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Appendix to Chemical Facility Anti-Terrorism Standards; Final Rule

DEPARTMENT OF HOMELAND SECURITY

6 CFR Part 27

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Appendix to Chemical Facility Anti-Terrorism Standards

AGENCY: Department of Homeland Security.

ACTION: Final rule.

SUMMARY: This final rule revises the list of chemicals of interest, or COI, which the Department of Homeland Security (DHS or the Department) included as Appendix A to the Chemical Facility Anti-Terrorism Standards Interim Final Rule. Appendix A lists chemicals of interest and screening threshold quantities, or STQs. Any facility that possesses (or later comes into possession of) the listed chemicals in quantities that meet or exceed the STQ for any applicable security issue must complete and submit a Top-Screen. This will assist the Department in determining whether a facility presents a high level of security risk.

In this final rule, DHS, among other things: (i) Adjusts the STQs for certain COI; (ii) defines the specific security issue or issues implicated by each chemical of interest, and in some cases, establishes different STQs for COI based upon the security issue presented; and (iii) adds provisions that instruct facilities on how to calculate the quantities of COI that they have in their possession.

These refinements to Appendix A will assist the Department in more precisely identifying facilities that may be designated as high risk, while reducing the burden on facilities that possess chemicals in smaller amounts.

EFFECTIVE DATES: The effective date of Appendix A to part 27, as added on April 9, 2007 (72 FR 17688) and revised by this rule is November 20, 2007. Additionally, the regulations published in this document are effective November 20, 2007. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of November 20, 2007.

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SUPPLEMENTARY INFORMATION: Note that for brevity, all references to CFR parts will be to parts in Title 6 of the Code of Federal Regulations (6 CFR), unless otherwise noted.

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Abbreviations and Terms Used in This Document

ACG—A Commercial Grade
AN—Ammonium Nitrate
APA—A Placarded Amount
ASP—Alternative Security Program
CAS—Chemical Abstract Service
CGA—Compressed Gas Association
COI—Chemicals of Interest
CSAC—Chemical Security Analysis Center
CSAT—Chemical Security Assessment Tool
CUM 100g—Cumulative STQ of 100 grams for Designated Chemical Weapons
CVI—Chemical-terrorism Vulnerability Information
CW—Chemical Weapons
CWC—Chemical Weapons Convention
CWP—Chemical Weapons Precursors
DOT—U.S. Department of Transportation
EPA—Environmental Protection Agency
EXP—Explosives
FBI—Federal Bureau of Investigation
IED—Improvised Explosive Device
IEDP—Improvised Explosive Device Precursors
LNG—Liquefied Natural Gas
NFPA—National Fire Protection Association
NOS—Not Otherwise Specified
NPGA—National Propane Gas Association
RMP—EPA's Risk Management Program
SVA—Security Vulnerability Assessment
SSP—Site Security Plan
STQ—Screening Threshold Quantity
TQ—Threshold Quantity
TSA—Transportation Security Administration
VBIED—Vehicle-Borne Improvised Explosive Device
WME—Weapon of Mass Effect

I. Background

On October 4, 2006, President George W. Bush signed the Department of Homeland Security Appropriations Act of 2007 (the Act), which provided the Department of Homeland Security with the authority to regulate the security of high risk chemical facilities. *See* Pub. L. 109–295, § 550. Section 550 required the Secretary of Homeland Security to promulgate interim final regulations ''establishing risk-based performance standards for security of chemical facilities'' by April 4, 2007 and specified that the regulations ''shall apply to chemical facilities that, in the discretion of the Secretary, present high levels of security risk.'' *Id.*

Pursuant to Section 550, on December 28, 2006, the Department issued an Advance Notice of Rulemaking (Advance Notice), which discussed a range of regulatory and implementation issues. *See* 71 FR 78276. By directing the Secretary to issue ''interim final regulations,'' Congress authorized the Secretary to proceed without the traditional notice and comment required by the Administrative Procedure Act. *See* 71 FR 78276, 78277. The Department, however, saw great benefit in soliciting comments on as much of the program as was practicable in the short timeframe permitted under the statute and therefore voluntarily sought comment on the Advance Notice, including a range of significant programmatic issues and regulatory text.

On April 9, 2007, the Department issued an Interim Final Rule (IFR), which responded to the comments to the Advance Notice and established a new part 27 to Title 6 of the Code of Federal Regulations. *See* 72 FR 17688. Part 27 establishes risk-based performance standards for the security of our Nation's chemical facilities. The rule requires covered chemical facilities to prepare Security Vulnerability Assessments (SVAs) that identify

facility security vulnerabilities. The rule also requires covered chemical facilities to develop and implement Site Security Plans (SSPs) that identify measures that satisfy the identified risk-based performance standards. It also allows certain covered chemical facilities, in specified circumstances, to submit Alternate Security Programs (ASPs) in lieu of an SVA, SSP, or both. In addition, the rule contains associated provisions addressing inspections and audits, recordkeeping, and the protection of information that constitutes Chemical-terrorism Vulnerability Information (CVI). Finally, the rule provides the Department with authority to compel compliance through the issuance of orders, including orders assessing civil penalties and orders to cease operations.

The IFR, except for Appendix A to part 27, went into effect on June 8, 2007. Appendix A contained a tentative list of Chemicals of Interest (COI). DHS accepted comments on the tentative list of chemicals in Appendix A (hereafter referred to as proposed Appendix A or proposed appendix) for 30 days until May 9, 2007. With this final rule, the Department responds to those comments and provides a final list of Chemicals of Interest in Appendix A. The same principles that guided the Department during the development of the proposed list have guided the Department during the development of this revised list, and those main principles are summarized here. First, DHS did not use any single, existing list as its sole source or classify all chemicals on any existing list in a particular way. Instead, DHS used multiple sources, so that it could obtain a more complete picture of the universe of facilities that may qualify as high risk. Second, in identifying the chemicals and STQs for chemicals, the Department sought to strike an appropriate balance: Sufficiently inclusive of chemicals in quantities that might present a high level of risk under the statute without being overly inclusive and thereby capturing facilities that are unlikely to present a high level of risk. Third, the Department has identified chemicals by considering security issue(s) associated with a chemical. The Department has identified the COI for preliminary screening based on the belief that these chemicals, if released, stolen or diverted, and/or contaminated, have the potential to create significant human life and/or health consequences.

II. The Final Rule: The Revised List of Chemicals

A. Overall Approach to Appendix A

While the universe of chemicals in Appendix A has remained substantially the same, the Department has re-structured the format of the appendix and has more clearly defined the provisions associated with these chemicals. The Department has included a considerable amount of additional information in the appendix as well as some new provisions to the regulatory text. The changes that the Department has made have come directly from comments or otherwise logically resulted from comments where DHS agreed that the comments raised valid points and were within the scope of the proposed appendix.

The proposed appendix listed only a chemical and a corresponding Chemical Abstract Service (CAS) number,[1] however the final appendix includes that information as well as a new column with commonly-used synonyms for certain chemicals. The final appendix also adds several new columns that identify the security issue(s) associated with each chemical of interest (COI).[2] In addition, the Department has assigned an STQ and minimum concentration provision to each chemical of interest. The final appendix, unlike the proposed appendix, does not trigger reporting obligations based on possession of an STQ of ''any amount.'' [3]

In the final appendix, the Department has listed the security issue(s) associated with each chemical of interest. Although these same security issues drove the Department's selection of chemicals for inclusion in the proposed appendix, the Department did not list (in the proposed appendix) the security issue(s) for each particular chemical. This additional information provides guidance to regulated entities, so that they better understand how to use the appendix, and it explains the Department's rationale(s) for including these chemicals, at these STQs, on the list.

The seven columns on the far right of the appendix contain the chemical facility security issues that the Department has identified for this appendix. There are three main categories of security issues: Release, theft/diversion, and sabotage/contamination.[4] Two categories have three subcategories each. The ''release'' category has three subcategories: (1) Release-Toxic: Chemicals with the potential to create a toxic cloud that would affect populations within and beyond the facility, if intentionally released; (2) Release-Flammables: chemicals with the potential to create a vapor cloud explosion that would affect populations within and beyond the facility, if intentionally released; and (3) Release-Explosives: chemicals with the potential to affect populations within and beyond the facility if intentionally detonated. The ''theft and diversion'' category also has three subcategories: (1) Theft/Diversion-Chemical Weapons (CW)/Chemical Weapons Precursors (CWP): chemicals that could be stolen or diverted and used as CW or easily converted into CW; (2) Theft/Diversion-Weapons of Mass Effect (WME): chemicals that could be stolen or diverted and used directly as WME; and (3) Theft/Diversion-Explosives (EXP)/Improvised Explosive Device Precursors (IEDP): chemicals that could be stolen or diverted and used in explosives or IEDs. The third category, ''sabotage/contamination,'' refers to those chemicals that, if mixed with other readily-available materials, have the potential to create significant adverse consequences for human life or health.

The Department has established baseline STQs for the chemicals of interest for each security issue. (DHS discusses the baselines in this preamble and also summarizes the general rules in Table 1: ''Summary of General Rules by Security Issue'' at the end of this section). DHS has set the STQ for each chemical of interest at the baseline amount for that chemical's security issue(s). Where necessary, the Department has identified a few exceptions. Most notably, DHS has developed a specialized approach for propane, chlorine, and ammonium nitrate.

Each chemical in Appendix A presents at least one security issue, and

[1] CAS numbers are unique identifiers for chemical substances.

[2] The Department has added definitions for Chemical of Interest (COI) and Security Issue to § 27.105 ''Definitions.''

[3] *See* footnote 64.

[4] As noted in the IFR and consistent with the definition of ''security issue'' in § 27.105, the Department recognizes one additional security issue—critical to government mission and national economy. (DHS has added a definition of security issue in this final rule at § 27.105.) The loss or interruption in production of certain chemicals, materials, or facilities could create significant adverse consequences for national security, the national or regional economy, and/or the ability of the government to deliver essential services. The Department plans to assess currently-available information and to collect new information (e.g., through the Top-Screen process) as a means of identifying facilities responsible for these types of chemicals. At this time, DHS is not including any chemicals in the appendix based on this security issue, though it may do so in the future.

some chemicals present multiple security issues. Where there are multiple issues associated with a chemical, a facility must complete and submit a Top-Screen if it meets or exceeds the STQ for any of the applicable security issues. For example, there are two security issues associated with arsenic trichloride: release-toxic and theft/diversion-CW/CWP. In the Security Issue columns of the appendix, there is a mark in the box for release-toxic and for theft/diversion-CW/CWP, and there is a STQ (and minimum concentration) listed under the Release column and under the Theft column. If the facility meets or exceeds the STQ listed in either the Release column or the Theft column (using the appropriate calculation provisions discussed below), the facility must complete and submit a Top-Screen. The Department has revised the regulatory text in § 27.200(b)(2) and § 27.210(a)(1)(i) to reflect this change.

The Department will periodically update the list of chemicals in Appendix A and will do so subject to notice and comment. The Department may add or remove chemicals, or categories of chemicals, or may change STQs based on new or additional information.

In revising Appendix A, the Department has found it necessary to revise the regulatory text, clarifying how facilities should use the appendix. The Department added § 27.203, which instructs facilities on how to calculate the STQ for a given chemical and § 27.204, which addresses mixtures. In this section of the preamble, DHS discusses provisions that are general or that apply to multiple security issues. DHS discusses provisions related to specific security issues in section II(C).

Section 27.203(a) provides specific exclusions from the calculation requirements that apply to chemicals of interest in all security issue categories. Facilities need not count chemicals of interest covered by these exclusions, because chemicals in such circumstances or forms are unlikely to contribute to the potential consequences of a successful attack. DHS has adopted several of these exclusions from the Environmental Protection Agency's (EPA) Risk Management Program (RMP) regulation. Sections 27.203(a)(1)–(5), (6), and (8) track the EPA exemptions in 40 CFR 68.115(b)(4)(i)–(iv), 68.115(b)(3), and 68.115(b)(2)(iii), respectively. The concepts are the same, though DHS has adjusted the language to make it consistent with the language in part 27 (e.g., whereas EPA considers TQs present at a ''stationary source,'' DHS considers STQs at a ''facility''). Note that EPA applies these exemptions to release chemicals (i.e., those which it regulates under RMP), while DHS applies these exclusions to all part 27 chemicals of interest (i.e., to all chemicals associated with the security issues of release, theft/diversion, and sabotage/contamination).

DHS has formulated one other exclusion specifically for this regulation. In § 27.203(a)(7), DHS exempts chemicals of interest in solid waste (including hazardous waste) regulated under the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901 *et seq.*) DHS does not believe that it is necessary for facilities to count COI in RCRA-regulated solid waste toward their STQ, because the Department does not believe that this waste is a likely target of a terrorist attack or contains COI that are likely sources of terrorist uses. As stated in the regulatory text, though, this exclusion does not apply to waste covered by 40 CFR 261.33, ''Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.'' This type of waste can include virtually pure chemicals (including off-specification products that may merely be inconsistent with a customer's specifications) that have been discarded. DHS thinks it is important for facilities to include this waste in the STQ calculation, because this waste is a potential source of COI that would be just as attractive to a terrorist as the chemical product itself.

Paragraph (b) of § 27.203 addresses STQ calculations related to release chemicals. Section 27.203(b)(1) provides instructions concerning the substances that facilities shall include when determining whether they possess quantities of a release chemical that meet or exceed the STQ. Proposed Appendix A did not contain the instructions enumerated in § 27.203(b)(1), but further consideration and a review of the comments caused DHS to provide these instructions. Pursuant to § 27.203(b)(1)(i), facilities must include chemicals in a vessel, which, pursuant to 40 CFR 68.3, ''means any reactor, tank, drum, barrel, cylinder, vat, kettle, boiler, pipe, hose, or other container.'' Facilities must also include chemicals of interest stored in magazines, as defined in 27 CFR 555.11. Pursuant to that Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) definition, a magazine is ''any building or structure, other than an explosives manufacturing building used for storage of explosive materials.'' In addition, facilities must include chemicals of interest in underground storage facilities. For purposes of part 27, an underground storage facility refers to a below-ground storage location for chemicals of interest or mixtures of chemicals of interest (e.g., petroleum-based materials) that are placed in the storage location (until needed) after having been extracted from the ground and refined or processed. Such facilities include, but are not limited to, depleted reservoirs in oil and/or oil gas fields, aquifers, and salt cavern formations. DHS understands that certain products (e.g., propane, natural gas, petroleum) may be stored in these underground storage facilities, and DHS wants to ensure that facilities count this material toward the amount of their COI.

Pursuant to § 27.203(b)(1)(ii), facilities must count chemicals of interest in specified transportation containers toward the STQ amount for release chemicals. In using this terminology, DHS is referring to the same category of transportation containers that EPA refers to in its RMP regulation—that is, transportation containers used for storage not incident to transportation, including transportation containers connected to equipment at a facility for loading or unloading and transportation containers detached from the motive power that delivered the container to the facility. *See* 40 CFR 68.3 (containing a description of transportation containers within the definition of ''stationary source''). These transportation containers would include, for example, tank cars attached to processing units and tank cars detached from motive power that had delivered the tank car to the facility.

While the EPA RMP regulation at 40 CFR 68.3 does not specifically mention transportation containers detached from the motive power, EPA discusses such provision in its Final Rule titled ''List of Regulated Substances and Thresholds for Accidental Release Prevention; Amendments'' [5] and in its Frequently Asked Questions on the EPA Web site.[6] Part 27 (like EPA's RMP regulation) does not require facilities to include chemicals of interest in transportation when calculating their STQs. DHS adopts the EPA definition of transportation, and accordingly considers a container to be in transportation as long as it is attached to the motive power (e.g., truck or locomotive) that delivered it to the site. If the tank car is detached from the motive power, and therefore no longer in transportation, the facility must

[5] *See* 63 FR 640 (January 6, 1998).

[6] *See* FAQ II.C.2 on the EPA Web site at *http://yosemite.epa.gov/oswer/ceppoweb.nsf/content/caa-faqs.htm.*

consider the contents of the tank car in calculating its STQ.

Pursuant to § 27.203(b)(1)(iii), facilities must also include chemicals of interest that are present as process intermediates, by-products, and incidental production materials. This means, for example, that a refinery must count toward the STQ for hydrogen sulfide the quantity of hydrogen sulfide produced as a by-product of any of its various processes. Or a facility should count toward the STQ for 37% hydrochloric acid the quantity of 37% hydrochloric acid produced from the absorption of hydrogen chloride gas into water and stored temporarily prior to subsequent dilution below the threshold concentration. DHS requires the inclusion of these items in calculating the STQ, because while they may not be present at all times, when present, they could be released and contribute to the consequences of an attack.

The remaining two subsections in § 27.203(b)(1) are items that EPA exempted, but which DHS believes are important to include in this regulatory program; they have the potential to create a significant offsite impact in the event of a successful attack. First, when calculating the amount of a chemical of interest, facilities must include chemicals in natural gas or liquefied natural gas (LNG) stored in ''peak shaving facilities.'' *See* § 27.203(b)(1)(iv). Companies typically store natural gas or LNG in peak shaving facilities when demand for product is low or slows. The natural gas or LNG is stored until it is used later during peak consumption periods. EPA excludes the chemicals in these peak shaving facilities by virtue of the fact that EPA considers them storage incident to transportation, and EPA does not subject that type of storage to its RMP regulation.[7] Within DHS, TSA is the lead agency for the security of pipeline transportation and of transportation-related facilities; however, such facilities (e.g., peak shaving facilities) may be required to provide information under part 27. TSA and the Chemical Security Compliance Division will work together to ensure that DHS efforts directed at pipelines are complementary.

Second, facilities must also include chemicals of interest in fuels when stored in above-ground tank farms, including tank farms that are part of pipeline systems. *See* § 27.203(b)(1)(v). This includes fuels with any one of the four National Fire Protection Association (NFPA) flammability hazard ratings and not just fuels with an NFPA flammability hazard rating of 4. EPA excludes these fuels by virtue of the provisions in its mixtures rule for regulated flammable substances. *See* 40 CFR 68.115(b)(2). These fuels also would have been excluded under DHS's flammable mixtures provisions (*see* § 27.204(a)(2)[8]) except that DHS specifically included these fuels through this provision here in § 27.203(b)(1)(v), because of concern that they could create significant human life or health consequences if an intentional attack by a terrorist were successful.

In § 27.203(c), DHS provides that facilities shall only count theft/diversion chemicals of interest that are in a transportation packaging. DHS has adopted the Department of Transportation (DOT) definition of packaging, which refers to ''a receptacle and any other components or materials necessary for the receptacle to perform its containment function in conformance with the minimum packing requirements of [DOT's Hazardous Materials Regulations].'' *See* 49 CFR 171.8. This includes, but is not limited to, cylinders, bulk bags, bottles inside or outside of a box, cargo tanks, and tank cars. DHS has focused the universe of theft/diversion chemicals of interest in this fashion, because the theft/diversion security issue revolves around portable and transportable amounts of certain chemicals. DHS is concerned about both the theft of portable amounts of these chemicals and the diversion of shipments of these chemicals.

The Department has also added § 27.204, which addresses mixtures. It provides a minimum concentration provision for each security issue. The Department included this provision in response to commenters, who requested guidance on how to treat mixtures of chemicals of interest. *See* § 27.204. A facility must count toward the STQ for a given chemical all quantities of that chemical that meet or exceed the listed minimum concentration amount. These minimum concentration provisions are derived from existing federal regulatory programs (including EPA's RMP program and the Department of Commerce's Chemical Weapons Convention (CWC)) Regulations, as well as from industry technical standards (*see, e.g.*, Standard for Classification of Toxic Gas Mixtures, CGA P–20–2003). The specific minimum concentration provision for each security issue is discussed in the sections below.

In calculating chemical amounts, facilities should consider the chemicals in their possession within the framework for each of the three separate and distinct security issues categories (release, theft/diversion, and sabotage/contamination). A facility must count each chemical of interest in its possession, using the relevant calculation provisions for each of the categories, and if the facility possesses an amount that meets or exceeds the STQ for any one of the categories (i.e., security issues), the facility must complete and submit a Top-Screen. To illustrate that point, the Department highlights sulfur dioxide, which is both a release-toxic (STQ: 5,000 pounds) and theft/diversion-WME (STQ: 500 pounds).

—Toward the release STQ of 5,000 pounds, a facility must count all quantities of sulfur dioxide in vessels and underground storage facilities; in transportation containers used for storage not incident to transportation, including storage containers connected to equipment at a facility for loading or unloading and storage containers detached from the motive power that delivered the container to the facility; and present as process intermediates, by-products, and material produced incidental to the production of a product if they exist at any given time.

—Toward the theft/diversion-WME STQ of 500 pounds, a facility must count all quantities of sulfur dioxide in a transportation packaging.

If the facility has 5,000 pounds or more of sulfur dioxide aggregated onsite in vessel(s), transportation packaging(s), etc. or 500 pounds or more of sulfur

[7] Under the RMP rule, EPA considers there to be a threshold quantity of a substance if it is present at a stationary source. 40 CFR 68.115(a). ''The term stationary source does not apply to transportation, including storage incident to transportation, of any regulated substance * * *.'' 40 CFR 68.3. EPA ''considers the transportation exemption to include storage fields for natural gas where gas taken from pipelines is stored during non-peak periods, to be returned to the pipelines when needed.'' 63 FR 640, 642 (Jan. 6, 1998). Because EPA considers this type of storage incident to transportation, the type of storage is not subject to EPA's RMP rule.

[8] Section 27.204(a)(2) provides that ''except as provided in § 27.203(b)(1)(v) for fuels that are stored in aboveground tank farms (including farms that are part of pipeline systems), if a release-flammable chemical of interest is present in a mixture in a concentration equal to or greater than one percent (1%), and the mixture has a National Fire Protection Association (NFPA) flammability hazard rating of 1, 2, or 3, the facility shall count the entire weight of the mixture toward the STQ.'' Without the ''exception'' clause, DHS would have excluded these fuels by virtue of the fact that these fuels are mixtures that likely have NFPA flammability hazard ratings of 1, 2, and 3. Pursuant to § 27.204(a)(2), facilities need not count the entire amount of these mixtures (i.e., mixtures with COI present in a concentration equal to or greater than one percent (1%) and with a flammability hazard rating of 1, 2, or 3) toward the STQ.

dioxide in transportation packagings (or both), the facility must complete and submit a Top-Screen.

Facilities must consider each security issue framework independently. As a result, there may be chemicals of interest that a facility counts under more than one security issue framework. That is completely appropriate, as there is a different focus (and therefore distinct counting and mixtures rules) for each security issue. For example, with respect to sulfur dioxide, a facility will count toward its release STQ quantities of sulfur dioxide in a tank car when that tank car is connected to equipment at the facility for loading and unloading and when that tank car is detached from the motive power that delivered it to the facility (*see* § 27.203(b)(1)(ii)) and it will count toward its theft/diversion-WME STQ quantities of sulfur dioxide in tank cars (*see* § 27.203(c)). Under both frameworks (release and theft), the facility may, in fact, count the same sulfur dioxide. As there are separate purposes for each framework, however, this is appropriate. The theft-STQ is focused on preventing someone from stealing or diverting the shipment of sulfur dioxide in the tank car and weaponizing it. The release-STQ is focused on preventing someone from intentionally releasing a quantity of sulfur dioxide that could affect the population within and beyond the facility.

TABLE 1.—SUMMARY OF GENERAL RULES BY SECURITY ISSUE

Security issue	STQ [9]	COI to exclude	COI to include	Minimum concentration
Release—Toxic	500–20,000 lbs	27.203(a) 27.203(b)(2)	27.203(b)(1) 27.204(a)(1)	27.204(a)(1)
Release—Flammable	10,000 lbs	27.203(a) 27.203(b)(2) 27.203(b)(3)	27.203(b)(1) 27.204(a)(2)	27.204(a)(2)
Release—Explosive	5,000 lbs	27.203(a)	27.203(b)(1)	27.204(a)(3)
Theft/Diversion—CW/CWP	CUM 100 grams–220 lbs	27.203(a)	27.203(c)	27.204(b)(1)
Theft/Diversion—WME	15–500 lbs	27.203(a)	27.203(c)	27.204(b)(2)
Theft/Diversion—EXP/IEDP	100–400 lbs	27.203(a)	27.203(c)	27.204(b)(3)
Sabotage/Contamination	A Placarded Amount	27.203(a)	27.203(d)	27.204(c)

B. Effect of a Final Appendix A

Under Section 550, the Department has the authority to use its best judgment and all available information in determining whether a facility presents a high level of security risk. Appendix A will assist the Department in determining which facilities present a high level of security risk. In Appendix A, the Department has identified chemicals of interest (at specified STQs) that trigger preliminary screening requirements. If a facility possesses a chemical of interest at or above the STQ for any applicable security issue, the facility must complete and submit a Chemical Security Assessment Tool (CSAT) Top-Screen. The STQ is not the threshold for establishing whether a given facility is a high risk facility, but it is a threshold for determining whether the facility must complete and submit a Top-Screen.

Only after the Department gathers additional information through the Top-Screen process will the Department make a determination [10] as to whether a facility presents a high level of security risk and therefore must comply with the substantive requirements in part 27. Accordingly, the presence or amount of a particular chemical is not the sole factor in determining whether a facility presents a high level of security risk; it is not the only indicator of a facility's coverage under part 27.

Sections 27.200(b)(2) and 27.210 contain the requirements related to Appendix A, and those requirements are fully operative upon publication of this final rule in the **Federal Register**. Section 27.200(b)(2) requires facilities to complete and submit a Top-Screen if they possess any of the chemicals identified in Appendix A at or above the STQ for any applicable security issue. If a facility possesses even one of the chemicals of interest listed in Appendix A at or above the applicable STQ, the facility has an obligation to complete and submit a Top-Screen. Section 27.210(a)(1)(i) provides the initial submissions schedule for facilities that have to submit a Top-Screen pursuant to Appendix A.

Pursuant to § 27.210(a), the Department uses two methods to require facilities to undergo preliminary screening (i.e., complete and submit a Top-Screen). The first method, found in § 27.210(a)(1)(i), is linked to Appendix A. From the effective date of a final Appendix A (i.e., this final rule), facilities that possess any of the chemicals listed in Appendix A at or above the STQ for any applicable security issue will have 60 calendar days to complete and submit a Top-Screen to DHS. Facilities that later come into possession of such chemicals at or above the STQ for any applicable security issue will have to complete and submit a Top-Screen within 60 calendar days of coming into possession of such chemicals. *See* § 27.210(a)(1)(i). In addition, covered facilities [11] have an ongoing obligation to complete and update the Top-Screen as provided in § 27.210(d). Covered facilities that make material modifications to their operations or site must complete and submit a revised Top-Screen within 60 days of the material modification. *See* § 27.210(d).

The second method, found in § 27.210(a)(1)(ii), allows the Department to contact facilities independently of

[9] Specialized STQs apply to ammonium nitrate, chlorine, and propane.

[10] Based on the information the Department receives in accordance with § 27.200 and § 27.205 (including information submitted through the Top-Screen), the Department makes a preliminary determination as to a facility's placement in a risk-based tier. *See* § 27.220(a). Following review of a covered facility's Security Vulnerability Assessment (SVA), the Department makes a final determination as to a facility's placement in a risk-based tier. *See* § 27.220(b).

[11] As used herein, a ''covered facility'' (or ''covered chemical facility''), means ''a chemical facility determined by the Assistant Secretary to present high levels of security risk. * * *'' and differs from a ''chemical facility'' (or ''facility''), which refers to ''any establishment that possesses or plans to possess, at any relevant point in time, a quantity of a chemical substance determined by the Secretary to be potentially dangerous or that meets other risk-related criteria identified by the Department.'' *See* § 27.105. Although DHS will require many *facilities* to complete and submit a Top-Screen, DHS will only require *covered facilities* to develop a chemical facility security program (i.e., complete a SVA pursuant to § 27.215, develop and implement a SSP pursuant to § 27.225, etc.).

Appendix A. Facilities must complete and submit a Top-Screen if the Department notifies the facility to do so through a **Federal Register** notice or on an individual basis through written notification. The Department may choose to contact facilities in this manner based on new or additional information or based on intelligence information about terrorists' interest in certain chemicals or certain facilities. The Department will specify the time frame for these Top-Screen submissions in the written notification. Since the effective date of the IFR, the Department has used the second method (i.e., contacting certain facilities individually and directing them to complete the Top-Screen). With the publication of this final rule, both triggering requirements for completing the Top-Screen will be in effect.

C. Provisions by Security Issue

1. Release-Toxics and Release-Flammables

a. Chemicals

To identify the release chemicals for Appendix A, the Department looked to the list of substances in the EPA's RMP rule.[12] *See* Tables 1 and 2 to 40 CFR § 68.130 for release-toxics and Tables 3 and 4 to 40 CFR 68.130 for release-flammables. The Department had included all of the EPA RMP substances in proposed Appendix A,[13] and aside from the exceptions noted below, continues to do so in this final appendix. For release-toxics, the Department uses the same listing criteria, including the EPA acute toxicity criteria and vapor pressure cut-off, which can be found in EPA's final rule, ''List of Regulated Substances and Threshold for Accidental Release Prevention; requirements for Petitions Under Section 112(r) of the Clean Air Act as Amended.'' *See* 59 FR 4478, 4482 (January 31, 1994). EPA includes a toxic substance on its RMP list if the substance is an acute toxic that has vapor pressure high enough that the release could result in an offsite poisonous inhalation hazard.

In this final appendix, the Department has removed three release-toxic chemicals[14] that it had included in the proposed appendix. While these three toxic chemicals appear on EPA's RMP list, they do not meet the RMP listing criteria for vapor pressure. EPA included these three chemicals in their RMP list, because Congress specifically required their inclusion pursuant to § 7412(r)(3) of the Clean Air Act, 42 U.S.C. 7401 *et seq.*[15] Because these chemicals do not otherwise meet the RMP listing criteria for toxic chemicals, DHS has removed them from Appendix A.

For release-flammable chemicals, DHS also uses the same listing criteria as EPA does for release-flammable chemicals. EPA, and now DHS, identifies flammable gases and volatile flammable liquids based on the flash point and boiling point criteria that the NFPA uses for its highest flammability hazard ranking (Class IA). The criteria can be found in EPA's Final List Rule. *See* 59 FR 4478, 4480 (January 31, 1994).

b. STQ

DHS set the STQ for release-toxics at the same amount that EPA set the Threshold Quantity (TQ) for toxic substances under its RMP regulation.[16] That amount ranges from 500 to 20,000 pounds, depending on the toxicity and volatility of the substance. Likewise, DHS set the STQ for release-flammables at the same amount as EPA—10,000 pounds. The Department has adopted the EPA RMP TQs, because DHS accepts the same rationale that EPA used when setting its TQs—i.e., that they are amounts that, if released, have the potential to create significant human health effects. The Department realizes that, in developing these TQs, EPA collected extensive input on and conducted a thorough analysis, and DHS wants to leverage that knowledge base.

Whereas the Department had proposed to set the STQs for these release chemicals at seventy-five percent of the EPA RMP TQs in the IFR, the Department has instead set these STQs at the same amount as the EPA RMP TQs. In doing so, the Department accepted the recommendation of many commenters to set the STQ for these release chemicals at, rather than below, the EPA RMP TQs. The Department realized that it did not need to reduce its STQs to a level below that of the EPA TQs, because even though DHS and EPA are seeking to satisfy two different mandates (i.e., DHS to prevent an intentional release and EPA to prevent an accidental release), DHS has made accommodations for that difference. The DHS method for calculating an STQ is more conservative than that of the EPA for TQs. Under part 27, except for the exclusions listed in § 27.203(a), (b)(2), and (b)(3), a facility must aggregate the total amount of COI that it possesses at its facility, including COI that may exist in separate processes. By contrast, under EPA's RMP regulation, a facility must consider the total quantity of a regulated substance ''contained in a process'' that exceeds the TQ. *See* 40 CFR 68.115(a). For example, a facility that has multiple processes (involving an RMP substance), with each process below the threshold for the reportable TQ, would not be covered under RMP. That facility, however, would be covered under part 27 if the total quantity of all the processes (associated with a chemical of interest) was at or above the STQ.

DHS believes that, in the case of an intentional terrorist attack, chemicals or materials would likely be released from multiple vessels rather than a single vessel. As a result, the Department believes that setting the STQ at an amount that reflects the entire inventory of the facility better captures the potential consequences of an intentional attack. The Department believes this is more appropriate than EPA's valid assumption for accidents that the worst-case release[17] would be a release from the largest vessel.

Despite the general rule for release chemicals (i.e., that the DHS STQs are the same as the EPA TQs), there are a few differences between the EPA TQs and the DHS STQs. First, as discussed below in section II(D)(1), DHS treats propane differently than all other release-flammables. Second, the RMP TQ for toxic substances applies to all DHS release-toxics except for eleven[18] that meet the RMP listing criteria for both toxicity and flammability. EPA treats these substances as toxics in its RMP rule; however, DHS lists these substances as flammables (and sets the

[12] The Clean Air Act (42 U.S.C. 7401, *et seq.*) provides that the EPA shall promulgate a list of substances that ''in the case of accidental release, are known to cause or may reasonably be anticipated to cause death, injury, or serious adverse effects to human health or the environment.'' *See* 42 U.S.C. 7412(r)(3).

[13] Note that some of these chemicals present not only a release issue, but present additional security issue(s) too (e.g., theft and diversion or sabotage and contamination).

[14] The three release-toxics are: Toluene 2,4-diisocyanate; Toluene 2,6-diisocyanate; and Toluene diisocyanate (unspecified isomer).

[15] In 42 U.S.C. § 7412(r)(3), Congress directed EPA to include toluene diisocyanate (TDI) in its RMP list. EPA looked to the types of TDI in commercial production (i.e., those types listed on the Toxic Substances Control Act Chemical Substance Inventory) and listed the three forms noted in footnote 14.

[16] *See* 40 CFR part 68.

[17] In 40 CFR 68.3, EPA defines ''worst-case release'' as ''the release of the largest quantity of a regulated substance from a vessel or process line failure that results in the greatest distance to an endpoint defined in § 68.22(a).''

[18] The eleven RMP release-toxics are: ethylene oxide, furan, hydrazine, hydrogen selenide, methyl chloride, methyl mercaptan, nickel carbonyl, peracetic acid, phosphine, propylene oxide, and tetranitromethane.

STQ at 10,000 pounds), because, in an intentional release, they are more likely to act like flammables and potentially create an explosive vapor cloud.

In calculating whether a facility meets the STQ for release-toxic or release-flammable chemicals, the facility need not include release-toxic or release-flammable chemicals of interest that a facility manufactures, processes, or uses in a laboratory at the facility under the supervision of a technically qualified individual as defined in 40 CFR 720.3. See § 27.203(b)(2). DHS adopted this laboratory quantities exclusion, including the definition of ''technically qualified individual,'' from EPA. The comparable EPA laboratory quantities exemption is located in EPA's RMP regulation at 40 CFR 68.115(b)(5), and EPA's definition of ''technically qualified individual'' is located at 40 CFR 720.3(ee). EPA defines a ''technically qualified individual'' to mean ''a person or persons (1) who, because of education, training, or experience, or a combination of these factors, is capable of understanding the health and environmental risks associated with the chemical substance which is used under his or her supervision, (2) who is responsible for enforcing appropriate methods of conducting scientific experimentation, analysis, or chemical research to minimize such risks, and (3) who is responsible for the safety assessments and clearances related to the procurement, storage, use, and disposal of the chemical substance as may be appropriate or required within the scope of conducting a research and development activity.'' Like EPA, the DHS laboratory quantities exclusion does not apply to specialty chemical production; manufacture, processing, or use of substances in pilot plant scale operations; or activities, including research and development, involving chemicals of interest conducted outside the laboratory. Facilities that engage in such activities must count those chemicals toward their STQ.

DHS believes that, in a release, a lab quantity of a release chemical would not significantly contribute to the consequentiality of an attack. Moreover, under this provision, DHS believes that, where lab quantities of release chemicals are used, there are appropriate controls by virtue of the fact it is done so under the supervision of a technically qualified individual. In adding this laboratory quantity provision, DHS was responsive to the numerous commenters, including those from colleges, universities, and industrial laboratories, who requested such a provision.

As noted above, DHS adopted this laboratory quantities exclusion from the EPA. DHS, however, has made one minor clarifying adjustment to the language that it adopted from EPA. In response to comments, DHS added language to § 27.203(b)(2)(i) to make explicit that activities conducted outside the laboratory may include research and development activities. A facility must count all quantities of COI involved in activities conducted outside of the laboratory (including research and development) toward its STQ. In other words, such COI would not be subject to the laboratory quantities exclusion.

c. Minimum Concentration (Mixtures)

Pursuant to § 27.204(a) and as noted in the ''minimum concentration'' entries in the appendix, the minimum concentration of a release-toxic or release-flammable chemical of interest that a facility must include when counting the amount of COI is one percent (1%) by weight. Pursuant to § 27.204(a)(1), if a release-toxic chemical is present in a mixture, and the concentration of the chemical is equal to or greater than one percent (1%) by weight, the facility shall count the amount of the chemical of interest in the mixture toward the STQ. For example, if a facility has 500 pounds of a toxic mixture containing five percent (5%) acrolein, the facility should count five percent (5%) of the weight of the mixture, or 25 pounds of acrolein, toward the STQ of 5,000 pounds. Except for oleum, if a facility can measure or estimate (and document) that the partial pressure of the regulated substance in the mixture is less than 10 mm Hg, the facility need not consider the mixture when determining the STQ. If a release-toxic chemical of interest is present in a mixture, and the concentration of the chemical is less than one percent (1%) by weight of the mixture, the facility need not count the amount of that chemical in the mixture in determining whether the facility possesses the STQ. Note that these mixture provisions track those of the EPA in its RMP regulation. *See* 40 CFR 68.115(b)(1).

Pursuant to § 27.204(a)(2), if a release-flammable chemical of interest is present in a mixture in a concentration equal to or greater than one percent (1%) by weight of the mixture, and the mixture has a NFPA flammability hazard rating of 4, the facility shall count the entire weight of the mixture toward the STQ. For example, if a facility has 500 pounds of a flammable mixture containing five percent (5%) pentane and the mixture as a whole has a NFPA flammability hazard rating of 4, the facility shall count the entire weight of the mixture, or 500 pounds, toward the STQ of 10,000 pounds. If a release-flammable chemical of interest is present in a mixture in a concentration equal to or greater than one percent (1%) by weight of the mixture, and the mixture has a NFPA flammability hazard rating lower than 4 (i.e., NFPA hazard rating of 1, 2, or 3), the facility need not count the entire weight of the mixture toward the STQ. If a release-flammable chemical of interest is present in a mixture, and the concentration of the chemical is less than one percent (1%) by weight, the facility need not count the mixture in determining whether the facility possesses the STQ. Note that these mixture provisions track those of the EPA in its RMP regulation. *See* 40 CFR 68.115(b)(2).

2. Release-Explosives

a. Chemicals

To identify release chemicals that present an explosive hazard, DHS looked to the DOT hazardous materials regulations (*see* 49 CFR 171–180) and the EPA's original listing rule for RMP (*see* 59 FR 4478 (January 31, 1994)). DOT identifies explosives as one of nine classes of hazardous materials that it regulates and divides explosives (''Class 1 explosives'') into six divisions. *See* 49 CFR 173.50(b). Although DHS had included explosives from the six DOT explosives divisions in the proposed Appendix A, DHS is only including Division 1.1 explosives in this final appendix.[19] After consideration of comments and further review, DHS decided to focus on Division 1.1 explosives, which are those that have a mass explosion hazard. A mass explosion hazard is one which affects almost the entire load instantaneously.

DHS has incorporated all of the DOT Class 1, Division 1.1 explosive chemicals with only two broad exceptions. First, the Department does not include those explosive materials for which DOT uses a generic shipping name with the suffix ''N.O.S.'' [20] This refers to materials with generic descriptions in the Hazardous Materials Table in 49 CFR 172.101 (e.g., Substances, explosive, n.o.s.). The Department has instead identified the relevant Class 1 explosive materials as only those that DOT specifically names in its Hazardous Materials Table. Second, DHS does not include articles

[19] As a result of that decision, DHS removed chemicals such as dinitrosobenzene, sodium dinitro-o-cresolate, sodium picramate, tetrazol-1-acetic acid, and zirconium picramate.

[20] N.O.S. refers to ''not otherwise specified.''

or devices that DOT lists in its Hazardous Material Table. Examples of those articles and devices include charges, guns, detonators, detonator assemblies, fuses, primers, cartridges, and motors. DHS does not believe, at this time, that it is necessary to include this broader universe of substances and materials. Coverage of chemical facilities that present a high level of risk and that include these materials will be triggered by other STQ provisions of this rule. If the Department finds that is not the case for a particular facility, the Department will seek information from that facility.

DHS believes it is appropriate to include DOT Class 1, Division 1.1 explosive materials in Appendix A despite the EPA's exclusion of these materials. At the onset of the RMP program, EPA had listed DOT Division 1.1 explosives as a regulated substance. EPA set the TQ at 5,000 pounds, because the EPA believed that a blast wave from such an amount had the potential to cause offsite impacts. *See* 59 FR 4478 (January 31, 1994). EPA later issued a final rule, delisting Class 1, Division 1.1 explosives. *See* 63 FR 640 (January 6, 1998). In the final rule, EPA concluded that ''current regulations and current and contemplated industry practices promote safety and accident prevention in storage, handling, transportation, and use of explosives. As a result, these regulations and practices adequately protect the public and the environment from the hazards of accidents involving explosives.'' *See* 63 FR 640, 641. DHS notes that EPA's decisions were based on safety and the prevention of an accidental release. DHS is concerned with an intentional attack on an explosives facility, which has the potential to generate significant impacts for human life and health beyond the facility. Given the different focus of DHS's regulation, it is important that DHS consider DOT Class 1, Division 1.1 explosives; there is the potential for a serious off-site effect from an intentional and successful attack on a facility with these explosives.

b. STQ

DHS proposed an STQ of 2,000 pounds [21] for release-explosives but now sets the STQ for release-explosives at 5,000 pounds. As discussed above in relation to release-toxics and release-flammables, DHS has decided to set the STQ for release chemicals at the EPA TQs. Five thousands pounds is the TQ that EPA had used for DOT Division 1.1 explosives when the DOT Division 1.1 explosives were part of the EPA RMP program. In addition, this is the same quantity that TSA now proposes to use for DOT explosives in its Rail Transportation Security NPRM.[22] All release-explosives are also listed as theft/diversion-EXP/IEDP chemicals (although all theft/diversion-EXP/IEDP chemicals are not listed as release-explosives, because the theft/diversion-EXP/IEDP category includes both actual explosives and precursors to explosives). A facility that possesses a chemical that presents both a release-explosive hazard and a theft/diversion-EXP/IEDP hazard must consider both of the applicable STQs, and if the facility possesses a quantity that satisfies either STQ, the facility must complete and submit the Top-Screen.

In calculating whether a facility meets the STQ for release-explosive chemicals, the facility need not include release-explosive chemicals of interest that a facility manufactures, processes, or uses in a laboratory at the facility under the supervision of a technically qualified individual as defined in 40 CFR 720.3. *See* § 27.203(b)(2). This provision is identical to the laboratory quantities provision that applies to release-toxic and release-flammable chemicals and that is discussed above.[23]

c. Minimum Concentration (Mixtures)

Section 27.204(a)(3) provides that a facility shall count toward the STQ the total quantity of all commercial grades of release-explosives. DHS has added a definition of ''A Commercial Grade'' (ACG) to § 27.105. ACG refers to any quality or concentration of a chemical of interest offered for commercial sale that a facility uses, stores, manufactures, or ships.

3. Theft/Diversion-CW/CWP

a. Chemicals

In identifying chemical weapons (CW) and their precursors that are at risk for theft or diversion, the Department looked to the chemicals covered by the Chemical Weapons Convention (CWC).[24] The chemicals covered by the CWC regulations are divided into three lists, or ''schedules,'' based on their previous use as a CW or possible utility in developing chemical weapons.[25] Schedule 1 covers chemical weapons agents and their immediate precursors. They have very limited industrial and medical applications. Schedule 2 covers chemicals and precursors that have some industrial uses. Schedule 3 covers chemicals and precursors with broad commercial applications, some of which were formerly weaponized.[26]

While the Department included chemicals from all three Schedules [27] in proposed Appendix A, the Department has only included select chemicals from the CWC Schedules in final Appendix A. The Department continues to include all specifically identified Schedule 1 chemicals, because they are actual CW agents and their immediate precursors. Note that, based on comments, the Department has listed these Schedule 1 chemicals by their individual common name along with their chemical name.

With respect to Schedule 2 and 3 chemicals, the Department has only included those Schedule 2 and 3 chemicals and precursors that are ''easily weaponizable''—that is, they could be easily converted into chemical weapons using simple chemistry, equipment, and techniques.[28] DHS made the determination about ''weaponizability'' after consulting with several sources, including the Federal Bureau of Investigation (FBI) and the DHS Chemical Security Analysis Center (CSAC).[29] As a result of this approach, the Department removed chemicals that had appeared on the proposed list but

[21] In the proposed appendix in the IFR, DHS set the STQ for these explosive chemicals at 2,000 pounds. In the IFR, however, DHS was only considering the theft/diversion concern. In the IFR, had DHS set the STQ for these explosive chemicals (using the method of calculating the STQ at 75% of the EPA RMP TQ) based on a release concern the STQ would have been 3,750 pounds. As discussed in this preamble, while the current EPA RMP does not contain release-explosives, EPA had previously included release-explosives in the RMP program, and when doing so, EPA set the TQ at 5,000 pounds.

[22] 71 FR 76852 (December 21, 2006). *See* proposed 49 CFR 1580.100(b)(1).

[23] *See* § II(C)(1)(b) above.

[24] The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction is an international arms control, disarmament, and non-proliferation treaty, which is implemented by 22 U.S.C. 6701, *et. seq.* The Department of Commerce administers the implementing regulations. *See* 15 CFR part 710.

[25] Schedule 1 chemicals are provided in Supplement No. 1 to 15 CFR part 712, Schedule 2 chemicals are provided in Supplement No. 2 to 15 CFR part 713, and Schedule 3 chemicals are provided in Supplement No. 3 to 15 CFR part 714.

[26] *See* ''The Chemical Weapons Convention Regulations: Frequently Asked Questions and Answers on Industry Compliance,'' U.S. Department of Commerce, Bureau of Industry and Security, Publication CWC–006 (Updated May 2006).

[27] There were a few Schedule 1 chemicals, however, that were inadvertently omitted from the proposed appendix.

[28] Among the Schedule 2 chemicals, DHS included certain easily-weaponizable chemicals that are representative of ''families'' of Schedule 2 chemicals (as opposed to uniquely identifiable Schedule 2 chemicals).

[29] One of the DHS Science and Technology Centers, the CSAC leverages existing Department of Defense (and other) infrastructure and capabilities to provide analysis and scientific assessment of the chemical threat against the homeland and the American public.

were now determined not to be easily weaponizable (e.g., chloropicrin). In addition to including select CWC chemicals, Appendix A also contains one other easily weaponizable chemical (triethanolamine hydrochloride) from the Australia Group's [30] ''Export Controls List: Chemical Weapons Precursors.''

b. STQ and Minimum Concentration (Mixtures)

DHS has eliminated the ''any amount'' STQ that it used in the proposed appendix for theft/diversion-CW/CWP chemicals. In this final appendix, DHS has set the STQ for each theft/diversion-CW/CWP chemical based on the Schedule from which DHS adopted the chemical. The STQ for Schedule 1 chemicals is cumulative, or ''CUM 100g,'' meaning that all amounts of Schedule 1 chemicals at a facility count toward the cumulative STQ of 100 grams. Section 27.203(c) provides that ''where a theft/diversion-Chemical Weapons (CW) chemical is designated by ''CUM 100g,'' a facility shall total the quantity of all such designated chemicals in its possession to determine whether the facility possesses theft/diversion-CW chemicals that meet or exceed the STQ of 100 grams.'' This is an aggregate amount and not a per agent limit. DHS added a definition for ''CUM 100g'' to § 27.105 ''Definitions'' and included this new provision in § 27.204(b)(1). ''CUM 100g'' is the entry for both the STQ and Minimum Concentration columns for all Schedule 1 chemicals. DHS decided to use this amount based on the recommendation of CSAC, which indicated that this amount merits proper security for purposes of preventing theft and diversion to create significant human impact and cause widespread panic.

The STQs for Schedule 2 and 3 chemicals, which are based on their ease of weaponization, are 2.2 pounds and 220 pounds, respectively.[31] Unlike the STQ for Schedule 1 chemicals, these STQs are not cumulative. For non-Schedule 1 theft/diversion-CW/CWP chemicals of interest that are present in a mixture at or above the minimum concentration listed in the column in Appendix A, the facility should count the entire amount of the mixture toward the STQ. *See* § 27.204(b)(1).

4. Theft/Diversion-WME

a. Chemicals

To identify chemicals that might be targeted for theft or diversion as weapons of mass effect (WME), the Department looked to the DOT hazardous materials regulations and considered gases that are poisonous by inhalation (PIH). In proposed Appendix A, DHS listed all DOT Division 2.3 PIH gases including those in Hazard Zones A through D.[32] In this finalized appendix, the Department has not included Hazard Zone D PIH gases (including carbon monoxide and sulfuryl fluoride), because they do not rise to a level of consequentiality that warrants inclusion as a theft/diversion-WME chemical.[33] In addition, the Department no longer includes methyl bromide on the list of chemicals, because it is being phased out of domestic manufacture and use under Clean Air Act regulations implementing the United States' obligations as a signatory to the Montreal Protocol on Substances that Deplete the Ozone Layer.[34] Thus, given the limited and decreasing availability of methyl bromide, the Department does not believe that the potential consequences of an attack warrant inclusion of that chemical on the list of chemicals in Appendix A.

In the proposed appendix, with one exception, DHS did not include DOT Division 2.3 PIH gases for which DOT uses a generic shipping name with the suffix ''N.O.S.'' DHS has done the same in this final appendix. N.O.S. refers to materials with generic descriptions (e.g., Compressed gas, n.o.s. or Compressed gas, toxic, flammable, corrosive, n.o.s. *Inhalation Hazard Zone D;* or Insecticide gases n.o.s. or Insecticide gases, toxic, flammable, n.o.s. *Inhalation hazard Zone A*). The Department has only included PIH gases that the Department of Transportation specifically names in the Hazardous Materials Table in 49 CFR 172.101. In addition, the Department has included germanium tetrafluoride.[35] While that chemical is not specifically named in the DOT Hazardous Materials Table, it is often named specifically by convention in industry. Given that it can be identified by its specific name and following a positive response from commenters as to the inclusion of this chemical, the Department decided to retain this chemical on the list.

b. STQ

DHS has eliminated the ''any amount'' STQ that it used in the proposed appendix for theft/diversion-WME chemicals. DHS developed the STQs for these chemicals in this final rule based generally upon recommendations from the Compressed Gas Association (CGA) in its comments to the proposed appendix in the IFR. The STQs for theft/diversion-WME chemicals vary based on Hazard Zone, thereby taking into account their relative toxicity. *See* 49 CFR 173.116 ''Class 2—Assignment of Hazard Zone.'' In their comments, CGA indicated that, aside from lecture bottles and sample cylinders, the minimum industry standard commercial size package for Hazard Zone A PIH gases is five (5) pounds, and the minimum industry standard commercial size package for Hazard Zone B PIH gases is fifteen (15) pounds. CGA recommended that DHS set the STQ for Hazard Zone A at any amount greater than five pounds and the STQ for Hazard Zone B at any amount greater than fifteen pounds. In this final rule, DHS has set the STQ for Hazard Zone A PIH gases, which are the most toxic of PIH gases, at fifteen (15) pounds, and the STQ for Hazard Zone B PIH gases at forty-five (45) pounds. These two STQs are the equivalent of approximately three standard commercial size packages for Hazard Zone A and B PIH gases. These two STQs represent quantities of Hazard Zone A and/or Hazard Zone B PIH gases that are likely to generate significant consequences, including the fact that portable quantities of these PIH gases may be subject to theft and/or diversion.

[30] The Australia Group is an informal group of countries, which aims to allow exporting or transshipping countries to minimize the risk of assisting chemical and biological weapon proliferation. See *http://www.australiagroup.net/en/control_list/precursors.htm.*

[31] The STQ for the chemical from the Australia Group, triethanolamine hydrochloride, is 220 pounds.

[32] DOT defines a ''gas poisonous by inhalation'' in 49 CFR 173.115(c) and assigns hazard zones in 49 CFR 173.116(a).

[33] One Hazard Zone D chemical, ethylene oxide, is listed in the final Appendix A, because of its inclusion on EPA's RMP list. DHS lists ethylene oxide as a release-toxic but not as a theft-WME chemical.

[34] Title VI of the Clean Air Act (42 U.S.C. 7671, *et seq.*), which addresses stratospheric ozone protection, directs EPA to establish a program for phasing out production and use of ozone-destroying chemicals, including methyl bromide. These requirements are in furtherance of the United States' obligations, as a signatory to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, to limit the production and use of such chemicals. In 2000, EPA issued a direct final rulemaking, which allowed for the phased reduction in methyl bromide consumption and which extended the phase-out to 2005. *See* 65 FR 70795 (November 28, 2000). EPA has further extended the phase-out program until alternatives for all critical uses of the chemical are available. *See* 71 FR 38325 (July 6, 2006). *See also http://www.epa.gov/ozone/mbr/index.html.*

[35] The DOT shipping name for germanium tetrafluoride is ''Liquefied Gas, Toxic, Corrosive, n.o.s. (Germanium Tetrafluoride)'' if liquid is present and ''Compressed Gas, Toxic, Corrosive, n.o.s. (Germanium Tetrafluoride)'' if no liquid is present.

The STQ for Hazard Zone C PIH gases is 500 pounds. That amount is equivalent to approximately five standard industrial gas cylinders. Hazard Zone C PIH gases are less toxic than those in Hazard Zones A and B, and DHS therefore has concluded that it is unlikely for amounts less than 500 pounds to generate a high degree of consequence.

These general STQ rules apply to all theft/diversion-WME chemicals except in two instances. First, DHS has established specialized provisions for chlorine, which are discussed below in section II(D). Second, DHS set the STQ for two Hazard Zone C PIH gases (hydrogen fluoride and boron trichloride) at the STQ associated with Hazard Zone B PIH gases—i.e., 45 pounds instead of 500 pounds. Although DOT categorizes these substances as Hazard Zone C, industry generally treats these gases as Hazard Zone B gases because of their toxic properties. Industry commenters recommended, and DHS agreed, that the toxic properties of these chemicals warrant a higher degree of scrutiny and unique STQ in the security context.

c. Minimum Concentration (Mixtures)

If a theft/diversion-WME chemical of interest is present in a mixture at or above the minimum concentration amount listed in the Minimum Concentration column of the appendix, the facility shall count the entire amount of the mixture toward the STQ unless a specific minimum concentration is assigned in the Minimum Concentration column of Appendix A to part 27, in which case the facility should count the total quantity of all commercial grades of the chemicals at the specified minimum concentration. *See* § 27.203(b)(2). DHS derived the minimum concentrations from the Compressed Gas Association Standard for Classification of Toxic Gas Mixtures, CGAP–20–2003.

5. Theft/Diversion-EXP/IEDP

a. Chemicals

To identify chemicals that could be subject to theft or diversion for purposes of creating an explosion or producing an Improvised Explosive Device (IED),[36] the Department considered several sources. For proposed Appendix A, the Department included certain DOT Class 1 explosives.[37] The Department also included IED precursors that the National Research Council recommended for additional control in its report titled ''Containing the Threat from Illegal Bombings: An Integrated National Strategy for Marking, Tagging, Rendering Inert, and Licensing Explosives and Their Precursors.'' [38]

While the universe of theft/diversion-EXP/IEDP chemicals has remained substantially the same since the IFR, DHS has added a few chemicals (including IED precursors) and deleted a few chemicals at the recommendation of the FBI.[39] The FBI Explosives Unit [40] recommended the inclusion of certain chemicals based on their experience investigating IED attacks and evaluating IED components.

Of note in the realm of deleted chemicals (especially to the many commenters who requested their removal), the Department no longer includes acetone and urea in the appendix. Given the Department's inclusion of concentrated nitric acid and concentrated hydrogen peroxide in the appendix, the Department does not believe it is necessary to include acetone and urea. The Department is concerned about these chemicals, because they can be mixed to create explosives (e.g., Triacetone Triperoxide (TATP) includes both acetone and hydrogen peroxide). The Department is electing, therefore, to list the more critical chemicals (i.e., concentrated hydrogen peroxide and concentrated nitric acid) of those mixtures. The effect is to target regulation to facilities possessing chemicals of interest to terrorists in order to thwart terrorism.

The Department's decision is supported by the conclusions of the National Research Council report. In pertinent part, the National Research Council provides:

It is not feasible to control all possible chemical precursors to explosives. Efforts to control access should focus on the chemicals identified by the committee as current candidates for control in the United States. These chemicals are ammonium nitrate, sodium nitrate, potassium nitrate, nitromethane, concentrated nitric acid, concentrated hydrogen peroxide, sodium chlorate, potassium chlorate, and potassium perchlorate. Urea and acetone also meet the criteria for control but are adequately controlled if access to nitric acid and hydrogen peroxide is limited.[41] (Emphasis in the original.)

In its discussion of chemicals that pose the greatest threat in the United States because of their ability to be used to improvise bombs, the National Research Council further discussed nitric acid/urea and hydrogen peroxide/acetone:

Urea can be reacted with nitric acid to produce the explosive urea nitrate, the material used in the World Trade Center bombing. Urea is a nondetonable, ubiquitous, and inexpensive material with an annual production volume in North America of 19 million short tons (IFDC, 1997). It is used extensively as a fertilizer, as a noncorrosive ice-melting material at public facilities and in private homes, and as a reagent in many chemical processes. Because urea is a relatively innocuous chemical with a wide range of uses, the committee believes that preventing access to urea nitrate for illegal purposes is more easily achieved by controlling the other critical component required to make an explosive: nitric acid.[42]

Nitric acid, which is toxic and highly corrosive, has many industrial applications but is not commonly available to the general public. For that reason, the committee believes that sales of nitric acid are much more traceable than those of urea. Furthermore, controls on nitric acid would provide greater leverage in efforts to prevent bomb attacks than would controls on urea, because nitric acid can be reacted with a wide range of organic materials (e.g., cellulose, glycerine, and amines) to produce explosives. Although much of the nitric acid produced is used in on-site chemical processes, a large amount is shipped in tank cars to chemical processing plants or packaged in drums for sale to commercial businesses such as etchers and metal platers. All of these uses are amenable to good sales record keeping. The committee believes that such sales records are probably adequate for current law enforcement needs.[43]

Hydrogen peroxide can be reacted with acetone to make the powerful explosive TATP, which has been used by terrorists abroad but not thus far to any great extent in the United States. It can be made in large

[36] An IED is a device fabricated in an improvised manner that incorporates in its design explosives or destructive, lethal, noxious, pyrotechnic, or incendiary chemicals. It generally includes a power supply, a switch or timer, and a detonator or initiator.

[37] *See* discussion in section II(C)(2) above.

[38] The National Academy Press published the Report, which is available online at *www.nap.edu.* The National Research Council had appointed ''The Committee on Marking, Rendering Inert, and Licensing of Explosive Materials'' to address areas related to explosives. This final report presents the Committee's conclusions and recommendations.

[39] DHS added aluminum (powder), magnesium (powder), nitrobenzene, potassium permanganate, sodium azide, sodium hydrosulfite, and zinc hydrosulfite.

[40] As stated on the FBI website, the FBI Explosives Unit ''examines evidence associated with bombings. Explosives examinations involve the identification and function of the components used in the construction of incendiary as well as improvised explosive devices. In addition, the Unit performs chemical analyses to determine the type of explosive used in an improvised explosive or incendiary device, which includes bulk substance analysis as well as analysis of the residues left behind when an explosive detonates.'' See *http://www.fbi.gov/hq/lab/org/eu.htm.*

[41] *See* the Executive Summary of the National Research Council Report titled ''Containing the Threat from Illegal Bombings: An Integrated National Strategy for Marking, Tagging, Rendering Inert, and Licensing Explosives and Their Precursors,'' p. 15.

[42] *Id.* at p. 147.

[43] *Id.* at p. 147.

quantities but is extremely unstable and dangerous to handle.[44]

Acetone, one of the most common organic solvents, can be purchased readily from many sources in large quantities. As in the case of nitric acid and urea, controlling access to TATP is achieved more readily by limiting the availability of hydrogen peroxide than by controlling acetone. As with controls on nitric acid, controls on hydrogen peroxide would be preferred because hydrogen peroxide can be reacted with chemicals other than acetone to produce explosives.[45]

The Department, after consultation with the FBI Explosives Unit, finds persuasive the conclusion of the National Research Council and removed acetone and urea from Appendix A. The Department also removed nitro urea and urea nitrate, neither of which is commercially available.

With respect to hydrogen peroxide, the Department has adjusted the concentration. In the proposed appendix, the Department listed a concentration of ''at least 30%.'' In this final appendix, the Department has increased the concentration for hydrogen peroxide to 35%, a common technical and food grade of hydrogen peroxide. The original 30% concentration was based on IED precursor regulations proposed in Canada. The Department received comments from various industries about the importance of hydrogen peroxide and the most common commercial grades of the chemicals. In consultation with the FBI Explosives Unit, the Department has revised the concentration it set for hydrogen peroxide, believing that this change in concentration will not significantly increase the likelihood of missing a high risk chemical facility through the part 27 program.

b. STQ

DHS has changed the STQ for theft/diversion-EXP/IEDP chemicals from the proposed amount of 2,000 pounds to 400 pounds. This new STQ equals the amount that is likely required to produce a small, vehicle-borne IED (VBIED). This STQ applies to all theft/diversion-EXP/IEDP chemicals except for (1) ammonium nitrate, which the Department discusses below in section II(D)(3) and for (2) a few chemicals where DHS used a different STQ at the recommendation of the FBI Explosives Unit. Specifically, DHS set the STQ for aluminum powder, magnesium powder, and nitrobenzene at 100 pounds instead of 400 pounds, because DHS believes that the effect of these particular chemicals at these quantities would have the same effect as the other theft/diversion-EXP/IEDP chemicals at 400 pounds.

c. Minimum Concentration (Mixtures)

As provided in § 27.204(b)(3), a facility shall count toward the STQ the total quantity of all commercial grades of a theft/diversion-EXP/IEDP chemical at the facility unless a specific minimum concentration is assigned in the Minimum Concentration column of Appendix A to part 27, in which case the facility should count the total quantity of all commercial grades of the chemicals at or above the specified minimum concentration. There are specified minimum concentrations for a few of the theft/diversion-EXP/IEDP chemicals, such as hydrogen peroxide (35%) or ammonium nitrate (nitrogen concentration of 23% nitrogen or greater). DHS has added a definition of ''A Commercial Grade'' (ACG) to § 27.105. ACG refers to any quality or concentration of a chemical of interest offered for commercial sale that a facility uses, stores, manufactures, or ships.

6. Sabotage/Contamination

a. Chemicals

Sabotage/contamination refers to those chemicals that, if mixed with other readily-available materials, have the potential to create significant adverse consequences for human life or health. The Department's list of sabotage/contamination chemicals is substantially the same in the final appendix as it was in the proposed appendix.

Sabotage/contamination chemicals currently include those chemicals that are capable of releasing a poisonous gas when exposed to water. In identifying the chemicals for this category, the Department referred to the table of ''Water-Reactive Materials Which Produce Toxic Gases'' in the 2004 Emergency Response Guidebook (ERG 2004).[46] The ERG 2004 is a joint publication of the U.S. Department of Transportation, Transport Canada, and the Secretariat of Communications and Transportation of Mexico. These materials are listed in the ERG 2004 as incompatible with water, because they produce large amounts of Toxic by Inhalation[47] gases when exposed to water.

b. STQ

In the proposed appendix, the STQ for sabotage/contamination chemicals was 2,000 pounds. The STQ now listed for sabotage/contamination chemicals is A Placarded Amount (APA). DHS added a definition of APA to § 27.105, providing that it refers to the STQ for a sabotage/contamination chemical of interest, as calculated in accordance with § 27.203(d). Section 27.203(d) provides that ''[a] facility meets the STQ for a sabotage/contamination chemical of interest if it ships the chemical and is required to placard the shipment of that chemical pursuant to the provisions of subpart F of 49 CFR part 172.'' Subpart F of 49 CFR part 172 contains the DOT placarding requirements within the DOT Hazardous Materials regulations.

c. Minimum Concentration (Mixtures)

As provided in § 27.204(c), a facility shall count toward the STQ the total quantity of all commercial grades of a sabotage/contamination chemical that it possesses unless a specific minimum concentration is assigned in the Minimum Concentration column of Appendix A to part 27, in which case the facility should count the total quantity of all commercial grades of the chemicals at the specified minimum concentration. DHS has added a definition of ''A Commercial Grade'' (ACG) to § 27.105. ACG refers to any quality or concentration of a chemical of interest offered for commercial sale that a facility uses, stores, manufactures, or ships.

D. Chemicals With a Specialized Approach

1. Propane

Propane, a release-flammable chemical, is one of the many RMP flammable chemicals that DHS adopted from EPA's RMP list. In the IFR, the proposed STQ for propane (an RMP flammable) was 7,500 pounds, which is seventy-five percent of the RMP TQ. Using the revised general DHS rule for release-flammables, the STQ for propane would be 10,000 pounds. DHS, however, set the STQ for propane in this final rule at 60,000 pounds. Sixty thousand pounds is the estimated maximum amount of propane that non-industrial propane customers, such as restaurants and farmers, typically use. The Department believes that non-industrial users, especially those in rural areas, do not have the potential to create a significant risk to human life or health as would industrial users. The Department has elected, at this time, to focus efforts on large commercial

[44] *Id.* at p. 148.

[45] *Id.* at p. 148.

[46] The table is located on pages 344–348 of the ERG 2004, which is available on the Web at *http://hazmat.dot.gov/pubs/erg/gydebook.htm.*

[47] Toxic by Inhalation (TIH) is synonymous with Poisonous by Inhalation (PIH).

propane establishments but may, after providing the public with an opportunity for notice and comment, extend its part 27 screening efforts to smaller facilities in the future. This higher STQ will focus DHS's security screening effort on industrial and major consumers, regional suppliers, bulk retail, and storage sites and away from non-industrial propane customers. The minimum concentration and mixtures provisions for propane are the same as for all other release-flammables.

Pursuant to § 27.203(b)(3), facilities need not include propane in tanks of 10,000 pounds or less when calculating whether a facility has a total inventory of 60,000 pounds. DHS included this provision, in part, because of its desire to exclude farmers and agricultural users of propane who routinely have three or more propane tanks [48] for heating their homes and/or their chicken/turkey houses. If DHS listed propane at 10,000 pounds (the STQ for all other release-flammable chemicals), many more entities, including homeowners, farmers, and small businesses, would have to complete and submit the Top-Screen. DHS does not expect that such dispersed inventories, often located away from population centers, are likely to meet its definition of high risk chemical facilities. DHS believes that the revised approach toward propane is better geared toward identifying and addressing the risks associated with major propane inventories.

2. Chlorine

In the proposed appendix, DHS set the STQ for chlorine at 1,875 pounds. There are two security issues associated with chlorine, each with its own STQ. Using the DHS baseline rules, the STQ for chorine as a release-toxic would be 2,500 pounds,[49] and the STQ for chlorine as a theft/diversion-WME chemical would be 45 pounds.[50] Consistent with all other release-toxic chemicals, DHS set the release-toxic STQ for chlorine at 2,500 pounds and requires facilities to use the calculation and mixtures provisions that apply to all other release-toxic chemicals. *See* §§ 27.204(a)(1) and 27.203(b)(1)(i)–(ii).

DHS, however, developed a unique approach for chlorine where it presents a theft/diversion-WME security issue. Instead of 45 pounds, DHS established a higher STQ for the theft-WME STQ for chlorine—500 pounds.[51] Five hundred pounds is the equivalent of five standard 100-pound cylinders. (The minimum concentration for chlorine that presents a theft-WME security issue is 9.77%.) Setting the theft/diversion-WME STQ for chlorine at 45 pounds would have been both burdensome for numerous manufacturers (which are reliant on chlorine as a starting material) and difficult for DHS to effectively implement, manage, and enforce. The U.S. produces 11 million metric tons of chlorine per year. The vast majority of chlorine production is used for processing a wide range of paper, plastic, textile, medicine, insecticides, paint, and other materials. Chlorine is also used in water and wastewater treatment. While most chlorine is consumed at the facility where it is produced, four million metric tons are shipped annually in small containers, one-ton containers, and cargo tank motor vehicles, and tank cars across the country.

Given the enormous production, transportation, and importance of chlorine, DHS increased the theft/diversion-WME STQ for chlorine from 45 pounds to 500 pounds. DHS believes that quantities less than 500 pounds would capture facilities that are unlikely to present significant consequences. This amount is considered a portable and transportable amount that could be diverted or stolen. Overall, DHS's approach toward chlorine recognizes that chlorine is distinct from other WME precursors in terms of its broad utility and availability.

3. Ammonium Nitrate (AN)

In proposed Appendix A, the Department identified only one form of ammonium nitrate (nitrogen concentration of 28%–34%) and set the STQ at 2,000 pounds. Based on the consideration of comments, the Department has revised its approach in this final appendix, identifying AN in two forms: (1) The DOT Division 1.1 explosive found in 49 CFR 172.101 and (2) the more common form frequently used as a fertilizer. DHS assigned a STQ to each form. Given the breadth of AN's use and history, DHS has crafted a specialized approach to address this chemical's specific security concerns.

The first entry for AN in the appendix addresses AN as an explosive. The Department has listed the DOT Division 1.1 explosive: Ammonium nitrate [with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance].[52] As an explosive, AN presents two security issues: Theft/diversion-EXP/IEDP and release-explosive. DHS is treating the possible theft/diversion of this form of AN in the same way that it is treating all other DOT Division 1.1 explosives.[53] Where a facility has larger amounts of AN as an explosive, there may also be release hazards. As that is the case, DHS has set the STQ for the possible release of AN as an explosive at 5,000 pounds.[54] That STQ is the same TQ that EPA had set for DOT Division 1.1 explosives when EPA included such substances in its RMP rule.

The second entry for AN in the appendix addresses the more common form of AN in solid form with a nitrogen concentration of 23% or greater. This form of AN is largely used in the agricultural community and in amounts that typically exceed 400 pounds (the STQ for all other theft/diversion-EXP/IEDP chemicals). Given the circumstances surrounding its use (i.e., extensive use in the agricultural industry), DHS has set the STQ for this form of AN at 2,000 pounds. (This form of AN in a mixture will count toward the STQ in a minimum concentration of 33% or more.) This STQ is geared toward ensuring that DHS secures AN inventories at major manufacturing and distribution facilities, as opposed to individual farmers involved mainly in the application of AN. DHS believes that terrorists are interested in maximizing death and injuries from an attack and are, therefore, less interested in attacking facilities in rural areas or other areas with low population densities.

DHS referenced many sources in developing this approach. In addition to considering DOT and EPA regulations, DHS consulted with Departmental experts, such as the DHS Office for Bombing Prevention, which administers the Bomb Making Awareness Program, and other federal experts, such as the FBI Explosives Unit. The Department's

[48] Typical tank sizes include approximately 2,205 pounds and 4,418 pounds.

[49] DHS used the RMP TQ for release-toxic chemicals, and the RMP TQ for chlorine is 2,500 pounds.

[50] Chlorine is a DOT Division 2.3 PIH gas in Hazard Zone B, and the baseline STQ for Hazard Zone B PIH gases is generally 45 pounds.

[51] As with all theft/diversion chemicals, facilities must only count toward the theft-WME STQ for chlorine those quantities of chlorine in transportation packagings. *See* § 27.203(c).

[52] The entry for this form of AN can be found in the DOT Hazardous Materials Regulations at 49 CFR § 172.101.

[53] Where AN as an explosive presents a theft-EXP/IEDP security issue, the STQ is 400 pounds, and a facility is expected to include all amounts of ACG of AN when determining whether it meets or exceeds the STQ. And, per § 27.203(c), in calculating this theft STQ, facilities need only count amounts in transportation packagings.

[54] Consistent with the mixtures provision for all release-explosives (*see* § 27.204(a)(3)), facilities are expected to include all amounts of ACG of AN in calculating the STQ.

approach was further supported by international resources, including the British Health and Safety Executive's publication titled ''Storing and Handling Ammonium Nitrate'' and Canada's proposed regulations on Restricted Components issued pursuant to Canada's Explosives Act.[55]

E. Technical Corrections

DHS made several technical corrections to the chemicals listed in Appendix A, and those corrections, many of which are highlighted below, improve the accuracy of the list. Many commenters assisted DHS in identifying these items. DHS removed the entries for certain chemicals (because they were synonyms for already-listed chemicals) and instead listed them as synonyms in the new ''Synonyms'' column.[56] DHS also corrected the Chemical Abstract Service (CAS) number for several chemicals[57] and the spelling and/or name of other chemicals.[58]

In addition, DHS made chemical-specific edits. For example, DHS separated the entry for ''hydrogen fluoride/hydrofluoric acid (conc. 50% or greater)'' into two entries. DHS had included them as one listing in the proposed listing, because they were included as such on EPA's RMP list. As they are two different chemicals (one is a gas and the other is a fuming liquid), albeit with the same CAS number, DHS has separated them into two entries.[59]

As another example, DHS clarified the inclusion of various explosive chemicals. The Department added RDX/cyclotrimethylenetrinitramine (CAS #121–82–4), which had been inadvertently omitted in the proposed appendix. The Department is including this DOT Division 1.1 explosive, because the Department is including all such DOT Division 1.1 explosives, given the risk of their theft or diversion for terrorism purposes. The Department now lists HMX under its common name (i.e., HMX); in the proposed appendix, the Department had listed HMX under its chemical name (cyclotetramethylenetetranitramine). Note, however, that the Department has included HMX's chemical name in the synonym column for the HMX entry.

III. Discussion of Comments

In the Interim Final Rule, DHS sought comment on the proposed list of DHS Chemicals of Interest in Appendix A to part 27. DHS received approximately 4,300 public comments, and almost 4,000 of those comments were related to the issues surrounding propane. Commenters to the proposed appendix included trade associations, citizens, companies, universities, hospitals and research facilities, and members of Congress. In the sections below, DHS provides a topical summary of the comments and responses to those comments.

A. Specific Chemicals or Types of Chemicals

1. In General

Comment: Commenters suggested that DHS should remove chemicals that are widely used in the U.S., (e.g., acetone, chlorine, propane, sodium nitrate, urea), asserting that such chemicals should not be regulated as a chemical security risk. Some argued that commonly available chemicals are unlikely targets of theft from a facility. Other commenters provided specific arguments why DHS should not regulate commonplace chemicals: Carbon monoxide is a common byproduct that can occur frequently in everyday locations (e.g., from a car, heater, or furnace). Hydrogen sulfide is a natural byproduct that is easily generated, whether in labs during reactions or from geothermal facilities.

Yet other commenters thought that there was only limited harm from other chemicals, and so DHS should not regulate those chemicals. For example, potassium nitrate and sodium nitrate do not ignite on their own, therefore the explosive hazard from those chemicals is reduced, and so DHS should not regulate these chemicals on their own. And, the flashpoint of triethanolamine, at 212 degrees Fahrenheit, is so high that it would have to be extremely hot for the chemical to heat up, ignite, and become an explosive hazard.

Response: The Department has included the chemicals of interest in Appendix A due to their potential, when used as part of an attack, to create significant human life or health consequences. Each of these chemicals presents at least one of the security issues described in section II above. Not only has the Department carefully weighed the value of including any given chemical, but the Department has clearly defined the parameters for each chemical. In this final rule, the Department has replaced the ''any amount'' STQs (that it proposed in the IFR) with numerical quantities. The Department has also provided instruction on how a facility should calculate an STQ and how a facility should consider chemicals of interest in a mixture. *See* §§ 27.203 and 27.204.

In addition, the Department reiterates that possession of a chemical of interest listed in Appendix A does not equate to coverage under the standards in part 27. Possession of a chemical of interest at the listed STQ is merely a trigger for a facility to complete and submit a Top-Screen. Furthermore, when a facility completes a Top-Screen, that information becomes but one factor in the Department's determination of whether a facility presents a high level of security risk.

In response to the comments about specific chemicals, the Department replies as follows: DHS removed carbon monoxide from the list as part of its larger decision to remove DOT Division 2.3 PIH gases in Hazard Zone D. Carbon monoxide is a Hazard Zone D PIH gas. DHS continues to list hydrogen sulfide on the list, because it meets the Department's criteria for both release-toxic and theft/diversion-WME chemicals. EPA lists hydrogen sulfide as a release-toxic on its RMP list. Aside from the exceptions noted above, DHS has included as release-toxics in Appendix A all of the toxics on EPA's RMP list. Also, DOT identifies hydrogen sulfide as a Division 2.3 PIH gas, Hazard Zone B. Aside from the exceptions noted above, DHS has included all of the DOT Division 2.3 PIH gases as theft/diversion-WME chemicals in Appendix A. DHS, however, excludes naturally occurring sources (such as geothermal operations) of hydrogen sulfide pursuant to § 27.203(a)(9). DHS continues to list potassium nitrate and sodium nitrate, although they are

[55] The Explosives Regulatory Division (ERD) of Natural Resources Canada has posted the proposed regulation on their Web site at *http://www.nrcan.gc.ca/mms/explosif/pdf/RestrictedComp_e.pdf.*

[56] This includes, for example, calcium dithionite (already listed as calcium hydrosulfite), sodium dithionite (already listed as sodium hydrosulfite); zinc dithionite (already listed as zinc hydrosulfite); and dimethyl phosphoramido-dichloridate (already listed as N, N-dimethyl phosphoramidic dichloride).

[57] This includes, for example, chromium oxychloride; DF, dinitroresorcinol; dipicrylamine [or] hexyl (formerly listed as hexanitrodiphenylamine, which is now listed as a synonym); hexyltrichlorosilane; magnesium aluminum phosphide (now listed separately as magnesium phosphide and aluminum phosphide); octonal; octolite; sodium phosphide; strontium phosphide; torpex (formerly listed as hexotonal); and trinitronaphthalene.

[58] This includes, for example, 1-pentene; boron trifluoride (and its synonym borane, trifluoro); boron trifluoride compound with methyl ether (1:1); pentaerythritol tetranitrate; propyl chloroformate; sulfur tetrafluoride (and its synonym sulfur fluoride); and vinyl acetylene.

[59] For hydrofluoric acid (conc. 50% or greater), which presents a release-toxic security issue, DHS assigns a STQ of 1000 pounds and minimum concentration of 50% or greater. For hydrogen fluoride (anhydrous), when it presents a release-toxic security issue, DHS assigns a STQ of 1,000 pounds and a minimum concentration of 1.00%. For hydrogen fluoride (anhydrous), when it presents a theft-WME security issue, DHS assigns a STQ of 15 pounds and a minimum concentration of 42.53%.

common oxidizers, they could be used to create IEDs. Finally, DHS continues to list triethanolamine, because it can be easily converted into a chemical weapon, not because of the flashpoint or other physical characteristics of the chemical itself.

Comment: Commenters remarked on how some Appendix A chemicals of interest, such as acetone, propane, and urea, are preferable to possible substitutes not on Appendix A, due to their comparatively lower toxicity or environmental impact. In particular, they noted that the inclusion of certain chemicals means that facilities, in an attempt to avoid going through the screening process, will transition away from Appendix A chemicals and possibly toward more dangerous substitutes. For example, in lieu of acetone, facilities might transition to the use of more toxic solvents.

Response: With respect to the specific chemicals mentioned, DHS notes that, for the reasons discussed above, DHS has removed acetone and urea from the list of chemicals, and it has substantially revised the STQ for propane. As for concerns that facilities will transition to more dangerous substitute chemicals, DHS makes the following points. Appendix A is DHS's first attempt to identify chemicals of interest around which there are serious security concerns, and the aim of Appendix A is to provide a screening tool for the DHS chemical security regulatory program. If there is a need to address different or additional chemicals in the future, DHS has the option of revising Appendix A, subject to notice and comment when appropriate, to include any different or additional chemicals. The Department also has the ability to reach out directly to facilities it believes may present a high level of security risk, even for chemicals not included in Appendix A. *See* 27 CFR 27.210(a)(1)(ii).

While facilities covered by part 27 have flexibility in deciding how to meet the part 27 requirements (for example, a facility can choose to reduce, substitute, or eliminate its inventory of an Appendix A chemical of interest at any time), DHS will, through its review of Site Security Plans and visits to facilities, determine whether facilities have adequately selected, developed, and implemented risk-based measures designed to satisfy the risk-based performance standards. *See* 27 CFR 27.225 and 27.245.

Comment: One association recommended that DHS exclude from the list anhydrous ammonia used for food refrigeration and contained in closed-loop refrigeration systems. Another individual, however, supported DHS inclusion of facilities that use anhydrous ammonia either for refrigeration during food processing and storage or as part of emission controls for coal-fired electrical generation, because such facilities are typically near population centers and transportation systems. Several other commenters urged DHS to increase the 7,500 pound STQ for anhydrous ammonia, so that it would match the TQ for other regulatory programs.

Response: As a toxic chemical utilized across industries, DHS believes that anhydrous ammonia can present a high risk and, under certain circumstances, generate major consequences for human life or health. Therefore, DHS continues to include anhydrous ammonia in the list of chemicals. DHS, however, raised the STQ for anhydrous ammonia to 10,000 pounds. That tracks the amount that EPA uses in its RMP regulation. *See* 40 CFR 68.130, Table 1. DHS expects that facilities will count toward their STQ the quantity of anhydrous ammonia stored as part of a refrigeration system in addition to the quantity of anhydrous ammonia in the actual system

Comment: Manufacturing plants pointed out that most plants need a minimum inventory of nitric acid to operate efficiently. Commenters assert that 2,000 pounds, the amount proposed in Appendix A, is too low to operate efficiently, and therefore, large numbers of manufacturing plants would have to go through the Top-Screen process. Other commenters remarked that nitric acid is included in the inventory of laboratories at colleges and universities.

Response: The Department continues to include nitric acid in Appendix A given the security risks it presents. In large quantities, nitric acid presents a release hazard, and so DHS has set the STQ at 15,000 pounds. In addition, DHS is aware that nitric acid, in smaller quantities, is useful in creating IEDs. DHS has set the STQ for divertible quantities of nitric acid (i.e., amounts in transportation packagings) at 400 pounds.

2. Propane

In proposed Appendix A, the Department included propane on the list of Chemicals of Interest (COI) with a STQ of 7,500 pounds.

Comment: DHS received almost 4,000 comments related to propane, and many of these comments disagreed with the proposed inclusion of propane and the proposed STQ for propane. There were comments from propane distributors and retailers; agricultural businesses; private citizens; and numerous small business, including forklift operators, camp grounds, parks, bakeries, and construction companies.

Agricultural businesses indicated that they use propane for multiple purposes, including heating their chicken and/or turkey houses, drying produce, or keeping livestock and farm produce warm. They indicated that many farms have multiple tanks of propane and that the regulation will impact many small, family-owned farms, which will have to complete the Top-Screen. Others pointed out that these propane tanks on farms are often separated by a significant distance or a building.

Propane distributors and retailers indicated that their main customer base is residential, commercial/industrial, motor fuel, agricultural, and wholesale. In the residential market, propane is used primarily for home heating, water heating, and cooking purposes. Many commenters stated that a significant percentage of their customer base, including residential users, would have to complete and submit a Top-Screen under the proposed threshold. They speculated that this might force propane users to shift to other more environmentally hazardous fuel sources. Retailers and distributors also claimed that customers had already begun to request the completion and submission of the Top-Screen on their behalf.

Commenters asserted that the worst case scenario of an explosion from a 1,000 gallon tank of propane is only approximately 500 feet for a 1 psi over-pressure condition. While that type of incident is enough to break windows and cause injuries due to glass shrapnel, they did not think it would be likely to cause structural damage and, hence, should not be considered as a national security threat.

Many commenters felt that that DHS had gone beyond the limitations contained in Section 550 of the Department of Homeland Security Appropriations Act of 2007, which they asserted provides that nothing in the rules can supersede other federal laws pertaining to the manufacture, distribution in commerce, use, or sale of chemicals. *See* Section 550(f). Commenters offered suggestions for revisions. Many commenters suggested that DHS should incorporate the statutory exemptions from EPA's Risk Management Program rules, including the statutory exemptions from the Chemical Safety Information, Site Security, and Fuels Regulatory Relief Act (Pub. L. 106–40). Commenters also proposed that DHS add a footnote to the Appendix A entry for propane, indicating that regulated entities need not count all propane storage tanks of

less than 1,200 gallons toward the threshold amount.

Response: The Department continues to include propane in the list of chemicals in Appendix A. The Department has not adopted the statutory exemption from the Chemical Safety Information, Site Security, and Fuels Regulatory Relief Act (Pub. L. 106–40). That Act amended the Clean Air Act to remove flammable fuels from the list of substances with respect to which reporting and other activities are required under the risk management plan program, and for other purposes. EPA codified that provision at 40 CFR 68.126. Congress did not include such a provision exempting propane in the authorizing legislation for part 27, and so DHS has not exempted propane from part 27. The Department disagrees with the statement that the Department has gone beyond the limitations contained in Section 550. The listing of propane in Appendix A merely triggers the requirement that a facility (possessing the listed amount) complete and submit a Top-Screen to DHS. That, in no way, supersedes any other federal law regulating manufacture, sale, or use of propane.

The Department, however, has changed several provisions related to propane, as discussed in section II(D)(1). The Department believes its approach to securing significant stocks of propane is informed, manageable, and proportionate to its existing use and risk profile. In response to the comment about propane storage tanks, the Department notes that, per § 27.203(b)(3), DHS will not require facilities to include quantities of propane in tanks of 10,000 pounds or less.

3. Chlorine

In proposed Appendix A, the Department included chlorine on the list with an STQ of 1,875 pounds.

Comment: Many commenters provided input on DHS's inclusion of chlorine on the COI list. The majority of commenters encouraged DHS to use the EPA RMP TQs for all RMP release-toxic chemicals, including chlorine. They argued that the RMP TQ of 2,500 pounds is a well-reasoned number and that the chemical industry is familiar with that number. As an additional argument against an STQ of 1,875 pounds, commenters argued that large amounts of chlorine are readily available through production or purchase given its diversified uses in and across the water treatment, electronics, steel, pharmaceutical, and plastics industries. Similarly, other commenters asserted that water and wastewater treatment facilities possess chlorine, however those locations are not chemical facilities in a traditional sense and therefore they are lower risk locations.

By contrast, one individual commenter recommended a lower STQ for chlorine. The commenter suggested that DHS should lower the STQ for chlorine to 150 pounds, which is the size of a commonly available commercial cylinder. The commenter was concerned that the theft of small containers of chlorine would enable a terrorist to use chlorine gas in attacks on public gatherings.

Response: While the Department recognizes the importance of chlorine to the Nation's critical infrastructure and key resources, and especially the chemical sector, the Department also realizes that the theft/diversion of chlorine to develop a WME is a serious security concern. Recent terrorist incidents involving chlorine cylinders in Iraq have reinforced this concern. To balance these concerns, the Department has developed a revised approach toward chlorine, which is discussed in section II(D)(2) above. With this approach, the Department hopes to facilitate the introduction and implementation of security standards that prevent the theft or diversion of chlorine for terrorist purposes without unduly interfering with the continued, legitimate production, transportation, and use of chlorine. In response to the comment about public water systems and water treatment systems, the Department notes that it has excluded those systems consistent with the statutory exclusion in Section 550 (*see* § 27.110(b)).

4. Ammonium Nitrate (AN)

In proposed Appendix A, the Department included ammonium nitrate (nitrogen concentration of 28%–34%) on the list of COI with a STQ of 2,000 pounds.

Comment: There were several comments about AN with most commenters supporting the inclusion of AN on the COI list. Several commenters remarked on the reduced availability of AN fertilizer due to liability concerns over its use in terrorism. Commenters expressed differing opinions on the percentage of nitrogen in AN that DHS should consider for purposes of preventing AN's use as an explosive precursor. Commenters requested clarification of the STQ and whether it applied to solid, liquid, and/or mixtures of AN.

Response: DHS revised its approach toward ammonium nitrate, as discussed above in section II(D)(3). This revised approach recognizes that AN is integral to the agriculture and explosives industries, yet also seeks to satisfy the DHS mandate to enhance the security of facilities that present a high level of risk.

5. Acetone and Urea

In proposed Appendix A, the Department included acetone and urea on the list, each with an STQ of 2,000 pounds.

Comment: The Department also received a large number of comments on acetone and urea. Commenters from a wide array of industries remarked on the important uses and widespread availability of these two chemicals. Commenters noted that, while other regulatory regimes cover acetone and urea, they typically do so for amounts lower than the proposed STQ of 2,000 pounds.

Response: The Department's initial concerns around acetone and urea centered on its potential theft and diversion for use as an explosives precursor. After considering the comments received and consulting with expert sources, including the FBI Explosives Unit and the report produced by the National Research Council, the Department does not believe that acetone and urea need to be tracked as closely the Department tracks other explosives precursors, especially concentrated hydrogen peroxide and nitric acid. The Department has removed acetone and urea from the list of Chemicals of Interest in Appendix A.

6. Chemical Weapons (CW) and Chemical Weapons Precursors (CWP)

Comment: While commenters supported the Department's reference to the Schedules of chemicals from the CWC, commenters generally noted that applying an STQ of ''any amount'' for all CWC chemicals was unnecessarily low. With the exception of Schedule 1 chemicals, which are weapons and therefore merit a relatively low STQ, commenters thought that the ''any amount'' STQ would create unreasonable compliance challenges for facilities. Commenters urged DHS to use the CWC Schedule 2 TQs for Schedule 2 CW/CWP chemicals. Commenters also remarked on the widespread commercial use of triethanolamine (a Schedule 3 chemical) in and across the chemical, personal care, and consumer products industries.

Response: The Department has replaced all ''any amount'' STQs for theft/diversion-CW/CWP chemicals with numerical quantities. The Department did not use the CWC TQs for Schedule 2 chemicals because those

amounts are too high. Those higher amounts are designed to prevent the development of state-level chemical weapons programs, not to prevent acts of chemical terrorism. DHS identified the STQ for Schedule 2 chemicals (at 2.2 pounds) by identifying how much one would need of the chemical to convert it easily into a weapon using simple chemistry. DHS included triethanolamine and several other Schedule 3 chemicals in the final appendix due to the ease with which they may be weaponized.

7. Explosives

Comment: The American Pyrotechnics Association requested that DHS remove four oxidizers (ammonium perchlorate greater than 15 microns in size, potassium chlorate, potassium nitrate, and potassium perchlorate) from the list of chemicals in Appendix A. The American Pyrotechnics Association explained that, while these chemicals are used in pyrotechnic mixtures, they would neither create a highly toxic cloud nor could they be used in an explosive, flammable, or reactive manner until they were properly blended with an energetic fuel. In order to create an oxidizer and fuel bomb, one must go through extensive and difficult steps to obtain the materials and then must have the proper training to mix the chemicals in the proper ratio. In other words, terrorists would have to complete extensive measures to secure chemicals that would do very little damage. Commenters noted that neither DOT nor ATF classify the four oxidizers as explosives, and so therefore DHS should not either.

Response: DHS has considered the American Pyrotechnics Association's comments and, based on consultations with expert sources (including the FBI Explosives Unit) the Department has determined that it is still desirable to include these four oxidizers on the list of chemicals in Appendix A. DHS is including ammonium perchlorate on the list, because it is a DOT Class 1, Division 1.1 explosive that presents two security issues (see section II(C) above): theft/diversion-EXP/IEDP and release-explosive. It is at risk of theft and misuse for making explosives, and it could present a release hazard from a successful attack on a facility with a large (5,000 pounds or greater) inventory.

DHS is including the three potassium compounds (potassium chlorate, potassium nitrate, and potassium perchlorate), because they are IED precursors that warrant enhanced security. The National Research Council listed these chemicals in its report titled *Containing the Threat from Illegal Bombings: An Integrated National Strategy for Marking, Tagging, Rendering Inert, and Licensing Explosives and Their Precursors*. The FBI's Explosives Unit has validated such conclusions for DHS.

8. Hydrogen Peroxide

Comment: Given the availability of acetone, one commenter requested that DHS remove acetone from the list and retain hydrogen peroxide at 30%, if DHS was concerned about these chemicals being misused to make Triacetone Triperoxide (TATP). Commenters from the food, feed, steel, cleaning, and other industries remarked on the varied uses for commercial strength hydrogen peroxide as well as hydrogen peroxide formulations. The majority of commenters recommended that DHS adopt OSHA's and EPA's standard approach to listing hydrogen peroxide at a 52% concentration under their Process Safety Management (PSM) regulations and Risk Management Program (RMP), respectively.

Response: DHS listed hydrogen peroxide in the proposed Appendix A and continues to list it as a theft/diversion-EXP/IEDP chemical in final Appendix A because of its proven potential as an IEDP. In the final appendix, the Department listed ''hydrogen peroxide (concentration of at least 35%)'' on the list of chemicals and also set the minimum concentration for hydrogen peroxide at 35%. For a discussion of the Department's approach to hydrogen peroxide, see section II(C)(5) above.

Commenters have requested that DHS use a 52% concentration for hydrogen peroxide, which they assert would be consistent with certain OSHA and EPA standards. While DHS understands industry's preference for consistent rules across federal agencies, DHS notes that DHS's mandate is distinct from other federal agencies that already regulate hydrogen peroxide. Both OSHA and EPA are concerned with accidental release and/or the detonation of hydrogen peroxide and so regulating concentrations of 52% or greater is reasonable given their mandates. DHS is charged with ensuring effective security at high risk chemical facilities. The security issue around hydrogen peroxide, a common IED precursor, demanded that DHS identify the concentration at which hydrogen peroxide is potentially useful to terrorists as an IED precursor. DHS, in consultation with the FBI, has determined that concentration to be at or above 35%. In any event, setting the Appendix A concentration at 35% for triggering the Top-Screen requirements in no way precludes any facility from meeting OSHA or EPA standards.

B. Coverage of Appendix A

1. Colleges and Universities

Comment: Colleges, universities, and university medical centers; associations that represent these institutions; and individuals associated with such institutions requested that DHS exempt these institutions or modify the rule to address the use of chemicals of interest at these institutions. Many colleges and universities endorsed the comments of the Campus Safety Health and Environmental Management Association (CSHEMA), which asserted that chemicals of interest do not pose a significant risk when they are widely dispersed in many locations, and in extremely small quantities per location, as is typical with colleges and universities. CSHEMA contended that DHS must not have intended to include colleges and universities given DHS's estimate of the number of affected facilities. CSHEMA also asserted that Appendix A imposes a heavy burden on colleges and universities and that the task of submitting a Top-Screen will be onerous for colleges and universities; in particular CSHEMA asserts that the time and cost burden of complying with the Top-Screen requirement will be exponentially higher than that which DHS estimated. CSHEMA made several recommendations; namely, that DHS replace all ''any amount'' STQs with a numeric quantity (CSHEMA suggested a minimum STQ of 100 pounds). CSHEMA also recommended that DHS exclude chemicals in containers of one pound or less and that DHS create a per-laboratory STQ.

Other commenters provided similar comments. They explained that Appendix A includes numerous chemicals of interest that are found or synthesized at colleges and universities in amounts that exceed the ''any amount'' STQs. As a result, nearly all colleges, universities, and university hospitals would be required to complete and submit a Top-Screen. Because COI in extremely small quantities (typically milligram or gram quantities per container) are widely dispersed in many locations throughout universities, the commenters believe that these facilities pose no significant security risk. Commenters were also concerned that, while no one location on campus might exceed a threshold, the campus or university as a whole (particularly since there might be multiple campuses), might exceed an STQ. Commenters suggested that DHS provide an

exemption, as does OSHA and EPA regulations, for laboratories that use small quantities of hazardous materials.

Many college and universities described the security procedures that they currently have in place and stated that such procedures are adequate to protect against the security risks that they face. They asserted that it would impose significant burdens to exceed these measures. For example, while they currently do some chemical tracking, they believe that identifying and tracking very small amounts of chemicals for Appendix A purposes would impose a substantial new burden. Furthermore, they did not think that the risk posed by these quantities justifies the substantial burden that tracking would impose. Others maintained that, while locations can be secured, other security measures contained in the Site Security Plans would be antithetical to institutions of higher learning.

As an alternative to seeking an exemption from the regulation for colleges and universities, commenters made a variety of other suggestions. A few commenters urged DHS to adopt different STQs or to exclude chemicals of interest that are used in laboratories at colleges and universities. They recommended that DHS replace ''any amount'' with numeric threshold quantities and that DHS base those quantities on amounts used by other federal agencies. Other commenters proposed a per container limit for COI, similar to what the EPA uses for its Spill Prevention Control and Countermeasure regulations. *See* 40 CFR part 112. As noted above, CHSEMA proposed a one pound limit per container. Commenters also recommended DHS only regulate pure chemicals, explaining that a chemical that is part of a commercial product, formulation, or dilute solution should not be a COI.

Response: Facilities that possess any of the chemicals listed in Appendix A at or above the STQ for any applicable security issue must complete and submit a Top-Screen. *See* § 27.200(b)(2) and § 27.210(a)(1)(i). Accordingly, the Department expects that all facilities, including colleges and universities, that possess such chemicals will complete and submit a Top-Screen. Because the need to do a Top-Screen is driven by the possession of chemicals, not the location of the chemicals, DHS can not simply exempt chemicals located at colleges and universities. In addition, the Department notes that existing federal regulatory schemes (e.g., those of the Centers for Disease Control and Prevention (CDC), Drug Enforcement Agency (DEA), and CWC) do not exempt colleges, universities, and university medical centers from their chemical-related regulatory programs.

Furthermore, given the apparent current state of security at academic institutions, DHS believes that exclusion of colleges and universities is not warranted. Based on the comments DHS received from colleges and universities, the Department understands that security varies dramatically across academic institutions. Representatives of the academic community acknowledged that they possess chemicals of interest. While some adhere to broad security strategies, others admitted having an incomplete or non-existent inventory of the contents and quantities of chemicals and no affordable or timely means of compiling an inventory.

While the requirements of Appendix A will continue to apply to academic institutions, there are several revisions to Appendix A, many of which should allay the concerns of academic institutions. First, DHS is providing colleges and universities with the option to request an extension of time to complete and submit their Top-Screens following the publication of a final Appendix A. The president, dean, provost, or other senior official at a college or university may request an extension from the Assistant Secretary for Infrastructure Protection, and DHS may grant that request for up to 60 additional calendar days following the publication of final Appendix A.

Second, as discussed throughout this final rule, the Department has removed various chemicals from the list. Of note to academic institutions, the Department has removed acetone. Similarly, the Department has adjusted STQs for chemicals. The Department has assigned numeric quantities to all of the previous ''any amount'' STQs. Of note to academic institutions, DHS has changed the STQ for triethanolamine (a theft/diversion-CW/CWP chemical) from ''any amount'' to 220 pounds.

Third, the Department has added an exclusion for facilities that possess laboratory quantities of release-toxic, release-flammable, and release-explosive chemicals. *See* § 27.203(b)(2). This tracks the exemption that EPA uses in its RMP program. Note, however, that while a facility need not count laboratory quantities of release chemicals of interest toward the facility's STQ, a facility must still count laboratory quantities of theft/diversion and sabotage/contamination chemicals of interest toward the facility's STQ.

Fourth, all facilities, including colleges and universities, have flexibility in defining the boundaries of their facility and identifying the party at their institution that is responsible for compliance.[60] The requirements of part 27 are facility-specific. As such, an institution of higher learning can, if appropriate, submit a Top-Screen on a building-to-building basis or a campus-wide basis. This is comparable to the situation for owners or operators of a multi-unit enterprise. *See* 72 FR 17688, 17697.

Fifth, even if academic institutions get screened into this regulatory program (*i.e.*, they complete the Top-Screen, DHS classifies them as a high-risk facility, and they have to develop and implement SVAs and SSPs), the academic institutions may well have security measures in place that will help them meet the applicable risk-based performance standards. *See* § 27.230 (indicating that a facility must select, develop in their SSP, and implement appropriately risk-based measures designed to satisfy the risk-based performance standards listed in § 27.230(a)(1)–(19)). In that case, the additional burden of complying with this regulation would consist of either creating a CSAT SSP or referencing measures in an existing security plan by way of an Alternate Security Program (ASP). *See* § 27.235 ''Alternative Security Program.'' Colleges and universities may benefit from working together to develop an ASP template specifically tailored to the research environment in an academic setting.

2. Medical Research Organizations and Similar Laboratories

Comment: The assertions in the comments from medical research institutes and other similar laboratories largely resembled those of the colleges

[60] Part 27 defines a ''chemical facility or facility'' as ''any facility that possesses or plans to possess, at any relevant point in time, a quantity of a chemical substance determined by the Secretary to be potentially dangerous or that meets other risk-related criterion identified by the Department. As used herein, the term chemical facility or facility shall also refer to the owner or operator of the chemical facility. Where multiple owners and/or operators function within a common infrastructure or within a single fenced area, the Assistant Secretary may determine that such owners and/or operators constitute a single chemical facility or multiple chemical facilities depending on the circumstances.'' *See* § 27.100.

As noted in the preamble to the IFR, DHS believes that it will generally be straightforward for facilities to define their boundaries and identify the party (at their facility) responsible for compliance with the regulation. DHS acknowledges that, in some circumstances, the issue might be more complex. The Department will address those situations on a case-by-case basis. *See* 72 FR 17697. In addition, as indicated in the definition of ''chemical facility,'' the Assistant Secretary has the authority, where necessary, to make a determination about the operations at given facility or facilities. The Assistant Secretary may make the determination that a facility is a single chemical facility or multiple chemical facilities.

and universities. These comments came not only from medical research institutes but from non-production, non-diagnostic research laboratories; ancillary facilities at non-profit, non-commercial research organizations; operators of pharmaceutical laboratories; and companies that conduct research as a part of their business (*e.g.*, industrial or food processing research and development laboratories, environmental testing labs, and testing or monitoring facilities).

They argued that their institutions are not ''high risk chemical facilities.'' They also claimed that they use COI in the same way that colleges and universities do—that is, they have large numbers of chemicals and reagents in very small quantities, in small containers, and at multiple locations within a facility. In addition, they asserted that they did not comment on the Advance Notice of Rulemaking, because they did not believe that rule would cover them. Pharmaceutical research facilities asserted these security efforts would be very burdensome and would divert a large amount of time and resources away from their critical, life-saving research.

Several of those commenters expressed concern about the ''any amount'' threshold. Those commenters included individuals and entities that conduct field calibration for pipelines and operations, operate compliance labs, sterilize instruments, and conduct blood or tissue test. A few commenters pointed out that the ''any amount'' threshold would mean that entities like clinics and dental offices would have to submit Top-Screens.

Commenters requested that DHS exempt their laboratories or operations from the rule. In the alternative, the commenters requested other forms of relief, such as replacing the ''any amount'' STQ for common laboratory chemicals with a STQ of 10 pounds per storage location or 100 pounds per building; establishing a per container limit of 1 pound; setting higher levels for ubiquitous substances (such as acetone and triethanolamine); or defining a facility to include a storage location.

Response: DHS directs readers to the response provided for colleges and universities, as that response is directly applicable to these comments by medical research institutes and other similar laboratories. The requirement to complete the Top-Screen is driven by the possession of certain chemicals in specified quantities, and DHS does not agree that the nature of a facility's operation alone warrants an exclusion. As such, the Department expects that medical research institutes and like institutions that possess any of the chemicals listed in Appendix A at or above the STQ for any applicable security issue will complete and submit a Top-Screen. *See* § 27.200(b)(2) and § 27.210(a)(1)(i). DHS also directs readers to the discussion of revisions to Appendix A, which is provided in the response to colleges and universities. Those revisions should address many of the concerns of medical research institutes and like institutions.

3. Farms and the Agricultural Industry; Fumigation Industry

Comment: Several commenters, including farmers and other agricultural users of chemicals, asserted that they should be exempt from this rule, explaining that they extensively use chemicals like acrolein, ammonium nitrate (nitrogen concentration of 28%–34%), and sodium chlorate. Because farmers use these chemicals on farms for agricultural purposes, and often do so in remote and rural locations, commenters did not think that these chemicals raised any security concerns. Other commenters expressed concern that if DHS made exceptions for certain facilities (especially in the agricultural industry), loopholes would emerge and companies would exploit those loopholes in order to gain a financial edge.

Several commenters asserted that DHS should exempt urea fertilizer, because it is widely-used. Another commenter requested that DHS work with agricultural producer groups in order to find appropriate ways to regulate commonly-used nitrogen fertilizers such as ammonia solutions, anhydrous ammonia, and urea. Commenters believed that the potential hazard or risk posed by these chemicals, particularly in a rural farm setting, is minimal and should not trigger the regulation of farms as ''chemical facilities.'' Yet other commenters agreed that DHS should exempt urea but for a different reason; they asserted that chemicals that are already highly regulated may not need the additional requirements of this rule, but the fact that a chemical like urea is not highly regulated supports the argument that the chemical by itself is not harmful.

Commenters from the fumigation industry pointed out that DHS security regulation of chemicals (such as methyl bromide, chloropicrin, and sulfuryl fluoride) is unnecessary, since these substances are commonly used in the fumigation industry and already regulated under other federal regulatory schemes. In addition, commenters pointed out that there are licensing and control standards for these substances. Moreover, these chemicals are usually kept in small amounts in small containers under secure conditions by people who are licensed.

Response: Pursuant to the authorizing legislation for part 27, the Department has exempted select facilities from this regulation. *See* Section 550(a) and § 27.110(b). Commenters to both the Advance Notice and to Appendix A requested that DHS exempt additional facilities and industries, such as universities, medical research institutes, and farms. Consistent with its position in the IFR, DHS has not provided any additional regulatory text exemptions. *See* 67 FR 17688, 17699.

There are risks with facilities possessing certain amounts of certain chemicals, and the Department is seeking to address these risks under its new authority in Section 550. This extends to all facilities that present high levels of security risk and possess chemicals that may be of interest to terrorists. Moreover, these risks are associated with the characteristics and quantity of the chemical, rather than the business or activity associated with the industry or facility. As such, it would not be appropriate for DHS to exempt, by regulation, entire types of activities or industries.

Nevertheless, the Department realizes the commercial importance of Appendix A chemicals of interest and does not seek to undermine their legitimate production, use, and/or sale. To that end, the Department has made numerous changes to the appendix and discusses them in section II of this preamble. In short, DHS has clearly identified the security issue(s) associated with each chemical, removed the ''any amount'' STQs,[61] removed chemicals (including acetone and urea), and developed a specialized approach for certain chemicals (including propane and AN). In addition, as discussed in the relevant sections above, DHS notes that it removed methyl bromide and chloropicrin from the list of chemicals in Appendix A.

4. Overlap With Other Federal Entities

Comment: Many commenters expressed concern that the new rule creates regulatory redundancy. They indicated that numerous federal agencies, including ATF, DOT, DOJ, EPA, OSHA, TSA, and USCG, already have regulations on the identified chemicals and that some of these agencies heavily regulate companies that deal with chemicals. Commenters explained that companies that store and

[61] *See* footnote 64.

transport these materials must conduct a comprehensive risk and vulnerability assessment based on storage prior to transport, personnel security, unauthorized access, and en route security. Commenters indicated that they would like to see consistency and cooperation between agencies.

Commenters argued that DHS should remove chemicals that are already regulated by other federal agencies and pointed to several examples. Commenters asserted that the EPA, through the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq.*, and DOT regulates chemicals such as methyl bromide, chloropicrin, and sulfuryl fluoride. Other commenters asserted that the EPA, through the Emergency Planning and Community Right to Know Act, 42 U.S.C.11011 *et seq.*, and the Occupational Safety and Health Administration regulate hydrogen peroxide (concentration of at least 30%). And yet other commenters pointed out that DOT regulates propane; DOT, along with EPA, regulates phosphine; and the DOC regulates triethanolamine under its Chemical Weapons Convention (CWC) regulations.

Other commenters recommended that DHS exempt facilities that are regulated by other federal agencies. Specifically, commenters requested exemptions for facilities that have already complied with EPA's Risk Management Program; natural gas pipelines and utility facilities that DOT's Pipeline and Hazardous Materials Administration (PHMSA) regulates; and facilities that have been screened out of the Maritime Transportation Security Act (MTSA) (*e.g.*, offshore oil and gas facilities). Commenters asserted that the EPA RMP regulations, PHMSA pipeline and U.S. Coast Guard MTSA regulations assess facilities with similar criteria (*i.e.*, potential risk to the public, the environment, and economic health) and therefore thought that DHS efforts would be redundant and a waste of resources. Many small businesses commented that it would be difficult for them to keep up with part 27 and other federal regulations, especially since TQs and STQs vary between agencies.

Several commenters suggested that DHS should set its STQs consistent with those of other federal agencies or regulatory programs (*e.g.*, OSHA, EPA, DOC). Commenters most frequently recommended that DHS use EPA RMP TQs and either substitute them categorically for all STQs or at least for the proposed ''any amount'' STQs. One commenter recommended that a chemical of interest that is also an extremely hazardous substance under EPA's Emergency Planning and Notification regulations at 40 CFR part 355 should have an STQ no lower than its threshold planning quantity.

With respect to explosives, commenters pointed out that the explosives industry is already heavily regulated by DOT, the Department of Justice (DOJ), and ATF and is subject to risk assessments. Commenters believe the DHS efforts would be redundant and excessive for a low-threat industry. By contrast, another commenter suggested that DHS expand the list of COI to incorporate those substances regulated by the ATF. The commenter stated that explosives present security risks beyond manufacturing (such as transportation, end storage, and potential theft) that need to be taken into account.

Response: The Department recognizes that multiple federal entities regulate matters related to chemicals. In the Advance Notice to part 27, the Department discussed pre-existing chemical security and safety programs, such as those of the USCG, EPA, OSHA, and ATF. The Department notes, however, that each entity regulates chemicals for distinct reasons. Congress has given each entity a different mandate, and so each entity must satisfy its mandate. For example, OSHA is concerned with, inter alia, the protection of employees that use certain chemicals in the workplace. DOT is concerned with the safe and secure transportation of hazardous materials. EPA, through its RMP program, is concerned with preventing an accidental release of certain chemicals. DHS, however, is concerned with the security implications of facilities possessing these chemicals. Congress has given DHS explicit authority to regulate security at chemical facilities.

To the extent there is overlap in the jurisdiction and efforts of multiple federal entities, DHS will work with those entities to coordinate efforts. Within DHS, the Department has already undertaken steps among headquarters and component offices (*e.g.*, USCG, DHS Office of Infrastructure Protection/Chemical Security Compliance Division (CSCD), and TSA) to coordinate the application and enforcement of regulatory programs related to chemical security. There are liaison positions within CSCD for individuals from other DHS offices and components. In addition, DHS has developed informal and formal working groups to coordinate Departmental regulatory authorities in the chemical sector. With respect to federal entities outside of DHS, the Department will consider the necessity of various formalized arrangements, such as an inter-agency coordination process to resolve jurisdictional questions or conflicts, as this regulatory program develops.

Despite the differing mandates between federal agencies that regulate chemicals, the Department has looked to the regulatory programs of these other federal agencies for guidance and direction. The Department found great value in considering a number of these regulatory programs, including those of the ATF, DOC, Department of Energy (DOE), DOT, EPA, and OSHA. In fact, the Department references, uses, and cites many of these regulations in this rule.

With respect to offshore oil and gas facilities, as discussed in the IFR at 72 FR 17699, the Department notes that the statute (Section 550) and the regulation (§ 27.110(b)) exempt facilities regulated pursuant to MTSA.

5. Concerns About Being Over-Inclusive

Section 27.105 defines a chemical facility as an establishment that ''possesses or plans to possess, at any relevant point in time, a quantity of a chemical substance determined by the Secretary to be potentially dangerous or that meets other risk-related criteria identified by the Department.''

Comment: Numerous commenters stated that this definition of a ''chemical facility,'' along with the chemicals and STQs listed in proposed Appendix A, will capture far more facilities than Congress originally intended. Commenters were concerned that these facilities, which they did not consider high risk facilities, would need to complete and submit a Top-Screen because of the proposed COI and STQs. For example, 105 of the 331 chemicals on the proposed list have a STQ with no ''de minimis'' quantity (i.e., an STQ of ''any amount.''). Among those listed are many common chemicals (e.g., carbon monoxide) that can be found in many low risk facilities. As a result of the proposed list of COI and STQs, the rule would end up covering many entities that would not expect to be covered, such as rural schools, summer camps, universities, research facilities, farms, agricultural retailers, grocery stores, fumigators, and residential homes.

Commenters asserted that if DHS did not alter its definition of chemical facility, the chemicals in the COI list, and the STQs on the COI list, DHS would receive a drastically larger number of Top-Screens (than the 40,000 Top-Screens, which DHS estimated in regulatory evaluation for the IFR). Commenters argued that the number of Top-Screens would be as high as hundreds of thousands, perhaps even

millions. Commenters believe this will bog down the review process, use too many resources on low risk facilities, and become counter-productive in the attempt to secure the homeland.

Commenters were also concerned that if entities which did not expect to be included (e.g., farmers, small business owners, or home owners) are, in fact, included in Appendix A and expected to complete the Top-Screen, those entities will not know of the requirement and not comply, thereby incurring possible penalties and other consequences (e.g., filing fees, costs associated with hiring DHS compliance consultants).

Response: In part 27, the Department classifies chemical facilities as high risk based on the presence of chemicals that may be an attractive target for terrorists. DHS has identified security issue(s) for each chemical, and that security issue is associated with the characteristics and quantity of the chemical. If a facility possesses that chemical at the specified amount, the Department expects that the facility will complete a Top-Screen.

While the Department has not narrowed its definition of ''chemical facility,''[62] the Department has refined the list of chemicals, as well as the parameters for including chemicals. *See* section II of the preamble. Among the changes, DHS established many new STQs, eliminated the ''any amount'' STQ, and has included new calculation provisions. The Department expects that these changes will effectively exclude most farmers, home owners, and small businesses from the Top-Screen process. The Department believes that its estimate regarding entities that will complete the Top-Screen continues to be accurate.

In addition, the Department is providing some clarification on the coverage of truck terminals. The Department is taking the same approach toward truck terminals that it has taken toward railroad facilities. *See* 72 FR 17698–17699. DHS presently does not plan to screen truck terminals for inclusion in the Section 550 regulatory program, and therefore DHS will not request that owners and operators of truck terminals complete the Top-Screen risk assessment methodology. DHS and its components, including TSA, have concurrent and overlapping jurisdiction with respect to certain aspects of chemical security. DHS is working, and will continue to work, to address this overlapping jurisdiction and to determine whether it would want to include trucking terminals in its chemical security program. As with railroad facilities, DHS may, in the future re-evaluate the coverage of trucking terminals. DHS would do so by issuing a rulemaking considering the matter.

Finally, in response to commenters who indicate that there may be a lack of awareness about these requirements, the Department notes that publication of a document in the **Federal Register** is official notice of a document's existence and its contents to those parties that may be subject to it or affected by it. In this case, the IFR and this final rule puts all affected parties on notice that they must comply with the terms of part 27. Despite this fact, the Department has undertaken outreach efforts since the publication of this IFR and will continue to do so.

C. Screening Threshold Quantities

1. In General

Comment: There were many comments about the STQs assigned to the chemicals in the list. The majority of commenters recommended that DHS increase the STQs, arguing that the proposed STQs were too low. Commenters asserted that DHS should significantly increase the STQs to relieve the burden on very low risk facilities. Other commenters argued that low STQs for common, widely-used chemicals will impose a huge burden on industry overall as well as a burden on small entities that make small amounts of several, different chemicals. By contrast, only one individual commenter recommended a downward STQ adjustment (for chlorine).

Response: The Department has revised its approach to Appendix A, including substantial changes to the STQs. The changes are discussed in depth above in section II(C).

Comment: Some individuals noted that a particular site or facility might have several locations where there is a small quantity of a COI, but in the aggregate the site could have more than an STQ. The commenters asked whether the threshold amount should be applied to the entire site, even if the different locations within the site are widely separated from one another. Another commenter thought that DHS should clarify its definition of STQ to include ''all sources of a given chemical from a given facility, not just single sources with quantities that exceed STQs.''

Response: As DHS discussed in the comment response about colleges and universities, facilities have flexibility to define their boundaries and identify the party (or parties) at their institution that is responsible for compliance. The requirements of part 27 are facility-specific.

Comment: A commenter suggested that, because of varying uses or toxicity, DHS list STQs in smaller units of measures (i.e., grams) in addition to pounds.

Response: Where appropriate, the Department has listed STQs in units other than pounds. For example, the Department lists the cumulative STQ for specified theft/diversion-CW/CWP chemicals at 100 grams.

2. Modifying the ''Any Amount'' STQ

Comment: Several commenters expressed an opinion on the ''any amount'' STQ in the proposed appendix. Many commenters urged DHS to replace the ''any amount'' STQs with numeric levels. One commenter encouraged DHS to set the thresholds at amounts that reflect what experts believe is sufficient to produce an off-site consequence to the public as a result of attack, theft, or conversion into a weapon of mass destruction.

Yet other commenters asked DHS to clarify the meaning of ''any amount.'' For example, one individual asked how a facility would know when it came into possession of ''any amount.'' Other commenters pointed out that certain COI are ingredients in many nonhazardous products, such as foods and cosmetics, and therefore thought that DHS would not have intended for those products to be subject to the rule. For example, an 8-ounce glass of whole milk contains approximately 230 milligrams of phosphorus, and yet DHS listed phosphorus as a COI with an STQ of ''any amount.''

Other commenters noted that if DHS retained the ''any amount'' STQ, every home, grocery store, and school with only a detectable amount would have to comply with the regulation. These commenters did not think that such a tiny amount of chemicals would make a viable terrorist target. Other commenters suggested that the ''any amount'' STQ would create a larger burden for both DHS and facilities that would otherwise not be affected by this rule. This, in turn, would divert limited resources away from those facilities that can actually be considered terrorist targets. A food industry commenter believed that overly expansive coverage would cause facilities in the industry to focus on chemical security compliance rather than potential threats to the food supply.

Response: The Department has removed the ''any amount STQs'' from the list, and for the vast majority of chemicals, DHS assigned a numeric

[62] For a discussion on the definition of ''chemical facility,'' see footnote 61.

quantity to the STQ for each chemical.[63] The revised STQs are geared toward the hazard and consequences associated with the chemical.

3. Mixtures and Solutions

Comment: Several individuals, entities, and organizations believed that the proposed appendix was unclear about the applicability of STQs to mixtures and solutions. Commenters argued that the concentration of a COI is the most important factor affecting potential harm. Commenters asserted that when a COI is listed in Appendix A without a percent concentration, then the STQ should apply to the weight of the pure substance, not to the weight of a mixture or solution. Alternatively, commenters suggested that DHS should establish minimum concentrations for all COI. Some commenters noted that the properties of a mixture might be significantly different from the properties of the listed COI that caused the mixture to be considered a health or security risk. One commenter suggested that DHS should exclude mixtures from the list, since most chemical mixtures do not share the same risk profile as their pure compound counterpart (e.g., acetone, cyanides, fertilizers, and gas mixtures).

Response: The Department recognizes the importance of providing guidance on mixtures, and as discussed in section II, the Department added a new regulatory section that addresses mixtures. *See* § 27.204. The Department generally disagrees with commenters who assert that chemical mixtures are not a security concern. For example, toxic chemical mixtures are a security concern given their ability to vaporize from the mixture and potentially create a toxic cloud. Similarly, certain minimum concentrations of poisonous gases, particularly the highly toxic gasses, are potential weapons even in extremely low concentrations.

D. Revisions to the COI List

1. Technical Corrections

Comment: A handful of commenters noted that DHS had duplicate entries for chemicals in proposed Appendix A. The Department listed each of the four following chemicals twice, with a different STQ (''any amount'' and 2000 pounds) for each entry: (1) Phosphorus oxychloride, (2) phosphorus pentachloride, (3) phosphorus trichloride, and (4) thionyl chloride.

In addition, the Department listed each of the following three chemicals twice by listing the chemical under two synonymous names: (1) Calcium dithionite and calcium hydrosulfite, (2) sodium dithionite and sodium hydrosulfite, and (3) zinc dithionite and zinc hydrosulfite. The Department not only listed each of the following two chemicals twice by listing the chemical under two synonymous names, but also listed a different STQ under each name: (1) Hydrogen cyanide (any amount) and hydrocyanic acid (1,875 pounds), and (2) carbonyl sulfide (any amount) and carbon oxysulfide (7,500 pounds).

Commenters noted that Appendix A listed incorrect CAS numbers for the following six chemicals: hexyltrichlorosilane, sodium phosphide, hexotonal, chromium oxychloride, diethyl phosphate, and dimethyl phosphate.

Response: The Department appreciates the input from commenters on chemical names and CAS numbers. The Department used that information to ensure the accuracy of Appendix A. To that end, the Department has removed and revised duplicate entries, corrected CAS numbers, and added a column to the appendix containing commonly-used synonyms for certain chemicals of interest.

2. Formatting and Approach

Comment: A few commenters recommended that DHS parallel the DOT hazard class approach in classifying and listing chemicals. The Institute of Makers of Explosives (IME) made this suggestion in the context of explosives. To illustrate their point, the IME provided examples of chemicals in the same hazard class as several COI included in the Department's chemical-by-chemical approach.

Response: As noted in the IFR, DHS's primary approach in this appendix is through the association of individual chemicals with specific security issues. While DHS will not preclude the use of hazard classes for other purposes (e.g., in the risk-based performance standard guidelines), DHS is not using the DOT hazard class approach at this point in time.

Comment: One commenter suggested that DHS add the following generic ''Not Otherwise Specified'' (N.O.S.) chemicals to the COI list: Poison Gas, N.O.S.; Flammable Gas, N.O.S.; Flammable Liquid, N.O.S.; Spontaneous Combustible Liquid, N.O.S.; Organic Peroxide, N.O.S.; Poison Inhalation Hazard, N.O.S. The commenter suggested that DHS assign large STQ values to these N.O.S. chemicals.

Response: For the reasons discussed above in sections II(C)(2) and II(C)(4), the Department is not using the DOT approach of categorizing chemicals,[64] and so DHS has not included N.O.S. chemicals on the COI list.[65] Instead, DHS has included chemicals on the COI list if they are uniquely identifiable. The Department, of course, retains its discretion to expand the COI list to include these or other chemicals in the future, as necessary.

Comment: A commenter requested that DHS list the chemicals in CAS numerical sequence in addition to listing them in alphabetical order.

Response: At this time, the Department will not list chemicals in CAS numerical sequence. The Department has, however, re-formatted the final Appendix, making it more user-friendly.

E. Other Comments

1. Procedural Issues

Comment: Many commenters were upset that DHS did not publish Appendix A in the Advance Notice. A large number of commenters wanted the comment period for Appendix A extended for an additional 30 to 60 days. Many commenters thought that 30 days was not a sufficient amount of time to fully digest and analyze the regulations.

Response: Congress provided the Department with six months to promulgate interim final regulations on chemical security. *See* Section 550(a). The Department not only met that short deadline, but it published both an Advance Notice and IFR within that six-month period. While the Department did not include Appendix A in the Advance Notice, it nonetheless has provided the public with an opportunity to comment on the appendix.

In the IFR, the Department provided the public with 30 days to comment on proposed Appendix A. The Department was unable to extend that time period, given that the Department is seeking to facilitate the expeditious implementation of this chemical security regulatory program. Until the Department finalizes Appendix A, the

[63] for sabotage/contamination chemicals, a facility meets the STQ if it possesses A Placarded Amount—i.e., if it ships the listed chemical of interest and is required to placard the shipment of that chemical pursuant to DOT regulations at 49 CFR part 172. DOT regulations identify the amounts (such as ''any quantity'' or ''1,001 lbs or more) for which placarding is required.'' See 49 CFR 172.504.

[64] Through its Hazardous Material Table in 49 CFR 172.101, DOT regulates the transportation of hazardous materials. For each material listed, DOT identifies a hazard class, provides the proper shipping name, and specifies the applicable requirements (e.g., labeling, packaging, etc). To denote hazardous materials without a specific shipping name, DOT uses the suffix ''N.O.S.'' and a generic shipping name.

[65] The only exception is germanium tetrafluoride, which DHS discusses in section (II)(C)(4)(a) above.

Department cannot fully implement this program.

Comment: A few commenters asked that DHS incorporate procedures for changing the chemicals and STQs in Appendix A. Commenters want to be able to request that DHS delist (or remove) a chemical from Appendix A. Other commenters asked that DHS provide a 90 day comment period when adding chemicals.

Response: DHS plans to periodically update the list of chemicals in Appendix A and will do so through notice and comment. At this time, DHS is not including a petition process like that of EPA, where members of the public may petition the EPA to add or delete substances from the RMP list. *See* 40 CFR 27.120.

Comment: Commenters asked that the media be more involved in conveying information about the final rule, because they believe that there are many smaller businesses that are potentially affected and yet are not aware of these new standards. Commenters are concerned that individuals and businesses could face severe financial penalties or unfair prosecution if they lack a full understanding of the rule and fail to comply.

Response: The Department recognizes the need for ongoing and expanded outreach on this regulatory program, and the Department has already initiated such outreach. For example, the Department began participating in conferences soon after the effective date of part 27 (e.g., the American Chemistry Council's ChemSecure Security Conference and Expo from April 17–19, 2007). The Department has also supported other events, such as the 2007 Chemical Sector Security Summit on June 11–13, 2007, which was convened by the Chemical Sector Coordinating Council.[66] In addition, the Department provides informative and up-to-date resources about part 27 on its Web site (*http://www.dhs.gov/chemicalsecurity*). The Department is interested in collaborating with private and public stakeholders, as well as the media, in the interest of promoting a full understanding of, and effective compliance with, part 27.

2. Compliance Issues

Comment: Several commenters asked DHS for clarification on identifying the responsible party for submitting information through the Top-Screen. One commenter asked who, if anyone, is responsible to submit a Top-Screen, in each of the following three scenarios: (1) If an American company buys a COI from one country and ships it directly to another country without ever possessing it; (2) If an American company buys a COI from a foreign nation and temporarily stores it for resale to another USA or Canadian company; and, (3) If an American company buys a COI above the threshold limit from an overseas producer and sells it to another USA company without ever handling it in their facility.

Response: Part 27 applies to facilities located in the U.S. All facilities located in the U.S., including both domestic and foreign companies, that possess chemicals at the applicable STQ must complete and submit a Top-Screen. The converse is that a facility which does not operate in the U.S. and never possesses chemicals in the U.S., even if it is a U.S. company, does not have to complete and submit a Top-Screen.

An American company that purchases chemicals of interest from one foreign country and ships it to another foreign country, without ever possessing the chemical in the U.S. does not need to complete and submit a Top-Screen. Any company, whether domestic or foreign, that stores chemicals of interest in the U.S. in quantities that at any time meet or exceed the STQ must complete and submit a Top-Screen. The Department realizes there are numerous, complicated business arrangements. Where a facility is unsure about its responsibility for compliance, the facility should consult with the Department pursuant to § 27.120, and the Department can work with the facility to resolve those issues.

Comment: Other commenters raised concerns about third party responsibility. Commenters wanted to know who was responsible for complying with part 27 if a company or individual relies upon a third party to store and secure an Appendix A chemical above the STQ. There was also confusion over third party contractors/vendors who temporarily store COI on-site while completing a job. Commenters explained that the challenge is to determine who completes and submits, and how often, a Top-Screen for a temporary tank. Storage of COI may be temporary or transient in nature, which creates confusion about how to apply the definition of facility to COI. A few commenters asked if a landlord is responsible for ensuring compliance with DHS regulations if their tenant company leases a warehouse and stores a COI above its allotted threshold.

Response: Whether a landlord or tenant is responsible for submitting a Top-Screen will depend on which party is responsible for security of the chemical. The party responsible for the security of the chemical is responsible for submitting the Top-Screen. This may vary depending on the operational and/or contractual relationship between the parties.

Comment: A few commenters suggested that, in determining whether a facility possesses the chemicals in Appendix A at the quantities that trigger a Top-Screen, DHS should not include quantities of a chemical of interest that a facility is using or processing on-site. In some cases, a process might create a chemical of interest but not result in the storage of that chemical of interest. For example, carbon monoxide produced during combustion is transitory, and sulfur dioxide and sulfur trioxide are created and consumed during flue gas conditioning.

Response: A facility shall calculate the STQ for release-toxic chemicals, such as sulfur trioxide, based on a facility's total inventory of the chemical. The Department has added clarity to this issue, by adding calculation provisions for each security issue. Section § 27.203(b)(1)(iii), in particular, provides that facilities shall include in their release STQ chemicals of interest that are present as process intermediates, by-products, or materials produced incidental to the production of a product. The Department notes that it no longer includes carbon monoxide on the list of chemicals in Appendix A.

Comment: Commenters asked whether a facility, after not having a COI for an extended period of time, would have to re-submit a Top-Screen if the facility obtained a COI above the STQ.

Response: Under § 27.210(a)(1)(i), a facility that possesses any of the chemicals listed in Appendix A at or above the corresponding STQs must complete and submit a Top-Screen within 60 calendar days of the effective date of this final rule. In addition, a facility that *comes into possession* of any of the chemicals in Appendix A at the listed STQs must complete and submit a Top-Screen within 60 calendar days of coming into possession of the chemicals (emphasis added).

Comment: Commenters suggested that DHS establish a ''holding-time'' threshold for chemicals, with time frames including 30 days and 60 days. Some commenters suggested an exemption for facilities that possess chemicals only for short periods of time.

Response: DHS has not established a ''holding-time'' threshold for chemicals. If terrorists have a reason to know that

[66] For information on the conference, see *http://www.dhs.gov/xprevprot/programs/gc_1176736485793.shtm*

an attractive chemical is present at a facility, the duration for which it is present is largely irrelevant. As a result, a facility must submit and complete a Top-Screen if it possesses chemicals of interest in a quantity that at any time meets the STQ.

3. Miscellaneous

Comment: One commenter was concerned that there was a lack of information describing the tier-based risk assessments. Another commenter indicated that they were unable to submit comprehensive comments, because DHS has not established criteria and performance standards for determining risk-based tiers.

Response: Although these comments are outside the scope of the rulemaking, the Department provides a response, in the hopes of promoting a fuller understanding of part 27. The Department is preparing a comprehensive guidance document that provides detailed explanations for the requirements by tier. The Department will make this guidance document available to facilities that have a need to know the information.

Comment: Commenters expressed concerns about the financial impact of these new regulations on the American economy. Some feel that the regulations would impose a larger financial burden on U.S.-based companies, giving foreign companies an advantage. One commenter, in particular, was concerned that there will be an undue economic burden on local businesses if DHS requires background checks for any level of facility. This, in turn, could lead to non-compliance.

A few commenters requested that DHS establish and publish qualifications for reviewers [67] and that DHS require reviewers to register with CSAT. Other commenters noted that the EPA and other agencies release operating information to the public; they thought that DHS, however, should, for security reasons, maintain as classified the information that it collects because of part 27. Another commenter, after noting that registration is only internet-based, requested that paper registration be made available for areas that do not have public internet access.

One commenter was concerned that the Chemical Security Regulatory Task Force, which consists of five trained individuals, would not be able to guide the thousands of facilities seeking guidance on these regulations. A few commenters were concerned about DHS's ability to process information requests quickly enough so that requesting companies would not be denied or penalized as a result.

A commenter recommended that DHS replace the open-ended questions in the Top-Screen (which asks for the value of products shipped from facilities) with a pull down menu listing ranges of values. The commenter thought that this would help incorporate the smaller sites that are exempt from the comparatively high thresholds for declaring and hosting inspections of chemical weapons and their precursors under the CWC.

Response: These comments are outside the scope of this rulemaking, which addresses the list of chemicals in Appendix A.

IV. Regulatory Analyses

A. Executive Order 12866: Regulatory Planning and Review

DHS prepared and placed in the docket a Regulatory Assessment addressing the economic impact of the IFR. *See* 72 FR 172688. That Regulatory Assessment is applicable to this final rule.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) mandates that an agency conduct an RFA analysis when an agency is required to publish a notice of proposed rulemaking. *See* 5 U.S.C. 603(a). Because the Department was not required to publish a notice of proposed rulemaking for part 27,[68] the Department was not required to conduct a RFA analysis. Nevertheless, the Department did consider the impacts of part 27 on small entities, providing that analysis in the Regulatory Assessment for the IFR. *See* 72 FR 172688. That analysis is applicable to this final rule.

List of Subjects

Chemical security, Facilities, Incorporation by reference, Reporting and recordkeeping, Security measures.

The Final Rule

For the reasons set forth in the preamble, the Department of Homeland Security revises part 27 to Title 6, Code of Federal Regulations, to read as follows:

Title 6—Department of Homeland Security

Chapter 1—Department of Homeland Security, Office of the Secretary

PART 27—CHEMICAL FACILITY ANTI-TERRORISM STANDARDS

■ 1. The authority citation for part 27 continues to read as follows:

Authority: Pub. L. 109–295, sec. 550.

■ 2. Add the following definitions, in alphabetical order, to § 27.105, to read as follows:

§ 27.105 Definitions.

* * * * *

A Commercial Grade (ACG) shall refer to any quality or concentration of a chemical of interest offered for commercial sale that a facility uses, stores, manufactures, or ships.

A Placarded Amount (APA) shall refer to the STQ for a sabotage and contamination chemical of interest, as calculated in accordance with § 27.203(d).

* * * * *

Chemical of Interest shall refer to a chemical listed in Appendix A to part 27.

* * * * *

CUM 100g shall refer to the cumulative STQ of 100 grams for designated theft/diversion-CW/CWP chemicals and which is located in Appendix A to part 27 as the entry for the STQ and Minimum Concentration of certain theft/diversion-CW/CWP chemicals.

* * * * *

Security Issue shall refer to the type of risks associated with a given chemical. For purposes of this part, there are four main security issues:

(1) Release (including toxic, flammable, and explosive);

(2)Theft and diversion (including chemical weapons and chemical weapons precursors, weapons of mass effect, and explosives and improvised explosive device precursors),

(3) Sabotage and contamination, and

(4) Critical to government mission and national economy.

* * * * *

■ 3. Amend § 27.200 by revising paragraph (b)(2) to read as follows:

§ 27.200 Information regarding security risk for a chemical facility.

* * * * *

(b) * * *

(2) A facility must complete and submit a Top-Screen in accordance with the schedule provided in § 27.210, the calculation provisions in § 27.203, and

[67] A facility has the option of designating a reviewer for its facility. A reviewer is an individual who can review, but not enter, edit, or submit, information in the CSAT system. A facility can add a reviewer any time after the CSAT User Registration process.

[68] By directing the Secretary to issue ''interim final regulations,'' Congress authorized the Secretary to proceed without the traditional notice-and-comment required by the Administrative Procedure Act. *See* 71 FR 78276.

the minimum concentration provisions in § 27.204 if it possesses any of the chemicals listed in Appendix A to this part at or above the STQ for any applicable Security Issue.

* * * * *

■ 4. Add § 27.203 to read as follows:

§ 27.203 Calculating the screening threshold quantity by security issue.

(a) *General.* In calculating whether a facility possesses a chemical of interest that meets the STQ for any security issue, a facility need not include chemicals of interest:

(1) Used as a structural component;

(2) Used as products for routine janitorial maintenance;

(3) Contained in food, drugs, cosmetics, or other personal items used by employees;

(4) In process water or non-contact cooling water as drawn from environment or municipal sources;

(5) In air either as compressed air or as part of combustion;

(6) Contained in articles, as defined in 40 CFR 68.3;

(7) In solid waste (including hazardous waste) regulated under the Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et. seq.,* except for the waste described in 40 CFR 261.33;

(8) in naturally occurring hydrocarbon mixtures prior to entry of the mixture into a natural gas processing plant or a petroleum refining process unit. Naturally occurring hydrocarbon mixtures include condensate, crude oil, field gas, and produced water as defined in 40 CFR 68.3.

(b) *Release Chemicals.*—(1) *Release-Toxic, Release-Flammable, and Release-Explosive Chemicals.* Except as provided in paragraphs (b)(2) and (b)(3), in calculating whether a facility possesses an amount that meets the STQ for release chemicals of interest, the facility shall only include release chemicals of interest:

(i) In a vessel as defined in 40 CFR 68.3, in a underground storage facility, or stored in a magazine as defined in 27 CFR 555.11;

(ii) In transportation containers used for storage not incident to transportation, including transportation containers connected to equipment at a facility for loading or unloading and transportation containers detached from the motive power that delivered the container to the facility;

(iii) Present as process intermediates, by-products, or materials produced incidental to the production of a product if they exist at any given time;

(iv) In natural gas or liquefied natural gas stored in peak shaving facilities; and

(v) In gasoline, diesel, kerosene or jet fuel (including fuels that have flammability hazard ratings of 1, 2, 3, or 4, as determined by using National Fire Protection Association (NFPA) 704: Standard System for the Identification of the Hazards of Materials for Emergency Response [2007 ed.], which is incorporated by reference at 27.204(a)(2)) stored in aboveground tank farms, including tank farms that are part of pipeline systems;

(2) Release-Toxic, Release-Flammable, and Release-Explosive Chemicals. Except as provided in paragraph (c)(2)(i), in calculating whether a facility possesses an amount that meets the STQ for release-toxic, release-flammable, and release-explosive chemicals, a facility need not include release-toxic, release-flammable, or release-explosive chemicals of interest that a facility manufactures, processes or uses in a laboratory at the facility under the supervision of a technically qualified individual as defined in 40 CFR 720.3.

(i) This exemption does not apply to specialty chemical production; manufacture, processing, or use of substances in pilot plant scale operations; or activities, including research and development, involving chemicals of interest conducted outside the laboratory.

(ii) [Reserved]

(3) Propane. In calculating whether a facility possesses an amount that meets the STQ for propane, a facility need not include propane in tanks of 10,000 pounds or less.

(c) *Theft and Diversion Chemicals.* In calculating whether a facility possesses an amount of a theft/diversion chemical of interest that meets the STQ, the facility shall only include theft/diversion chemicals of interest in a transportation packaging, as defined in 49 CFR 171.8. Where a theft/diversion-Chemical Weapons (CW) chemical is designated by ''CUM 100g,'' a facility shall total the quantity of all such designated chemicals in its possession to determine whether the facility possesses theft/diversion-CW chemicals that meet or exceed the STQ of 100 grams.

(d) *Sabotage and Contamination Chemicals.* A facility meets the STQ for a sabotage/contamination chemical of interest if it ships the chemical and is required to placard the shipment of that chemical pursuant to the provisions of subpart F of 49 CFR part 172.

■ 5. Add § 27.204 to read as follows:

§ 27.204 Minimum concentration by security issue.

(a) *Release Chemicals*—(1) *Release-Toxic Chemicals.* If a release-toxic chemical of interest is present in a mixture, and the concentration of the chemical is equal to or greater than one percent (1%) by weight, the facility shall count the amount of the chemical of interest in the mixture toward the STQ. If a release-toxic chemical of interest is present in a mixture, and the concentration of the chemical is less than one percent (1%) by weight of the mixture, the facility need not count the amount of that chemical in the mixture in determining whether the facility possesses the STQ. Except for oleum, if the concentration of the chemical of interest in the mixture is one percent (1%) or greater by weight, but the facility can demonstrate that the partial pressure of the regulated substance in the mixture (solution) under handling or storage conditions in any portion of the process is less than 10 millimeters of mercury (mm Hg), the amount of the substance in the mixture in that portion of a vessel need not be considered when determining the STQ. The facility shall document this partial pressure measurement or estimate.

(2) *Release-Flammable Chemicals.* If a release-flammable chemical of interest is present in a mixture in a concentration equal to or greater than one percent (1%) by weight of the mixture, and the mixture has a National Fire Protection Association (NFPA) flammability hazard rating of 4, the facility shall count the entire amount of the mixture toward the STQ. Except as provided in § 27.203(b)(1)(v) for fuels that are stored in aboveground tank farms (including farms that are part of pipeline systems), if a release-flammable chemical of interest is present in a mixture in a concentration equal to or greater than one percent (1%) by weight of the mixture, and the mixture has a National Fire Protection Association (NFPA) flammability hazard rating of 1, 2, or 3, the facility need not count the mixture toward the STQ. The flammability hazard ratings are defined in NFPA 704: Standard System for the Identification of the Hazards of Materials for Emergency Response [2007 ed.]. The Director of the Federal Register approves the incorporation by reference of this standard in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of the incorporated standard from the National Fire Protection Association at 1 Batterymarch Park, Quincy, MA 02169–7471 or *http://www.nfpa.org.* You may inspect a copy of the incorporated standard at the Department of Homeland Security, 1621 Kent Street, 9th Floor, Rosslyn VA (please call 703–235–0709) to make an appointment or at

the or at the National Archives and Records Administration (NARA). For information on the availability of material at NARA, call 202–741–6030, or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.* If a release-flammable chemical of interest is present in a mixture, and the concentration of the chemical is less than one percent (1%) by weight, the facility need not count the mixture in determining whether the facility possesses the STQ.

(3) *Release-Explosive Chemicals.* For each release-explosive chemical of interest, a facility shall count the total quantity of all commercial grades of the chemical of interest toward the STQ, unless a specific minimum concentration is assigned in the Minimum Concentration column of Appendix A to part 27, in which case the facility should count the total quantity of all commercial grades of the chemical at the specified minimum concentration.

(b) *Theft and Diversion Chemicals.* (1) Theft/Diversion-Chemical Weapons (CW) and Chemical Weapons Precursors (CWP Chemicals: Where a theft/diversion-CWC/CWP chemical of interest is not designated by ''CUM 100g'' in Appendix A, and the chemical is present in a mixture at or above the minimum concentration amount listed in the Minimum Concentration column of Appendix A to part 27, the facility shall count the entire amount of the mixture toward the STQ.

(2) Theft/Diversion-Weapon of Mass Effect (WME) Chemicals: If a theft/diversion-WME chemical of interest is present in a mixture at or above the minimum concentration amount listed in the Minimum Concentration column of Appendix A to part 27, the facility shall count the entire amount of the mixture toward the STQ.

(3) Theft/Diversion-Explosives/Improvised Explosive Device Precursor (EXP/IEDP) Chemicals. For each theft/diversion-EXP/IEDP chemical of interest, a facility shall count the total quantity of all commercial grades of the chemical toward the STQ, unless a specific minimum concentration is assigned in the Minimum Concentration column of Appendix A to part 27, in which case the facility should count the total quantity of all commercial grades of the chemical at the specified minimum concentration.

(c) *Sabotage and Contamination Chemicals.* For each sabotage/contamination chemical of interest, a facility shall count the total quantity of all commercial grades of the chemical toward the STQ.

■ 6. Amend § 27.210 by revising paragraph (a)(1)(i) to read as follows:

§ 27.210 Submissions Schedule.

* * * * *

(a)(1)(i) Unless otherwise notified, within 60 calendar days of November 20, 2007 for facilities that possess any of the chemicals listed in Appendix A at or above the STQ for any applicable Security Issue, or within 60 calendar days for facilities that come into possession of any of the chemicals listed in Appendix A at or above the STQ for any applicable Security Issue; or

* * * * *

■ 7. Revise Appendix A to part 27 to read as follows:

Appendix A to Part 27: DHS Chemicals of Interest

BILLING CODE 4410–10–P

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
Acetaldehyde		75-07-0	1.00	10,000						X					
Acetone cyanohydrin, stabilized		75-86-5					ACG	APA							X
Acetyl bromide		506-96-7					ACG	APA							X
Acetyl chloride		75-36-5					ACG	APA							X
Acetyl iodide		507-02-8					ACG	APA							X
Acetylene	[Ethyne]	74-86-2	1.00	10,000						X					
Acrolein	[2-Propenal] or Acrylaldehyde	107-02-8	1.00	5,000					X						
Acrylonitrile	[2-Propenenitrile]	107-13-1	1.00	10,000						X					
Acrylyl chloride	[2-Propenoyl chloride]	814-68-6	1.00	10,000						X					
Allyl alcohol	[2-Propen-1-ol]	107-18-6	1.00	15,000					X						
Allylamine	[2-Propen-1-amine]	107-11-9	1.00	10,000						X					
Allyltrichlorosilane, stabilized		107-37-9					ACG	APA							X
Aluminum (powder)		7429-90-5			ACG	100								X	
Aluminum bromide, anhydrous		7727-15-3					ACG	APA							X
Aluminum chloride, anhydrous		7446-70-0					ACG	APA							X
Aluminum phosphide		20859-73-8					ACG	APA							X
Ammonia (anhydrous)		7664-41-7	1.00	10,000					X						
Ammonia (conc. 20% or greater)		7664-41-7	20.00	20,000					X						
Ammonium nitrate, [with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance]		6484-52-2	ACG	5,000	ACG	400					X			X	

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release -- Toxic	Release -- Flammables	Release -- Explosives	Theft -- CW/CWP	Theft -- WME	Theft -- EXP/IEDP	Sabotage/Contamination
Ammonium nitrate, solid [nitrogen concentration of 23% nitrogen or greater]		6484-52-2			33.00	2000								X	
Ammonium perchlorate		7790-98-9	ACG	5,000	ACG	400					X			X	
Ammonium picrate		131-74-8	ACG	5,000	ACG	400					X			X	
Amyltrichlorosilane		107-72-2					ACG	APA							X
Antimony pentafluoride		7783-70-2					ACG	APA							X
Arsenic trichloride	[Arsenous trichloride]	7784-34-1	1.00	15,000	30.00	2.2			X			X			
Arsine		7784-42-1	1.00	1,000	0.67	15			X				X		
Barium azide		18810-58-7	ACG	5,000	ACG	400					X			X	
1,4-Bis(2-chloroethylthio)-n-butane		142868-93-7			CUM 100g							X			
Bis(2-chloroethylthio)methane		63869-13-6			CUM 100g							X			
Bis(2-chloroethylthiomethyl)ether		63918-90-1			CUM 100g							X			
1,5-Bis(2-chloroethylthio)-n-pentane		142868-94-8			CUM 100g							X			
1,3-Bis(2-chloroethylthio)-n-propane		63905-10-2			CUM 100g							X			
Boron tribromide		10294-33-4			12.67	45	ACG	APA					X		X
Boron trichloride	[Borane, trichloro]	10294-34-5	1.00	5,000	84.70	45			X				X		
Boron trifluoride	[Borane, trifluoro]	7637-07-2	1.00	5,000	26.87	45			X				X		
Boron trifluoride compound with methyl ether (1:1)	[Boron, trifluoro [oxybis (methane)]-,T-4-]	353-42-4	1.00	15,000					X						
Bromine		7726-95-6	1.00	10,000					X						
Bromine chloride		13863-41-7			9.67	45							X		
Bromine pentafluoride		7789-30-2					ACG	APA							X
Bromine trifluoride		7787-71-5			6.00	45	ACG	APA					X		X
Bromotrifluorethylene	[Ethene, bromotrifluoro-]	598-73-2	1.00	10,000						X					

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release -- Toxic	Release -- Flammables	Release -- Explosives	Theft -- CW/CWP	Theft -- WME	Theft -- EXP/IEDP	Sabotage/Contamination
1,3-Butadiene		106-99-0	1.00	10,000						X					
Butane		106-97-8	1.00	10,000						X					
Butene		25167-67-3	1.00	10,000						X					
1-Butene		106-98-9	1.00	10,000						X					
2-Butene		107-01-7	1.00	10,000						X					
2-Butene-cis		590-18-1	1.00	10,000						X					
2-Butene-trans	[2-Butene, (E)]	624-64-6	1.00	10,000						X					
Butyltrichlorosilane		7521-80-4					ACG	APA							X
Calcium hydrosulfite	[Calcium dithionite]	15512-36-4					ACG	APA							X
Calcium phosphide		1305-99-3					ACG	APA							X
Carbon disulfide		75-15-0	1.00	20,000					X						
Carbon oxysulfide	[Carbon oxide sulfide (COS); carbonyl sulfide]	463-58-1	1.00	10,000						X					
Carbonyl fluoride		353-50-4			12.00	45							X		
Carbonyl sulfide		463-58-1			56.67	500							X		
Chlorine		7782-50-5	1.00	2,500	9.77	500			X				X		
Chlorine dioxide	[Chlorine oxide, (ClO2)]	10049-04-4	1.00	1,000			ACG	APA	X						X
Chlorine monoxide	[Chlorine oxide]	7791-21-1	1.00	10,000						X					
Chlorine pentafluoride		13637-63-3			4.07	15							X		
Chlorine trifluoride		7790-91-2			9.97	45							X		
Chloroacetyl chloride		79-04-9					ACG	APA							X
2-Chloroethylchloro-methylsulfide		2625-76-5			CUM 100g							X			
Chloroform	[Methane, trichloro-]	67-66-3	1.00	20,000					X						
Chloromethyl ether	[Methane, oxybis(chloro-)]	542-88-1	1.00	1,000					X						
Chloromethyl methyl ether	[Methane, chloromethoxy-]	107-30-2	1.00	5,000					X						
1-Chloropropylene	[1-Propene, 1-chloro-]	590-21-6	1.00	10,000						X					
2-Chloropropylene	[1-Propene, 2-chloro-]	557-98-2	1.00	10,000						X					

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
Chlorosarin	[o-Isopropyl methylphosphonochloridate]	1445-76-7			CUM 100g							X			
Chlorosoman	[o-Pinacolyl methylphosphonochloridate]	7040-57-5			CUM 100g							X			
Chlorosulfonic acid		7790-94-5					ACG	APA							X
Chromium oxychloride		14977-61-8					ACG	APA							X
Crotonaldehyde	[2-Butenal]	4170-30-3	1.00	10,000						X					
Crotonaldehyde, (E)-	[2-Butenal], (E)-]	123-73-9	1.00	10,000						X					
Cyanogen	[Ethanedinitrile]	460-19-5	1.00	10,000	11.67	45				X			X		
Cyanogen chloride		506-77-4	1.00	10,000	2.67	15			X				X		
Cyclohexylamine	[Cyclohexanamine]	108-91-8	1.00	15,000					X						
Cyclohexyltrichlorosilane		98-12-4					ACG	APA							X
Cyclopropane		75-19-4	1.00	10,000						X					
DF	Methyl phosphonyl difluoride	676-99-3			CUM 100g							X			
Diazodinitrophenol		87-31-0	ACG	5,000	ACG	400					X			X	
Diborane		19287-45-7	1.00	2,500	2.67	15			X				X		
Dichlorosilane	[Silane, dichloro-]	4109-96-0	1.00	10,000	10.47	45				X			X		
N,N-(2-diethylamino)ethanethiol		100-38-9			30.00	2.2						X			
Diethyldichlorosilane		1719-53-5					ACG	APA							X
o,o-Diethyl S-[2-(diethylamino)ethyl] phosphorothiolate		78-53-5			30.00	2.2						X			
Diethyleneglycol dinitrate		693-21-0	ACG	5,000	ACG	400					X			X	
Diethyl methylphosphonite		15715-41-0			30.00	2.2						X			
N,N-Diethyl phosphoramidic dichloride		1498-54-0			30.00	2.2						X			
N,N-(2-diisopropylamino)ethanethiol	N,N-diisopropyl-(beta)-aminoethane thiol	5842-07-9			30.00	2.2						X			

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release -- Toxic	Release -- Flammables	Release -- Explosives	Theft -- CW/CWP	Theft -- WME	Theft -- EXP/IEDP	Sabotage/Contamination
Difluoroethane	[Ethane, 1,1-difluoro-]	75-37-6	1.00	10,000						X					
N,N-Diisopropyl phosphoramidic dichloride		23306-80-1			30.00	2.2						X			
1,1-Dimethylhydrazine	[Hydrazine, 1, 1-dimethyl-]	57-14-7	1.00	10,000						X					
Dimethylamine	[Methanamine, N-methyl-]	124-40-3	1.00	10,000						X					
N,N-(2-dimethylamino)ethanethiol		108-02-1			30.00	2.2						X			
Dimethyldichlorosilane	[Silane, dichlorodimethyl-]	75-78-5	1.00	10,000			ACG	APA		X					X
N,N-Dimethyl phosphoramidic dichloride	[Dimethylphosphoramido-dichloridate]	677-43-0			30.00	2.2						X			
2,2-Dimethylpropane	[Propane, 2,2-dimethyl-]	463-82-1	1.00	10,000						X					
Dingu	[Dinitroglycoluril]	55510-04-8	ACG	5,000	ACG	400					X			X	
Dinitrogen tetroxide		10544-72-6			3.80	15							X		
Dinitrophenol		25550-58-7	ACG	5,000	ACG	400					X			X	
Dinitroresorcinol		519-44-8	ACG	5,000	ACG	400					X			X	
Diphenyldichlorosilane		80-10-4					ACG	APA							X
Dipicryl sulfide		2217-06-3	ACG	5,000	ACG	400					X			X	
Dipicrylamine [or] Hexyl	[Hexanitrodiphenylamine]	131-73-7	ACG	5,000	ACG	400					X			X	
N,N-(2-dipropylamino)ethanethiol		5842-06-8			30.00	2.2						X			
N,N-Dipropyl phosphoramidic dichloride		40881-98-9			30.00	2.2						X			
Dodecyltrichlorosilane		4484-72-4					ACG	APA							X
Epichlorohydrin	[Oxirane, (chloromethyl)-]	106-89-8	1.00	20,000					X						
Ethane		74-84-0	1.00	10,000						X					
Ethyl acetylene	[1-Butyne]	107-00-6	1.00	10,000						X					
Ethyl chloride	[Ethane, chloro-]	75-00-3	1.00	10,000						X					
Ethyl ether	[Ethane, 1,1-oxybis-]	60-29-7	1.00	10,000						X					
Ethyl mercaptan	[Ethanethiol]	75-08-1	1.00	10,000						X					

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
Ethyl nitrite	[Nitrous acid, ethyl ester]	109-95-5	1.00	10,000						X					
Ethyl phosphonyl difluoride		753-98-0			CUM 100g							X			
Ethylamine	[Ethanamine]	75-04-7	1.00	10,000						X					
Ethyldiethanolamine		139-87-7			80.00	220						X			
Ethylene	[Ethene]	74-85-1	1.00	10,000						X					
Ethylene oxide	[Oxirane]	75-21-8	1.00	10,000						X					
Ethylenediamine	[1,2-Ethanediamine]	107-15-3	1.00	20,000					X						
Ethyleneimine	[Aziridine]	151-56-4	1.00	10,000						X					
Ethylphosphonothioic dichloride		993-43-1			30.00	2.2						X			
Ethyltrichlorosilane		115-21-9					ACG	APA							X
Fluorine		7782-41-4	1.00	1,000	6.17	15			X				X		
Fluorosulfonic acid		7789-21-1					ACG	APA							X
Formaldehyde (solution)		50-00-0	1.00	15,000					X						
Furan		110-00-9	1.00	10,000						X					
Germane		7782-65-2			20.73	45							X		
Germanium tetrafluoride		7783-58-6			2.11	15							X		
Guanyl nitrosaminoguanylidene hydrazine			ACG	5,000	ACG	400					X			X	
Hexaethyl tetraphosphate and compressed gas mixtures		757-58-4			33.37	500							X		
Hexafluoroacetone		684-16-2			15.67	45							X		
Hexanitrostilbene		20062-22-0	ACG	5,000	ACG	400					X			X	
Hexolite	[Hexotol]	121-82-4	ACG	5,000	ACG	400					X			X	
Hexyltrichlorosilane		928-65-4					ACG	APA							X
HMX	[Cyclotetramethylene-tetranitramine]	2691-41-0	ACG	5,000	ACG	400					X			X	

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
HN1 (nitrogen mustard-1)	[Bis(2-chloroethyl)ethylamine]	538-07-8			CUM 100g							X			
HN2 (nitrogen mustard-2)	[Bis(2-chloroethyl)methylamine]	51-75-2			CUM 100g							X			
HN3 (nitrogen mustard-3)	[Tris(2-chloroethyl)amine]	555-77-1			CUM 100g							X			
Hydrazine		302-01-2	1.00	10,000						X					
Hydrochloric acid (conc. 37% or greater)		7647-01-0	37.00	15,000					X						
Hydrocyanic acid		74-90-8	1.00	2,500					X						
Hydrofluoric acid (conc. 50% or greater)		7664-39-3	50.00	1,000					X						
Hydrogen		1333-74-0	1.00	10,000						X					
Hydrogen bromide (anhydrous)		10035-10-6			95.33	500							X		
Hydrogen chloride (anhydrous)		7647-01-0	1.00	5,000	ACG	500			X				X		
Hydrogen cyanide	[Hydrocyanic acid]	74-90-8			4.67	15							X		
Hydrogen fluoride (anhydrous)		7664-39-3	1.00	1,000	42.53	45			X				X		
Hydrogen iodide, anhydrous		10034-85-2			95.33	500							X		
Hydrogen peroxide (concentration of at least 35%)		7722-84-1			35.00	400								X	
Hydrogen selenide		7783-07-5	1.00	10,000	0.07	15				X			X		
Hydrogen sulfide		7783-06-4	1.00	10,000	23.73	45			X				X		
Iodine pentafluoride		7783-66-6					ACG	APA							X
Iron, pentacarbonyl-	[Iron carbonyl (Fe (CO)5), (TB5-11)-]	13463-40-6	1.00	10,000						X					
Isobutane	[Propane, 2-methyl]	75-28-5	1.00	10,000						X					
Isobutyronitrile	[Propanenitrile, 2-methyl-]	78-82-0	1.00	20,000					X						
Isopentane	[Butane, 2-methyl-]	78-78-4	1.00	10,000						X					
Isoprene	[1,3-Butadiene, 2-methyl-]	78-79-5	1.00	10,000						X					

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
Isopropyl chloride	[Propane, 2-chloro-]	75-29-6	1.00	10,000						X					
Isopropyl chloroformate	[Carbonochloridic acid, 1-methylethyl ester]	108-23-6	1.00	15,000					X						
Isopropylamine	[2-Propanamine]	75-31-0	1.00	10,000						X					
Isopropylphosphonothioic dichloride		1498-60-8			30.00	2.2						X			
Isopropylphosphonyl difluoride		677-42-9			CUM 100g							X			
Lead azide		13424-46-9	ACG	5,000	ACG	400					X			X	
Lead styphnate	[Lead trinitroresorcinate]	15245-44-0	ACG	5,000	ACG	400					X			X	
Lewisite 1	[2-Chlorovinyldichloroarsine]	541-25-3			CUM 100g							X			
Lewisite 2	[Bis(2-chlorovinyl)chloroarsine]	40334-69-8			CUM 100g							X			
Lewisite 3	[Tris(2-chlorovinyl)arsine]	40334-70-1			CUM 100g							X			
Lithium amide		7782-89-0					ACG	APA							X
Lithium nitride		26134-62-3					ACG	APA							X
Magnesium (powder)		7439-95-4			ACG	100								X	
Magnesium diamide		7803-54-5					ACG	APA							X
Magnesium phosphide		12057-74-8					ACG	APA							X
MDEA	[Methyldiethanolamine]	105-59-9			80.00	220						X			
Mercury fulminate		628-86-4	ACG	5,000	ACG	400					X			X	
Methacrylonitrile	[2-Propenenitrile, 2-methyl-]	126-98-7	1.00	10,000					X						
Methane		74-82-8	1.00	10,000						X					
2-Methyl-1-butene		563-46-2	1.00	10,000						X					
3-Methyl-1-butene		563-45-1	1.00	10,000						X					
Methyl chloride	[Methane, chloro-]	74-87-3	1.00	10,000						X					
Methyl chloroformate	[Carbonochloridic acid, methyl ester]	79-22-1	1.00	10,000						X					
Methyl ether	[Methane, oxybis-]	115-10-6	1.00	10,000						X					
Methyl formate	[Formic acid Methyl ester]	107-31-3	1.00	10,000						X					

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release -- Toxic	Release -- Flammables	Release -- Explosives	Theft -- CW/CWP	Theft -- WME	Theft -- EXP/IEDP	Sabotage/Contamination
Methyl hydrazine	[Hydrazine, methyl-]	60-34-4	1.00	15,000					X						
Methyl isocyanate	[Methane, isocyanato-]	624-83-9	1.00	10,000					X						
Methyl mercaptan	[Methanethiol]	74-93-1	1.00	10,000	45.00	500				X			X		
Methyl thiocyanate	[Thiocyanic acid, methyl ester]	556-64-9	1.00	20,000					X						
Methylamine	[Methanamine]	74-89-5	1.00	10,000						X					
Methylchlorosilane		993-00-0			20.00	45							X		
Methyldichlorosilane		75-54-7					ACG	APA							X
Methylphenyldichlorosilane		149-74-6					ACG	APA							X
Methylphosphonothioic dichloride		676-98-2			30.00	2.2						X			
2-Methylpropene	[1-Propene, 2-methyl-]	115-11-7	1.00	10,000						X					
Methyltrichlorosilane	[Silane, trichloromethyl-]	75-79-6	1.00	10,000			ACG	APA		X					X
Sulfur mustard (Mustard gas (H))	[Bis(2-chloroethyl)sulfide]	505-60-2			CUM 100g							X			
O-Mustard (T)	[Bis(2-chloroethylthioethyl)ether]	63918-89-8			CUM 100g							X			
Nickel Carbonyl		13463-39-3	1.00	10,000						X					
Nitric acid		7697-37-2	80.00	15,000	68.00	400			X					X	
Nitric oxide	[Nitrogen oxide (NO)]	10102-43-9	1.00	10,000	3.83	15			X				X		
Nitrobenzene		98-95-3			ACG	100								X	
5-Nitrobenzotriazol		2338-12-7	ACG	5,000	ACG	400					X			X	
Nitrocellulose		9004-70-0	ACG	5,000	ACG	400					X			X	
Nitrogen mustard hydrochloride	[Bis(2-chloroethyl)methylamine hydrochloride]	55-86-7			30.00	2.2						X			
Nitrogen trioxide		10544-73-7			3.83	15							X		
Nitroglycerine		55-63-0	ACG	5,000	ACG	400					X			X	
Nitromannite	[Mannitol hexanitrate, wetted]	15825-70-4	ACG	5,000	ACG	400					X			X	
Nitromethane		75-52-5			ACG	400								X	
Nitrostarch		9056-38-6	ACG	5,000	ACG	400					X			X	
Nitrosyl chloride		2696-92-6			1.17	15							X		

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release -- Toxic	Release -- Flammables	Release -- Explosives	Theft -- CW/CWP	Theft -- WME	Theft -- EXP/IEDP	Sabotage/Contamination
Nitrotriazolone		932-64-9	ACG	5,000	ACG	400					X			X	
Nonyltrichlorosilane		5283-67-0					ACG	APA							X
Octadecyltrichlorosilane		112-04-9					ACG	APA							X
Octolite		57607-37-1	ACG	5,000	ACG	400					X			X	
Octonal		78413-87-3	ACG	5,000	ACG	400					X			X	
Octyltrichlorosilane		5283-66-9					ACG	APA							X
Oleum (Fuming Sulfuric acid)	[Sulfuric acid, mixture with sulfur trioxide]	8014-95-7	1.00	10,000					X						
Oxygen difluoride		7783-41-7			0.09	15							X		
1,3-Pentadiene		504-60-9	1.00	10,000						X					
Pentane		109-66-0	1.00	10,000						X					
1- Pentene		109-67-1	1.00	10,000						X					
2-Pentene, (E)-		646-04-8	1.00	10,000						X					
2-Pentene, (Z)-		627-20-3	1.00	10,000						X					
Pentolite		8066-33-9	ACG	5,000	ACG	400					X			X	
Peracetic acid	[Ethaneperoxic acid]	79-21-0	1.00	10,000						X					
Perchloromethylmercaptan	[Methanesulfenyl chloride, trichloro-]	594-42-3	1.00	10,000					X						
Perchloryl fluoride		7616-94-6			25.67	45							X		
PETN	[Pentaerythritol tetranitrate]	78-11-5	ACG	5,000	ACG	400					X			X	
Phenyltrichlorosilane		98-13-5					ACG	APA							X
Phosgene	[Carbonic dichloride] or [carbonyl dichloride]	75-44-5	1.00	500	0.17	15			X				X		
Phosphine		7803-51-2	1.00	10,000	0.67	15				X			X		
Phosphorus		7723-14-0			ACG	400								X	
Phosphorus oxychloride	[Phosphoryl chloride]	10025-87-3	1.00	5,000	80.00	220	ACG	APA	X			X			X
Phosphorus pentabromide		7789-69-7					ACG	APA							X
Phosphorus pentachloride		10026-13-8					ACG	APA							X
Phosphorus pentasulfide		1314-80-3					ACG	APA							X

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
Phosphorus trichloride		7719-12-2	1.00	15,000	3.48	45	ACG	APA	X				X		X
Picrite	[Nitroguanidine]	556-88-7	ACG	5,000	ACG	400					X			X	
Piperidine		110-89-4	1.00	10,000						X					
Potassium chlorate		3811-04-9			ACG	400								X	
Potassium cyanide		151-50-8					ACG	APA							X
Potassium nitrate		7757-79-1			ACG	400								X	
Potassium perchlorate		7778-74-7			ACG	400								X	
Potassium permanganate		7722-64-7			ACG	400								X	
Potassium phosphide		20770-41-6					ACG	APA							X
Propadiene	[1,2-Propadiene]	463-49-0	1.00	10,000						X					
Propane		74-98-6	1.00	60,000						X					
Propionitrile	[Propanenitrile]	107-12-0	1.00	10,000					X						
Propyl chloroformate	[Carbonchloridic acid, propylester]	109-61-5	1.00	10,000						X					
Propylene	[1-Propene]	115-07-1	1.00	10,000						X					
Propylene oxide	[Oxirane, methyl-]	75-56-9	1.00	10,000						X					
Propyleneimine	[Aziridine, 2-methyl-]	75-55-8	1.00	10,000					X						
Propylphosphonothioic dichloride		2524-01-8			30.00	2.2						X			
Propylphosphonyl difluoride		690-14-2			CUM 100g							X			
Propyltrichlorosilane		141-57-1					ACG	APA							X
Propyne	[1-Propyne]	74-99-7	1.00	10,000						X					
QL	[o-Ethyl-o-2-diisopropylaminoethyl methylphosphonite]	57856-11-8			CUM 100g							X			
RDX	[Cyclotrimethylenetrinitramine]	121-82-4	ACG	5,000	ACG	400					X			X	
RDX and HMX mixtures		121-82-4	ACG	5,000	ACG	400					X			X	
Sarin	[o-Isopropyl methylphosphonofluoridate]	107-44-8			CUM 100g							X			
Selenium hexafluoride		7783-79-1			1.67	15							X		

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
Sesquimustard	[1,2-Bis(2-chloroethylthio)ethane]	3563-36-8			CUM 100g							X			
Silane		7803-62-5	1.00	10,000						X					
Silicon tetrachloride		10026-04-7					ACG	APA							X
Silicon tetrafluoride		7783-61-1			15.00	45							X		
Sodium azide		26628-22-8			ACG	400								X	
Sodium chlorate		7775-09-9			ACG	400								X	
Sodium cyanide		143-33-9					ACG	APA							X
Sodium hydrosulfite	[Sodium dithionite]	7775-14-6					ACG	APA							X
Sodium nitrate		7631-99-4			ACG	400								X	
Sodium phosphide		12058-85-4					ACG	APA							X
Soman	[o-Pinacolyl methylphosphonofluoridate]	96-64-0			CUM 100g							X			
Stibine		7803-52-3			0.67	15							X		
Strontium phosphide		12504-16-4					ACG	APA							X
Sulfur dioxide (anhydrous)		7446-09-5	1.00	5,000	84.00	500			X				X		
Sulfur tetrafluoride	[Sulfur fluoride (SF4), (T-4)-]	7783-60-0	1.00	2,500	1.33	15			X				X		
Sulfur trioxide		7446-11-9	1.00	10,000					X						
Sulfuryl chloride		7791-25-5					ACG	APA							X
Tabun	[o-Ethyl-N,N-dimethylphosphoramido-cyanidate]	77-81-6			CUM 100g							X			
Tellurium hexafluoride		7783-80-4			0.83	15							X		
Tetrafluoroethylene	[Ethene, tetrafluoro-]	116-14-3	1.00	10,000						X					
Tetramethyllead	[Plumbane, tetramethyl-]	75-74-1	1.00	10,000					X						
Tetramethylsilane	[Silane, tetramethyl-]	75-76-3	1.00	10,000						X					
Tetranitroaniline		53014-37-2	ACG	5,000	ACG	400					X			X	
Tetranitromethane	[Methane, tetranitro-]	509-14-8	1.00	10,000						X					
Tetrazene	[Guanyl nitrosaminoguanyltetrazene]	109-27-3	ACG	5,000	ACG	400					X			X	

Appendix A to Part 27. -- DHS Chemicals of Interest [1]

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
1H-Tetrazole		288-94-8	ACG	5,000	ACG	400					X			X	
Thiodiglycol	[Bis(2-hydroxyethyl)sulfide]	111-48-8			30.00	2.2						X			
Thionyl chloride		7719-09-7					ACG	APA							X
Titanium tetrachloride	[Titanium chloride (TiCl4) (T-4)-]	7550-45-0	1.00	2,500	13.33	45	ACG	APA	X				X		X
TNT	[Trinitrotoluene]	118-96-7	ACG	5,000	ACG	400					X			X	
Torpex	[Hexotonal]	67713-16-0	ACG	5,000	ACG	400					X			X	
Trichlorosilane	[Silane, trichloro-]	10025-78-2	1.00	10,000			ACG	APA		X					X
Triethanolamine		102-71-6			80.00	220						X			
Triethanolamine hydrochloride		637-39-8			80.00	220						X			
Triethyl phosphite		122-52-1			80.00	220						X			
Trifluoroacetyl chloride		354-32-5			6.93	45							X		
Trifluorochloroethylene	[Ethene, chlorotrifluoro]	79-38-9	1.00	10,000	66.67	500				X			X		
Trimethylamine	[Methanamine, N,N-dimethyl-]	75-50-3	1.00	10,000						X					
Trimethylchlorosilane	[Silane, chlorotrimethyl-]	75-77-4	1.00	10,000			ACG	APA		X					X
Trimethyl phosphite		121-45-9			80.00	220						X			
Trinitroaniline		26952-42-1	ACG	5,000	ACG	400					X			X	
Trinitroanisole		606-35-9	ACG	5,000	ACG	400					X			X	
Trinitrobenzene		99-35-4	ACG	5,000	ACG	400					X			X	
Trinitrobenzenesulfonic acid		2508-19-2	ACG	5,000	ACG	400					X			X	
Trinitrobenzoic acid		129-66-8	ACG	5,000	ACG	400					X			X	
Trinitrochlorobenzene		88-88-0	ACG	5,000	ACG	400					X			X	
Trinitrofluorenone		129-79-3	ACG	5,000	ACG	400					X			X	
Trinitro-meta-cresol		602-99-3	ACG	5,000	ACG	400					X			X	
Trinitronaphthalene		55810-17-8	ACG	5,000	ACG	400					X			X	
Trinitrophenetole		4732-14-3	ACG	5,000	ACG	400					X			X	
Trinitrophenol		88-89-1	ACG	5,000	ACG	400					X			X	
Trinitroresorcinol		82-71-3	ACG	5,000	ACG	400					X			X	
Tritonal		54413-15-9	ACG	5,000	ACG	400					X			X	
Tungsten hexafluoride		7783-82-6			7.10	45							X		

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Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #	Release		Theft		Sabotage		Security Issue						
			Minimum Concentration (%)	Screening Threshold Quantities (in pounds)	Minimum Concentration (%)	Screening Threshold Quantities (in pounds unless otherwise noted)	Minimum Concentration (%)	Screening Threshold Quantities	Release – Toxic	Release – Flammables	Release – Explosives	Theft – CW/CWP	Theft – WME	Theft – EXP/IEDP	Sabotage/Contamination
Vinyl acetate monomer	[Acetic acid ethenyl ester]	108-05-4	1.00	10,000						X					
Vinyl acetylene	[1-Buten-3-yne]	689-97-4	1.00	10,000						X					
Vinyl chloride	[Ethene, chloro-]	75-01-4	1.00	10,000						X					
Vinyl ethyl ether	[Ethene, ethoxy-]	109-92-2	1.00	10,000						X					
Vinyl fluoride	[Ethene, fluoro-]	75-02-5	1.00	10,000						X					
Vinyl methyl ether	[Ethene, methoxy-]	107-25-5	1.00	10,000						X					
Vinylidene chloride	[Ethene, 1,1-dichloro-]	75-35-4	1.00	10,000						X					
Vinylidene fluoride	[Ethene, 1,1-difluoro-]	75-38-7	1.00	10,000						X					
Vinyltrichlorosilane		75-94-5					ACG	APA							X
VX	[o-Ethyl-S-2-diisopropylaminoethyl methyl phosphonothiolate]	50782-69-9			CUM 100g							X			
Zinc hydrosulfite	[Zinc dithionite]	7779-86-4					ACG	APA							X

[1] The acronyms used in this appendix have the following meaning: ACG = A Commercial Grade; APA = A Placarded Amount; CW/CWP = Chemical Weapons/Chemical Weapons Precursors; WME = Weapons of Mass Effect; EXP/IEDP = Explosives/Improvised Explosive Device Precursors

Michael Chertoff,

Secretary of Homeland Security, Department of Homeland Security.

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