



Chemicals are vital to our economy. They are used to develop medicines that maintain our health, provide refrigeration for our food supply, manufacture fuel for our vehicles and build the microchip that runs our smartphones. In the hands of a terrorist, however, chemicals could potentially be used to cause a significant number of deaths and injuries. The U.S. Department of Homeland Security, through the Infrastructure Security Compliance Division (ISCD), administers the Chemical Facility Anti-Terrorism Standards (CFATS) program by working with facilities to ensure they have security measures in place to reduce the risk of certain hazardous chemicals being exploited in an attack.



Outdoor tanks and pipes at a facility. (Source: DHS)

What is CFATS?

CFATS is a regulatory program (6 CFR Part 27) established in 2007 that addresses chemical security by identifying and regulating high-risk chemical facilities that possess chemicals of interest (COI) at specific concentrations and quantities. In 2014, Congress reauthorized and amended the program through the Protecting and Securing Chemical Facilities from Terrorist Attacks Act of 2014 (6 U.S.C. § 621, et seq).

Appendix A of the CFATS regulation lists more than 300 COI and their respective screening threshold quantities (STQ). Any facility that meets or exceeds the STQ for any COI is required to submit an online survey, known as the Top-Screen, within 60 days of coming in possession of the COI.

What is Risk-Based Tiering?

The CFATS regulation follows a risk-based approach that allows ISCD to focus its resources on high-risk chemical facilities. To identify a facility's specific level of risk, DHS analyzes information submitted through the Top-Screen to determine which facilities are high-risk and assign those facilities to one of four tiers with Tier 1 representing the highest-risk.

Enhanced Tiering Methodology

In 2013, DHS undertook a thorough review of the CFATS risk-tiering methodology. This included a peer review of the prior methodology conducted by a panel of experts drawn from across industry, academia, and government; a review of the proposed new methodology by external experts from industry, government, and the Homeland Security Studies and Analysis Institute; and an independent verification by Sandia National Laboratories.

In 2016, DHS rolled out the enhanced risk-tiering methodology that more accurately identifies and appropriately tiers high-risk chemical facilities. The improved methodology considers three main elements in a facility's high-risk determination:

- Vulnerability
- Consequence
- Threat

While much of the methodology is sensitive and/or classified, the following tables provide information to help facilities better understand the types of items that may impact their high-risk status and, as applicable, their risk tiers.

Vulnerability

The vulnerability variable considers inherent characteristics of the facility and/or assets that reduce vulnerability to a terrorist attack—for example, a COI storage container located in an underground earth formation.

Factors Considered to Reduce Vulnerability	Applicable Security Issue
Higher design pressure of a storage container	<ul style="list-style-type: none"> • Release
Below-grade storage	<ul style="list-style-type: none"> • Release
Larger, less portable COI containers	<ul style="list-style-type: none"> • Theft
COI is not shipped from the facility	<ul style="list-style-type: none"> • Diversion • Sabotage

Consequence

The consequence variable incorporates improved tools that allow DHS to more accurately calculate, through physics-based dispersion and blast modeling, the onsite and offsite impacts of COI exploitation and misuse.

Factors Considered for Consequence	Applicable Security Issue
Topography surrounding facility (urban or rural terrain)	<ul style="list-style-type: none"> • Release
Potentially exposed population surrounding facility	<ul style="list-style-type: none"> • Release
COI toxicity	<ul style="list-style-type: none"> • Release—toxics • Theft/Diversion—Weapons of Mass Effect/Chemical Weapons • Sabotage
COI flammability	<ul style="list-style-type: none"> • Release
COI explosive energy	<ul style="list-style-type: none"> • Release—Explosives (EXP) • Theft/Diversion-Explosives/Improvised Explosive Device
COI quantity and concentration	<ul style="list-style-type: none"> • Release • Theft/Diversion • Sabotage
COI storage: container location and pressure rating	<ul style="list-style-type: none"> • Release
COI storage: types of packaging	<ul style="list-style-type: none"> • Theft/Diversion
COI precursor characteristics: toxicity/explosive energy	<ul style="list-style-type: none"> • Theft/Diversion-Chemical Weapons Precursors/IEDPs
Mode of shipping	<ul style="list-style-type: none"> • Sabotage

Threat

The threat variable includes factors informed by the intelligence community that may affect the level of threat of terrorist attack or exploitation for a facility.

Factors Considered for Threat	Applicable Security Issue
Specific COI	<ul style="list-style-type: none"> • Release • Theft/Diversion
Mode of shipment	<ul style="list-style-type: none"> • Theft/Diversion • Sabotage

Tools and Resources

- For the latest information about the risk-tiering methodology, visit www.dhs.gov/cfats-tiering-methodology.
- The CSAT Help Desk provides timely support to chemical facility owners and operators. Call 1-866-323-2957 or email csat@hq.dhs.gov.

Contact Information

To discuss your specific facility's risk, you may speak with a Compliance Case Manager or Chemical Security Inspector. For any questions, comments or concerns, please contact CFATS@hq.dhs.gov or visit www.dhs.gov/chemicalsecurity.