



DEFEND TODAY,  
SECURE TOMORROW

# Chemical Security and Metallic 3D Printing

## Overview

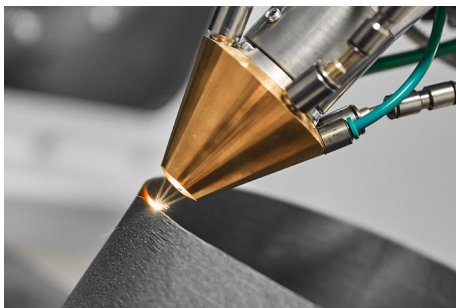
With rapid technological advances and a push to bridge supply chain gaps, the United States has seen an increase in the use of three-dimensional (3D) metallic printing applications. A variety of chemicals can be used in the 3D printing process. When used properly, these chemicals are a vital part of U.S. manufacturing industries ranging from automobile and aerospace manufacturing to medical instruments and university laboratories. But in the wrong hands, some of these same chemicals can be used for great harm.

## What Is CFATS?

In 2006, Congress authorized the U.S. Department of Homeland Security (DHS) to establish the Chemical Facility Anti-Terrorism Standards (CFATS) program. Managed by the Cybersecurity and Infrastructure Security Agency (CISA), the CFATS program identifies and regulates high-risk chemical facilities to ensure that security measures are in place that reduce the risk of certain chemicals being weaponized.

Aluminum powder is a chemical of interest (COI) under the CFATS program that must be reported to CISA if possessed at or above the screening threshold quantity (STQ) and concentration listed in Appendix A.

- ▶ STQ: 100 pounds
- ▶ Concentration: A Commercial Grade



Under CFATS, a chemical facility is “any establishment that possesses or plans to possess certain chemicals, at any relevant point in time” and can be a large company or a single individual. Appendix A of the CFATS regulation lists more than 300 chemicals of interest (COI) and their respective screening threshold quantity (STQ), concentration, and security issues. If in possession of a COI at or above the STQ and minimum concentration listed in Appendix A of the CFATS regulation, facilities must report those chemicals to CISA via a survey called a Top-Screen within 60 days, regardless of how long the facility possesses COI.

## Aluminum Powder and Metallic 3D Printing

The most common COI reported by metallic 3D printers is aluminum powder, which can be used in a variety of metallic 3D printing processes, from small components to aircraft parts. Aluminum powder is categorized as a Theft or Diversion Improvised Explosive Device Precursor (IEDP) security issue under the CFATS program. This means that if stolen, it could be used to make homemade explosives (HMEs). For example, 100 pounds of aluminum powder was used in the 1993 World Trade Center bombing.

### Aluminum Alloys

Aluminum alloys may also be reportable to CFATS as aluminum powder depending on composition or packaging. Contact the CSAT Help Desk with questions or for technical assistance at 866-323-2957 or email [CSAT@hq.dhs.gov](mailto:CSAT@hq.dhs.gov).

### Do you have, or plan to have, aluminum powder?

Scan the QR code to the right or visit [cisa.gov/cfats-process](https://cisa.gov/cfats-process) to learn more about how to report your COI to CISA.



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