



Hazardous Chemical Inventory

What you need to know about hazardous chemical reports

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Fact Sheet

In today's ever-evolving industrial environment, many businesses, from small mechanic shops to large manufacturing plants, deal with hazardous chemicals. With the EPA setting standards to what constitutes hazardous chemicals, each of these industries must take special care when it comes to handling and storage. As a matter of national security, regulations such as EPCRA's Tier II reports and CISA's CFATS ensure accurate recordkeeping, enabling the public to be aware and able to respond to threats of a chemical disaster. The following question-answer fact sheet can serve as a condensed informational guide when navigating the reporting process.

Why do we do it?

The most tragic chemical disaster, the Bhopal Disaster, occurred in 1984, during which 40 tons of Methyl Isocyanate (a hazardous chemical found in the production of pesticides) was released and killed over 5,000 people, injuring over 50,000 more. This event compounded with over 6,900 other industrial chemical accidents, causing industrial companies to come under scrutiny by the general population for mishandling toxic chemicals. The EPA enacted the "Emergency Planning and Community Right to Know Act" to support the community in planning to respond to the emergency of chemical accidents and provide local governments and the public with information about possible chemical hazards. Under this enactment, applicable companies are required to file Tier II reporting.

What is Tier II reporting?

Tier II reporting is the documentation required by the EPA from companies that produce, use, or store certain thresholds of hazardous chemicals at their facilities. This reporting is critical to practicing the safe use of chemicals and ensures that the local fire department, State Emergency Response Commissions (SERC), and Local

Emergency Planning Committees (LEPC) have all the information needed to assess and handle the specifics of a chemical emergency, without wasting crucial time. Tier II documentation is reported annually by March 1st.

How is hazardous defined?

Although there is no comprehensive list when it comes to hazardous chemicals, OSHA labels “hazardous” any chemical that includes an element, compound, or mixture of elements that is a physical hazard or a health hazard. Chemicals that are carcinogens, toxins, reproductive toxins, irritants, corrosive, neurotoxins, hepatotoxins, and chemicals that damage the lungs, skin, eyes, or mucous membranes are all considered to be health hazards. Chemicals that are combustible, explosive, flammable, oxidizers, reactive, unstable, water-reactive, and compressed gases are all considered to be physical hazards.



What are Extremely Hazardous Substances (EHS)?

There are two appendices that extensively list out the materials considered to be Extremely Hazardous Substances (EHS), warranting separate thresholds for reportable quantities. These include compounds that are part of the synthesis of pesticides (Methyl Isocyanate), reagents for rocket fuels (Hydrazine), and compounds found in paint strippers and throat sprays (Phenol.)

When is Tier II reporting required?

EPCRA has set a series of thresholds when it comes to qualifying for Tier II documentation.

- The lesser of either 500 lbs. or the Threshold Planning Quantity (TPQ) of any extremely hazardous substance (EHS.)
- 75,000 gallons (283,900 L) of any grade gasoline sold at a gas station.
100,000 gallons (378,500 L) of diesel sold at a gas station.
- 10,000 lbs. of any hazardous chemical (as deemed by OSHA and requiring an accompanying MSDS.)

Are there any exemptions in reporting?

The following 5 exemptions are listed under EPCRA section 311(e):

1. Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration;
2. Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use;

3. Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public;
4. Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual; and
5. Any substance to the extent it is used in routine agricultural operations or it is a fertilizer held for sale by a retailer to the ultimate customer.¹

What kind of information is on a Tier II report?

Each chemical classified as hazardous is required to have a Tier II report on file which includes detailed information about the chemical or compound in case of an emergency.

The information on file will compile:

- Company Information such as names, addresses, occupants, and EHS contacts.
- Chemical names, compound CAS numbers.
- Any physical or health hazards associated with the chemical.
- The maximum quantity on hand.
- Storage conditions and locations.
- Specific state reporting requirements (vary from state to state.)²

What needs to happen with hazardous chemicals after they have fulfilled their purpose?

Sections 311-312 deal with onsite storage and handling information, but 313 establishes the Toxic Release Inventory (TRI)³ for the release and disposal of toxic chemicals through:

- Recycling
- Energy recovery
- Treatment
- Disposal
- Environmental release

These reports have a more specific criterion when it comes to when to report. If applicable, the chemicals must be reported annually by July and made publicly available online. These reports reflect chemical emissions to air, water, and land, and encompass source reduction and other pollution prevention practices. Section 313 has undergone finer detail amendments regarding what chemicals and industries fall under TRI reporting thresholds since its passing in 1986.

What criteria are listed that determine whether a chemical falls under TRI standards?

Like Tier II, TRI also has a specific set of hazardous chemical reporting criteria. In general, chemicals covered by the TRI are those that cause:

- Cancer or other human health effects.
- Significant adverse acute human health effects.
- Significant adverse environmental effects.

Thresholds reporting also includes Persistent Bioaccumulate Toxic chemicals (PBT.) Although lower in reporting thresholds than most TRI chemicals, PBT chemicals remain in the environment longer, are not readily destroyed, and build up or accumulate in body tissue.

There is a regularly updated list of chemicals that are subject to TRI reporting available on the EPA website.⁴

What industries are required to participate in TRI reporting?

In 1997 the EPA added seven specific industries that are required to follow TRI reporting, allowing for greater accountability of the use, management, and disposition of toxic chemicals in the United States:

1. Metal mining.
2. Coal mining.
3. Electric utilities.
4. Commercial hazardous waste treatment.
5. Chemicals and allied products-wholesale.
6. Petroleum bulk terminals and plant-wholesale.
7. Solvent recovery service.⁵

What type of facilities are required to participate in TRI reporting?

If all the following criteria are met, a facility must submit a TRI reporting form:

- The facility has 10 or more full-time employees.
- The facility's NAICS code is included on the TRI list.
- The facility manufactures, processes, or uses TRI-listed chemicals.
- The facility exceeds any threshold for a chemical or chemical category.⁶

What are the CFATS?

In 2006 the Department of Homeland Security (DHS) established the Chemical Facility Anti-Terrorist Standards (CFATS) program to identify and regulate high-risk chemical facilities. This was necessary to ensure proper security measures are in place that prevent dangerous chemicals from being weaponized. This program is managed by the Cybersecurity and Infrastructure Security Agency (CISA.) Regarding chemicals that

could potentially be weaponized, CISA has a list of over 300 Chemicals of Interest (COI.) As part of national security, if any facility plans to or does possess any of the listed substances at or above the Screening Threshold Quantity (STQ,) they must report it within 60 days of possession.

What are the security issues surrounding chemicals of interest (COI)?

1. **Release:** this concern is regarding toxic, flammable, or explosive chemicals.
2. **Theft or Diversion:** this concern is for chemicals that if stolen or diverted could be converted into weapons using simple chemistry, equipment, or techniques.
3. **Sabotage:** this concern pertains to the creation of dangerous combinations from chemicals that can be mixed with readily available materials.

What does a “Top Screen” involve?

If a facility will have a COI at or above the STQ, they are to submit a “Top Screen” via the Chemical Security Assessment Tool (CSAT.) Using a Risk-based methodology, CISA will review the Top Screens and assign a tiered ranking based on how high-risk a facility is regarding its COI. (Tier 1 is the highest risk). The facility in turn will submit a Security Vulnerability Assessment (SVA) as well as a Site Security Plan (SSP) that meets the Risk-Based Performance Standards (RBPS.) The facility's security plan is tailored to its tier-level risk and unique circumstances. CISA then dispatches a Chemical Security Inspector to perform an authorization inspection for SSP approval. After all these steps have successfully been completed, regular compliance inspections will be done to verify the facility is implementing the agreed-upon security measures.

Are there any exemptions to CFATS reporting?

CFATS has a list of exemptions for facilities that are not required to report, including:

- Facilities regulated by the Maritime Transportation Security Act.
- Public water system facilities.
- Treatment works facilities.
- A facility owned or operated by the Department of Defense or Department of Energy.
- A facility regulated by the Nuclear Regulatory Commission.

How do I access the information I need?

All the information shared in this fact sheet is available to the public. Information sharing among state, local, tribal, and territorial authorities allows stakeholders easy access to important information. To be granted access to the CISA Gateway, a user must be Protected Critical Infrastructure (PCI) Information certified.

Diligent reporting and assessments keep chemical monitoring records as up-to-date as possible, for compliance and national security reasons.

We hope this information will be useful to you in your mission to go above and beyond safety compliance. SafetyStratus celebrates any and all progress in safety, including organizations individually contributing to the overall shift from “as needed” compliance to a more pervasive and proactive “safety as a mindset” culture in the workplace. No matter the enterprise, our aim is to see lives saved and help every employee achieve optimal wellness through education and sharing.

References:

1. Broughton, E. The Bhopal disaster and its aftermath: a review. *Environ Health* 4, 6 (2005). <https://doi.org/10.1186/1476-069X-4-6>
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3. CYBERSECURITY & INFRASTRUCTURE SECURITY AGENCY. (2021, November 24). Chemical Security. CHEMICAL FACILITY ANTI-TERRORISM STANDARDS (CFATS). <https://www.cisa.gov/chemical-facility-anti-terrorism-standards>
4. The United States Environmental Protection Agency. (2021, May 3). Definition of hazardous chemical and OSHA's MSDS requirement for determining applicability of EPCRA 311/312. <https://www.epa.gov/epcra/definition-hazardous-chemical-and-oshas-msds-requirement-determining-applicability-epcra>

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