans and update them annually and outlines the required elements of the plans.

**Sections 311 and 312** focus on hazardous chemical storage reporting requirements. Section 311 requires facilities to submit a Material Safety Data Sheet (MSDS) (Safety Data Sheet (SDS)) to the SERC (or TERC), LEPC (or TEPC) and local fire departments for each hazardous chemical (as defined by the Occupational Health and Safety Act) that they handle or store. Section 312 requires the same facilities to submit a Tier I or Tier II hazardous chemical inventory form to the SERC (or TERC), LEPC (or TEPC) and local fire department. These forms identify the amount, location and potential hazards of each chemical on site at the facility at any point during the year.



**Section 304** requires notification of accidental chemical releases. It requires facilities to immediately report accidental releases of certain chemicals to state, tribal and local authorities. Facilities must immediately report accidental releases of EHSs and "hazardous substances" defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Any releases of these substances that meet or exceed their corresponding Reportable Quantities (RQs) must be reported to their SERC (or TERC) and LEPC (or TEPC). Facilities are also required to submit a written follow-up report of these releases to these officials.

**Section 313** established the Toxics Release Inventory (TRI). The TRI is a publicly available database that contains information on the quantities of certain toxic chemicals released annually to air, water and land, or otherwise managed as waste by industrial and federal facilities throughout the United States.

The information facilities submit is compiled in the TRI and made publicly available through online tools, written analyses, and interactive charts and maps. The information is always available and always free, and helps support informed decision-making by communities, government agencies, companies, and others.



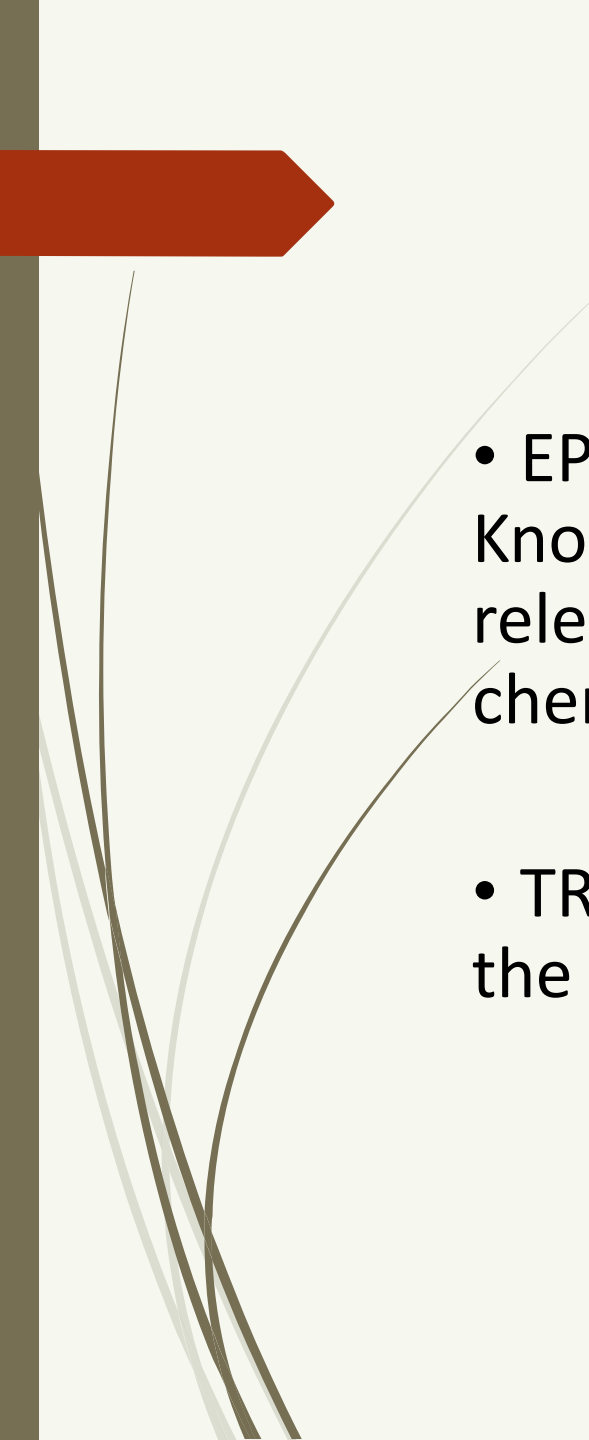
## Toxics Release Inventory

- Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) §313
- Facilities in certain industrial sectors must report toxic chemical releases to air, water, and land and other waste management to EPA and the states each year.
- EPA must maintain the data and make it available to the public.
- Statutory Authority §313

# Purpose of TRI Information (42 USC 11023(h))

- To inform the public about releases of toxic chemicals to the environment;
- To assist governmental agencies, researchers, and other persons in the conduct of research and data gathering;
- to aid in the development of appropriate regulations, guidelines, and standards;
- TRI includes data from more than 21,000 facilities and covers 775 chemicals and 33 chemical categories.



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- EPCRA § 313 (Emergency Planning & Community Right-to-Know Act) is the law that allows EPA to collect amounts released and waste managed over a year's time for each TRI chemical exceeding the reporting threshold.
  - TRI (Toxics Release Inventory), Is the database that houses the information collected pursuant to the law.

# What facilities must report to TRI?



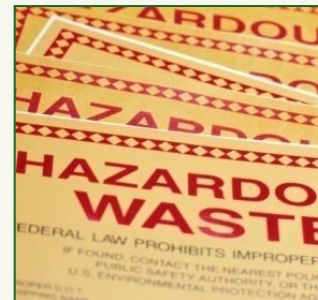
Manufacturing



Certain Mining  
Facilities



Coal/Oil  
Electricity  
Generation



Hazardous Waste  
Management




Federal  
Facilities

- ▶ Facility must be in a TRI-covered industry sector or category (SIC Codes 20 through 39). And,
- ▶ Have the equivalent of at least 10 full-time employees. And,
- ▶ Manufacture, process, or use more than certain amount of listed toxic chemicals per year at greater than threshold quantities.



## Which facilities must report to TRI?

- Consolidated List of Lists (<https://www.epa.gov/epcra/consolidated-list-lists>).
- Including chemicals common to the ethanol industry: Ammonia, acetaldehyde, acrolein, benzene, formaldehyde, n-hexane.

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- **Manufactured:** Manufacturing means producing, preparing, importing, or compounding an EPCRA Section 313 chemical.
  - **Processed:** Processing means preparing an EPCRA Section 313 chemical, or a mixture or other trade name product containing an EPCRA Section 313 chemical for distribution in commerce (usually thought of as the intentional incorporation of an EPCRA Section 313 chemical into a product).
  - **Otherwise use:** any use of an EPCRA Section 313 chemical that does not fall under the definitions of "manufacture" or "process." Chemicals otherwise used are not incorporated into a product that is distributed into commerce and includes such uses as a processing or manufacturing aid and for such ancillary uses as treating wastes.




## Threshold Quantities for TRI Reporting:

- Manufactured and Processed: 25,000 pounds/year.
- Otherwise used: 10,000 pounds/year

Lower thresholds for chemicals of special concern:

- Lead, PFAS/PFOS, C<sub>2</sub>H<sub>4</sub>O, Mercury, Polychlorinated biphenyls.



10 Full-time employees (20,000 employee hours/year).

Includes:

- Employee time spent at or for a covered facility
- Individuals hired as contractors
- Janitors, accountants, delivery drivers, office assistants
- Sick leave and vacation hours used count towards employee hours



Penalty Policy:

Enforcement Response Policy for Section 313 of the Emergency Planning and Right-to-Know Act (1986) and Section 6607 of the Pollution Prevention Act (1990) [Amended].

<https://www.epa.gov/sites/default/files/2017-03/documents/epcra313erpamendments2017.pdf>

# Administrative Complaints:

- Failure to Report in a Timely Manner
  - Reports due July 1.
  - Late report or did not report at all.
  - Per day formula applies reports submitted <1 year late.
  - National Analysis
- Data Quality Errors.
- Failure to Respond to a Notice of Non-Compliance.
- Repeat Violations.
- Failure to Maintain Records.



## Factors Affecting Gravity of Violation:

Circumstance: Seriousness of violation (Failure to Report, failure to maintain records).

Extent: Size of Facility, Threshold.

Large Facility, >10 M, >50 Employees

- 2022 Large Facility, Failure to Report, >10X Threshold is \$47,423.
- Penalties are assessed per chemical per year.
- Voluntary Disclosure. When voluntary disclosure is applicable.



## Common TRI Reporting for Ethanol Facilities:

- Ammonia
  - Distillation Chemicals
  - Denaturant
- 



## Ammonia

- Distillation
- Boiler
- Other onsite uses

### List of Lists:

- Ammonia
- Ammonia (anhydrous)
- Ammonia (conc. 20% or greater)
- 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).
- CAS 7664-417

# Guidance for Reporting Anhydrous Ammonia:

If a facility manufactures, processes, or otherwise uses anhydrous ammonia, the quantity applied towards threshold determinations for the ammonia listing is the total quantity of the anhydrous ammonia manufactured, processed, or otherwise used.

The quantity reported when calculating the amount of ammonia that is released, transferred, or otherwise managed is the total quantity of anhydrous ammonia released or transferred.



# Guidance for Reporting Aqueous Ammonia:

If a facility manufactures, processes, or otherwise uses aqueous ammonia, the quantity applied toward threshold determinations for the ammonia listing is 10 percent of the total quantity of the aqueous ammonia manufactured, processed, or otherwise used.


If a facility dissolves a water dissociable ammonium salt in water that facility has processed aqueous ammonia and 10 percent of the total aqueous ammonia processed from these salts is to be included in processed threshold determinations under the ammonia listing.



# Example:

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

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

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- Ammonia from Boilers.
  - Other Sources: Waste lagoon.
  - Manufacture, Process, Otherwise use. Facilities must add up all sources when making threshold determination.
  - [TOXICS RELEASE INVENTORY Guidance for Reporting Aqueous Ammonia, revised February 2019.](#)



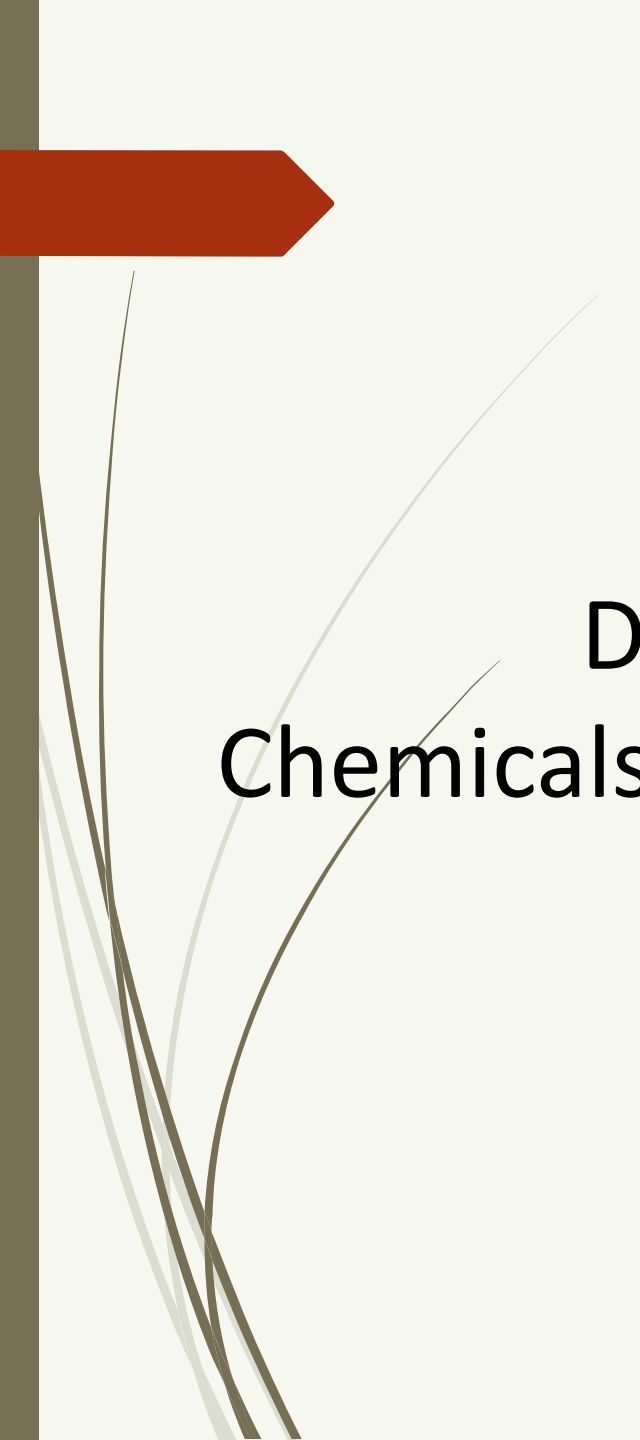
## Reporting Tip Distillation Chemicals:

- Acetaldehyde
- Acrolein
- Formaldehyde
- Formic Acid
- Methanol



## Manufacturing

- Manufacturing means producing, preparing, importing, or compounding an EPCRA Section 313 chemical. While RCRA Subtitle C TSD and solvent recovery facilities may not intend to manufacture an EPCRA Section 313 chemical during its operations, many of the activities could produce chemicals which may need to be considered towards the manufacturing threshold. *You will need to consider if EPCRA Section 313 chemicals are produced coincidentally during any of your operations, which qualifies towards the manufacturing threshold, regardless of whether the chemical only exists for a short period of time, is destroyed by air control equipment, or is captured as the residual materials (such as distillation bottoms or incinerator ash). An example would be the production of ammonia or nitrate compounds in a wastewater treatment system.*



## Distillation Chemicals Sources:

- Emissions: Equipment leaks, Off-gassing from tanks, Scrubber(s), Thermal oxidizer, Boiler, Flare, Load-out operations.
- Testing results, Emission factors.
- Destruction/Capture: Scrubber(s), Thermal oxidizer, Boiler, Flare.
- Testing, Emission factors, Back-calculations (1,000 lbs. emissions 90% efficient control device, 10,000 lbs. removed/destroyed).



## Note:

- 40 CFR §372.38(a):

“De minimis concentrations of a toxic chemical in a mixture. If a toxic chemical is present in a mixture of chemicals ... and the toxic chemical is in a concentration in the mixture which is below 1 percent of the mixture, or 0.1 percent of the mixture in the case of a toxic chemical which is a carcinogen ... a person is not required to consider the quantity of the toxic chemical present in such mixture when determining whether an applicable threshold has been met...”

- Distillation chemicals that remain in product can be considered de minimis.



## Denaturant Sources:

- Hexane
- Xylenes
- Toluene
- Benzene
  
- Quantity used: Safety Data Sheets
  
- Emissions: Equipment leaks, Off-gassing from tanks, Loadout operations.
  
- Testing results, Emission factors.
  
- Destruction: Flare.
  
- Testing results, emission factors.



Some SDS have little information.

Natural gasoline SDS: Pentane, Butane, Natural gasoline.

Natural gasoline contains: Hexane, Xylene, Toluene, Benzene.

De minimis: 1% Non-carcinogens. 0.1% for carcinogens (benzene is a carcinogen).

For chemicals concentrations given in a range, use the midpoint.

Example: Hexane in denaturant. Often given as 1-5%. Use 3%.

# EPA Self-Disclosure Audit Policy

Must meet all 9 conditions of audit policy

- *Systematic discovery* of the violation through environmental audit or due diligence
- *Voluntary discovery*, not legally required.
- *Prompt disclosure* in writing to EPA within 21 days.
- *Independent discovery and disclosure* prior to government investigation or third- party information.
- *Correction and remediation within 60 days.*
- *Prevent recurrence of the violation.*
- *Repeat violations ineligible.* Closely related within 3 years.
- *Certain types of Violations Ineligible.* Imminent and substantial endangerment.
- *Cooperation* by disclosing entity.

In the last 5 years alone, over 2,600 entities have self-disclosed violations at over 7,000 facilities under EPA's Compliance Incentive Policies



# Conclusion:

EPA Considers Section 313 reporting to be very important.

TRI penalties can be high and add up fast.

Guidance available for many chemicals/chemical compounds.

Chemicals produced coincidentally and removed with control equipment or captured as residual materials must be included in manufacturing threshold calculations.

Make sure all chemical sources are identified when making threshold determinations.

### ISSUES REGARDING:

- Status of TRI-MEweb Signature Agreements
- Verification of TRI receipts

Contact: TRI Data Processing Center  
9:00 a.m. to 4:00 p.m. (ET)

- (703) 227-7644
- Fax: (703) 227-4199
- E-mail your question, [tridpc@epacdx.net](mailto:tridpc@epacdx.net)

### ISSUES REGARDING:

- Clarification of TRI regulations, reporting requirements, and guidance
- Guidance on completing TRI forms

Contact: GuideME

TRI Information Center

- (800) 424-9346 - select option #3 from menu
- (703) 348-5070 - Washington, D.C. metro area
- 10 a.m.-5:00 p.m. (ET)

### ISSUES REGARDING:

- Accessing CDX software applications (i.e., TRI-MEweb)
- CDX account access (registration, password, user ID issues)

Contact:

Central Data Exchange

- (888) 890-1995
- (970) 494-5500





# Questions?

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