

COVER SHEET FOR FINAL PROPOSAL

Notice Number 2021-82

Rule Number Env-A 1400

1. Agency Name & Address:

Department of Environmental Services
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

2. RSA Authority: RSA 125-I:3, II;
RSA 125-I:4, II & III
3. Federal Authority: N/A
4. Type of Action:
 Adoption
 Repeal
 Readoption
 Readoption w/amendment

5. Short Title: **Regulated Toxic Air Pollutants**

6. Contact person for copies and questions:

Name: Karla McManus Title: ARD Planning and Rules Manager
Address: Department of Environmental Services Phone #: (603) 271-6854
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

7. Yes No Agency requests review by Committee legal staff in the Office of Legislative Services and delayed Committee review pursuant to RSA 541-A:12, I-a

8. The rulemaking notice appeared in the Rulemaking Register on **August 19, 2021**.

**SEE THE INSTRUCTIONS--PLEASE SUBMIT 2 COPIES OF THIS COVER SHEET
AND 2 COPIES OF THE FOLLOWING:
(and numbered correspondingly)**

9. The “Final Proposal-Fixed Text”, including the cross-reference table required by RSA 541-A:3-a, II as an appendix.

10. Yes N/A Incorporation by Reference Statement(s) because this rule incorporates a document or Internet content by reference for which an Incorporation by Reference Statement is required pursuant to RSA 541-A:12, III.

11. Yes N/A The “Final Proposal-Annotated Text” indicating how the proposed rule was changed because the text of the rule changed from the Initial Proposal pursuant to RSA 541-A:12, II(e).

12. Yes N/A The amended fiscal impact statement because the change to the text of the Initial Proposal affects the original fiscal impact statement (FIS) pursuant to RSA 541-A:5, VI.

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5. Short Title: **Regulated Toxic Air Pollutants**

6. (a) Summary of what the rule says and of any proposed amendments:

Env-A 1400, Regulated Toxic Air Pollutants, implements RSA 125-I, the Air Toxic Control Act (Act), by listing regulated toxic air pollutants (RTAPs), classifying them, and establishing ambient air limits (AALs). The purpose of this chapter is to prevent, control, abate, and limit the emissions of toxic air pollutants into the ambient air. The ambient air limits established under this rule are intended to promote public health by reducing human exposure to toxic air pollutants.

The Department proposes changes to the list of RTAPs and their AALs every few years to reflect updates made to the list of chemical substances by the American Conference of Governmental Industrial Hygienists (ACGIH) and the US EPA's Integrated Risk Information System (IRIS), as contemplated by RSA 125-I. In this rulemaking, the ACGIH and IRIS updates for 2017, 2018, and 2019 are proposed to be incorporated. In that time frame, a total of 121 new chemical substances were added and 21 were removed. The Occupational Exposure Limit (OEL) or reference concentration (RfC) have been changed for 40 substances, which results in a change to their AALs. Name corrections/changes have been made for 90 RTAPs mainly due to the addition of "inhalable fraction", "respirable fraction", or "inhalable fraction and vapor" by ACGIH.

The Department has adopted a convention of rounding AALs to two significant figures based on the following US EPA guidance document: *Issuance of the Clean Air Act National Stack Testing Guidance from Lisa Lund, Director of the Office of Compliance*, issued April 27, 2009 to the EPA Regional Compliance/Enforcement Division Directors.

The Department also proposes to add the following definitions to Env-A 1401.03, Definitions:

- "Inhalable fraction"
- "Inhalable fraction and vapor"
- "Respirable fraction"
- "Thoracic particulate matter"
- "Uncontrolled emission" (as defined in RSA 125-I:2, XVII)

The particulate fraction notations are used and defined by ACGIH to delineate which portion of a chemical is subject to the occupational exposure value used by the Department to calculate the corresponding AALs. Inclusion of these definitions will give clarity to the regulated community that is necessary when determining compliance with the rule.

In addition to the required updates, the Department is proposing to reorganize the rules to give the regulated community a clearer path to compliance. Specifically, parts Env A 1403 through Env-A 1405 have been rearranged and renumbered as discussed below.

Env-A 1403, Compliance Standards – formerly Permit Requirements. This part will now describe the compliance obligations under the rule.

Env-A 1404, Methods of Demonstrating Compliance – currently Env-A 1405. This part will continue to outline the calculation methods a source may use to determine the emissions of RTAPs. Two sections within Env-A 1404 are proposed to be revised as follows:

- Env-A 1404.06, Alternative Methods – clarifies what information will be required for sources requesting the use of the alternative compliance method, and that with any alternative method used, the source must still demonstrate compliance with the AALs.
- Env-A 1404.07, Compliance with Compliance Boundaries; Alternate Compliance Boundaries contains added language to:
 - Require sources to comply with AALs on any part of their property that is leased to another entity; and
 - Establish the procedures and criteria for establishing an “alternate compliance boundary” pursuant to RSA 125-I:6 III (c).

Env-A 1405, Permit Required – currently Env-A 1403. This part describes the conditions under which a facility would be required to have a permit, and combines existing Env-A 1403.01 and Env-A 1403.03 with two new sections that provide more detail about obtaining a permit and the process for revising the RTAP list or a compliance boundary.

In addition to the above, existing Env-A 1404, Application Procedures, is proposed to be renumbered as Env-A 1406, existing Env-A 1406 is proposed to be renumbered as Env-A 1407, and existing Env-A 1407 is proposed to be merged into existing Env-A 1408.

6. (b) Brief description of the groups affected:

Sources emitting toxic air pollutants into the ambient air will be affected.

6. (c) Specific section or sections of state statute or federal statute or regulation which the rule is intended to implement:

Rule	State Statutes Implemented
Env-A 1401	RSA 125-I:1; RSA 125-I:2; RSA 125-I:3, I & II
Env-A 1402.01(a) & (b)	RSA 125-I:3, III(a)
Env-A 1402.01(c) & (d)	RSA 125-I:3, III(b)
Env-A 1402.02	RSA 125-I:3, III(c)
Env-A 1402.03	RSA 125-I:3, III(c)
Env-A 1403.01 & 1403.02	RSA 125-I:3, I; RSA 125-I:5, I & V
Env-A 1404	RSA 125-I:5, V
Env-A 1404.07	RSA 125-I:5, V & RSA 125-I:2, VI
Env-A 1405.01	RSA 125-I:3, I; RSA 125-I:5, I & V
Env-A 1405.02-1405.04	RSA 125-I:1; RSA 125-I:2; RSA 125-I:3, I & II
Env-A 1406	RSA 125-I:5, I & IV
Env-A 1407	RSA 125-I:2, XIV; RSA 125-I:4
Env-A 1408 - 1411	RSA 125-I:4
Env-A 1412	RSA 125-I:4, V
Env-A 1413	RSA 125-I:1; RSA 125-I:5
Env-A 1450	RSA 125-I:4

7. Contact person for copies and questions including requests to accommodate persons with disabilities:

Name: **Karla McManus** Title: **DES-ARD Planning and Rules Manager**
Address: **Department of Environmental Services** Phone #: **(603) 271-6854**
29 Hazen Drive Fax#: **(603) 271-1381**
P.O. Box 95 E-mail: **Karla.S.McManus@des.nh.gov**
Concord, NH 03302-0095

The rules also can be viewed in PDF in the Public Comment Opportunities section of the NHDES website at <https://www.des.nh.gov/public-comment-opportunities> and selecting “Rulemaking”

TTY/TDD Access: Relay NH 1-800-735-2964 or dial 711 (in NH)

8. Deadline for submission of materials in writing or, if practicable for the agency, in the electronic format specified: **4:00 p.m. on Friday, October 8, 2021**

Fax

E-mail

Other format (specify):

9. Public hearing scheduled for:

Date and Time: **Wednesday, September 29, 2021 at 10:00 AM**

Place:

**DES Offices
Room 208C
29 Hazen Drive, Concord NH**

NOTE: NHDES security procedures require all visitors to sign in and present photo identification (such as a driver’s license). If you plan to attend the public hearing in person, please bring photo identification with you.

You also may attend the hearing via WebEx, which can be accessed through the following link:

<https://nhgov.webex.com/nhgov/j.php?MTID=m4e955fc585a299f20bb19c220310360d>

Meeting number (access code): 1806 08 5766

Meeting password: nRxiQUe9V85

You also may join the meeting by phone:

Call in Number: +1-415-655-0001 US Toll

Access Code: 180 608 5766

Contact Karla McManus at Karla.S.McManus@des.nh.gov or (603) 271-6854 if you have any questions or technical issues connecting to the hearing.

10. Fiscal Impact Statement (Prepared by Legislative Budget Assistant):

FIS # **21:061**, dated **06/02/2021**:

1. Comparison of the costs of the proposed rule(s) to the existing rule(s):

There is no difference in cost when comparing the proposed rules to the existing rules. Any costs associated with the proposed rules are attributable to RSA 125-I and not the rules.

2. Cite the Federal mandate. Identify the impact on state funds:

No federal mandate, no impact on state funds.

3. Cost and benefits of the proposed rule(s):

A. To State general or State special funds:

None.

B. To State citizens and political subdivisions:

None.

C. To independently owned businesses:

None.

11. Statement Relative to Part I, Article 28-a of the N.H. Constitution:

The costs of the air toxic control program are attributable to the statute. The proposed rules and amendments thus do not create, expand, or modify any program or responsibility in such a way as to necessitate additional expenditures by political subdivisions, and thus do not violate Part I, Article 28-a of the N.H. Constitution.

Readopt with amendment Env-A 1400, effective 1-5-18 (Document #12443), to read as follows:

CHAPTER Env-A 1400 REGULATED TOXIC AIR POLLUTANTS

Statutory Authority: RSA 125-I:6

PART Env-A 1401 PURPOSE AND APPLICABILITY; DEFINITION

Env-A 1401.01 Purpose.

(a) The purpose of this chapter is to implement RSA 125-I relative to preventing, controlling, abating, and limiting the emissions of toxic air pollutants into the ambient air.

(b) The ambient air limits (AALs) established in this chapter are intended to promote public health by reducing human exposure to toxic air pollutants as required by RSA 125-I:1.

Env-A 1401.02 Applicability. This chapter shall apply to the owner or operator of any new, modified, or existing process or device located at a stationary source that emits a regulated toxic air pollutant (RTAP) into the ambient air, unless exempted under Env-A 1402.

Env-A 1401.03 Definitions. For purposes of this part, the following definitions shall apply:

(a) “Accidental release” means an unanticipated emission of an RTAP into the ambient air from a stationary source, process or device, either caused by an unintentional spill or a malfunction as defined in Env-A 104;

(b) “Biodiesel” means a diesel fuel substitute that is composed of mono-alkyl esters of long chain fatty acids, is derived from vegetable oils or animal fats, and meets the requirements of the American Society for Testing and Materials (ASTM) specification D6751;

(c) “Biofuel” means bio-oil, bio synthetic gas, or biodiesel, alone or in any combination;

(d) “Biomass” means “biomass” as defined in RSA 125-C:2, III-a, reprinted in Appendix B. The term does not include any mixture containing the wood component of construction and demolition debris or any material or mixture containing sewage sludge, industrial sludge, medical waste, hazardous waste, household or municipal waste, animal or human remains, animal or human waste, or radioactive waste;

(e) “Bio-oil” means a liquid fuel derived from vegetable oils, animal fats, wood, straw, forestry byproducts, or agricultural byproducts using noncombustion thermal, chemical, or biological processes, including, but not limited to, distillation, gasification, hydrolysis, or pyrolysis, but not including anaerobic digestion, composting, or incineration;

(f) “Bio synthetic gas” means a gaseous fuel derived from vegetable oils, animal fats, wood, straw, forestry byproducts, or agricultural byproducts using noncombustion thermal, chemical, or biological processes, including, but not limited to, distillation, gasification, hydrolysis, or pyrolysis, but not including anaerobic digestion, composting, or incineration;

(g) “Compliance boundary” means “compliance boundary” as defined in RSA 125-I:2 VI, reprinted in Appendix B, which is subject to the alternate compliance boundaries described in Env-A 1404.07;

(h) “Inhalable fraction” means those materials that are hazardous when deposited anywhere in the respiratory tract and have an aerodynamic diameter of less than or equal to 100 micrometers (μm);

(i) “Inhalable fraction and vapor” means a material that might be present in both the particulate and vapor phases;

(j) “Particulate RTAP” means an RTAP that is a solid at ambient temperature;

(k) “Processed landfill gas” means gaseous fuel that does not contain more than 0.5 ppm of total siloxanes;

(l) “Pump station” means a facility that is part of a publicly owned treatment works (POTW), that consists of pumps and service equipment designed to pump wastewater from one location to another or from one elevation to another, in order to allow continuous treatment within the POTW;

(m) “Respirable fraction” means a material that is hazardous when deposited in the gas-exchange region of the lungs with an aerodynamic diameter less than 4.0 μm ;

(n) “Thoracic particulate matter” means a material that is hazardous when deposited anywhere within the lung airways and the gas-exchange region and is less than 25 μm in size; and

(o) “Uncontrolled emission” means “uncontrolled emission” as defined in RSA 125-I:2, XVII, reprinted in Appendix B.

PART Env-A 1402 EXEMPTIONS FROM APPLICABILITY

Env-A 1402.01 Statutory Exemptions for Sources and Activities. As specified in RSA 125-I:3, III(a) and (b), the following shall be exempt from regulation under RSA 125-I and these rules:

- (a) Normal agricultural operations;
- (b) The application of pesticides regulated pursuant to RSA 430:28 through RSA 430:48;
- (c) Emissions of RTAPs resulting from mobile sources; and
- (d) Emissions of RTAPs resulting from the combustion of virgin petroleum products at stationary sources.

Env-A 1402.02 Additional Exemptions for Sources and Activities. Pursuant to RSA 125-I:3, III(c), emissions of RTAPs from devices or processes at a stationary source shall be exempt from the requirements of this chapter if the emissions of such RTAPs are from, or result from, any of the following sources or activities:

- (a) The combustion of one or more of the following fuels:
 - (1) Coal;
 - (2) Natural gas;
 - (3) Propane;
 - (4) Biofuels as defined in Env-A 1401.03(c);
 - (5) Biomass as defined in Env-A 1401.03(d); or
 - (6) Processed landfill gas as defined in Env-A 1401.03(k);
- (b) A gasoline dispensing or storage facility or cargo truck as regulated pursuant to Env-A 1217 or Env-Or 500;
- (c) An exempt activity as classified in Env-A 609;
- (d) A pneumatic transfer system for collecting sander dust which uses a baghouse that is operated and maintained in accordance with the manufacturer’s specifications;
- (e) Non-metallic mineral processing plants, as defined in Env-A 2800;

- (f) Wastewater evaporators that do not process wastewater containing volatile organic compounds (VOCs);
- (g) Used oil heaters that meet the following criteria:
 - (1) The sum of the gross heat input design ratings for all devices equals 500,000 Btu per hour or less;
 - (2) The sum of the fuel use rate for all devices equals 3.6 gallons per hour of fuel use or less;
 - (3) All devices burn 8,640 gallons per year or less of specification used oil as defined in Env-Hw 800;
 - (4) Each exhaust stack has an inside diameter of 8 inches or less;
 - (5) Each exhaust stack outlet is 20 feet or more above the ground;
 - (6) Each exhaust stack is vertical and unobstructed; and
 - (7) All devices are operated and maintained in accordance with manufacturer's specifications;
- (h) Spray coating operations used for maintenance limited to painting of process equipment using commercially available paints or coatings, but excluding VOC degreasing operations;
- (i) Crematoriums;
- (j) A publicly owned wastewater treatment facility that:
 - (1) Is not required to develop a pretreatment program to control pollutants received by the POTW from non-domestic sources, in accordance with 40 CFR 403, General Pretreatment Regulations for Existing and New Sources of Pollution; and
 - (2) Has a national pollutant discharge elimination system (NPDES) permit, in accordance with section 402 of the Clean Water Act, 33 U.S.C. 1251 et seq.;
- (k) A pump station which is part of a publicly owned wastewater treatment facility, in accordance with (j), above;
- (l) The use of consumer products in a manner consistent with how the general public would use the product;
- (m) An automotive refinishing operation that meets the following criteria:
 - (1) Each spray booth/station exhaust stack is vertical and unobstructed;
 - (2) The source is in compliance with the requirements of 40 CFR Part 63, Subpart HHHHHH; and
 - (3) The source uses less than 500 gallons per year of commercially available paints or coatings;
- (n) An air stripper or other equipment associated with soil venting that is used to remediate a petroleum or gasoline contaminated site, and equipment that is used to control petroleum or gasoline vapors at either a petroleum or gasoline contaminated site or at a site associated with a petroleum or gasoline contaminated site, provided that such equipment is located at or associated with a state-funded site, a superfund site, or is required under the provisions of a consent order or consent agreement with the department;
- (o) Routine maintenance activities associated with boilers;
- (p) The use of isopropyl alcohol, nitrous oxide, and ethylene oxide at health care facilities;
- (q) An accidental release as defined in Env-A 1401.03;

(r) Air strippers, soil venting equipment, or equipment used to control contaminated vapors operating for test purposes to qualify and quantify air emissions for remediation projects for a time period approved by the department;

(s) Solvent cleaning of parts and equipment performed exclusively by hand wiping or hand cleaning, provided that:

- (1) Less than 20 gallons per year are used; and
- (2) The used wipes are kept in closed containers;

(t) Process emissions from private, public, or vocational educational institutions, provided that:

- (1) The emissions are primarily the result of teaching and training exercises; and
- (2) The institution is not engaged in the manufacture of products for commercial sale;

(u) Degreasing and cleaning units that exclusively use aqueous caustic solutions at ambient temperatures in non-aeriated baths or tanks;

(v) Rooms, buildings, and warehouses used exclusively for:

- (1) Storing chemicals, provided such chemicals are stored in closed containers;
- (2) Filling chemical containers or transferring chemicals from one container to another for use within the facility; and
- (3) Sampling chemicals for quality assurance and quality control purposes;

(w) Powder coating operations;

(x) Surface coating at facilities that do not spray apply coatings containing strontium chromate (CAS #7789-06-02) and have actual VOC emissions of 1,000 pounds or less in any 12-month period from all coating materials, coating material components, other materials mixed with coating materials prior to application, and cleaning solvents; and

(y) Particulate RTAP emissions that are vented inside the building and, in aggregate, do not exceed 1,000 pounds in any consecutive 12-month period.

Env-A 1402.03 Additional Exemptions for Certain Air Contaminants. As authorized by RSA 125-I:3, III(c), the following emissions shall be exempt from this chapter:

(a) Emissions of a hazardous air pollutant (HAP), as defined in Env-A 103, from a process or device, provided that process or device uses the requisite pollution control equipment to comply with a national emission standard for HAPs as codified in 40 CFR 61 or 40 CFR 63;

(b) RTAP emissions from the process or device specified in (a), above, that are controlled by the requisite pollution control equipment to the same degree of efficiency as required by the national emission standard for the HAP emitted from that process or device;

(c) HAP emissions from a solid waste incineration unit that is subject to rules or plans authorized by, and adopted in accordance with, §129 of the Act, provided the unit uses the pollution control equipment required to comply with those rules or plans; and

(d) RTAP emissions from the solid waste incineration unit specified in (c), above, that are controlled to the same degree of efficiency as required by the rule or plan for the HAP emitted from that unit.

PART Env-A 1403 COMPLIANCE STANDARDS

{Env-A 1403.01 moved, renumbered as Env-A 1405.01}

Env-A 1403.01 Compliance with Ambient Air Limits Required.

(a) The owner or operator of any process or device at a stationary source subject to this chapter shall manage emissions of RTAPs such that the concentrations of RTAPs in ambient air resulting from those emissions shall not exceed the AALs for those RTAPs at and beyond the compliance boundary for the stationary source.

(b) If the department revises the list of RTAPs or their respective AALs as set forth in Table 1450-1 in Env-A 1450.01, or revises compliance boundary criteria as set forth in Env-A 1404.07, the owner or operator of an existing stationary source, process or device shall comply with (a) above for any revised AAL, RTAP or compliance boundary either:

- (1) Within 90 days of notice of such final revision in the New Hampshire Rulemaking Register; or
- (2) On the schedule of a compliance plan approved in accordance with Env-A 1406.02.

Env-A 1403.02 Demonstration of Compliance with Ambient Air Limits Required.

(a) The owner or operator of a device or process at a stationary source shall demonstrate compliance with the AALs using one of the methods described in Env-A 1404.

(b) If the department revises the list of RTAPs or their respective AALs as set forth in Table 1450-1 in Env-A 1450.01, and the owner or operator of an existing process or device cannot demonstrate compliance with the revised list of RTAPs or their respective AALs, then the owner or operator shall comply with Env-A 1405.04 and Env-A 1406.02.

{Env-A 1403.03 moved, renumbered as Env-A 1405.02}

{Env-A 1404 moved, renumbered as Part Env-A 1406}

PART Env-A 1404 METHODS OF DEMONSTRATING COMPLIANCE

Env-A 1404.01 Methods of Demonstrating Compliance. The owner or operator of any device or process that emits a RTAP shall demonstrate compliance with the AALs by using at least one of the following methods:

- (a) Air dispersion modeling analysis as specified in Env-A 1404.02;
- (b) De minimis emission level method as specified in Env-A 1404.03;
- (c) In-stack concentration method as specified in Env-A 1404.04;
- (d) Adjusted in-stack concentration method as specified in Env-A 1404.05; or
- (e) Calculations, results, or analyses from an alternative method of compliance demonstration approved pursuant to Env-A 1404.06.

Env-A 1404.02 Air Dispersion Modeling Analysis. If air dispersion modeling analysis is selected, the owner or operator shall conduct an air pollution dispersion modeling impact analysis, in accordance with Env-A 606, demonstrating that the concentration of emissions of each RTAP is equal to or below the corresponding AAL at and beyond the compliance boundary.

Env-A 1404.03 De Minimis Emission Level Method.

(a) If the de minimis emission level method is selected, the owner or operator shall demonstrate that the emissions of each RTAP are equal to or below the appropriate de minimis level from Table 1450-1 in Env-A 1450.01; and

(b) The de minimis emission level method shall only be allowed when the airflow exiting the vent or stack is vertical and unobstructed.

Env-A 1404.04 In-stack Concentration Method. If the in-stack concentration method is selected, the owner or operator shall use the following equations to calculate that the emissions of each RTAP is equal to or below the corresponding AAL, where:

(a) "X" means:

(1) For devices or processes emitting from one stack, the emission rate of each RTAP in pounds per hour (lbs/hr); or

(2) For devices or processes emitting from more than one stack, the sum of emission rates of each RTAP from each stack in lbs/hr;

(b) "Y" means the emission rate of each RTAP in grams per second (g/sec) as determined by dividing X by 7.94, as shown in the formula below:

$$Y \text{ (g/sec)} = X \text{ (lbs/hr)} / 7.94$$

(c) "Z" means the emission rate of each RTAP in micrograms per second ($\mu\text{g/sec}$) as determined by multiplying Y by 10^6 , as shown in the formula below:

$$Z \text{ (\mu g/sec)} = Y \text{ (g/sec)} \times 10^6$$

(d) "A" means:

(1) For devices or processes emitting from one stack, the stack volume flow in actual cubic feet per minute (ft^3/min); or

(2) For devices or processes emitting from more than one stack, the sum of stack volume flows from each stack in actual ft^3/min ;

(e) "B" means the stack volume flow in actual cubic meters per second (m^3/sec) as determined by dividing A by 2119, as shown in the formula below:

$$B \text{ (m}^3/\text{sec)} = A \text{ (ft}^3/\text{min)} / 2119$$

(f) The in-stack concentration of each RTAP in micrograms per cubic meter ($\mu\text{g/m}^3$) from a device or process either emitting from a single stack or from more than one stack shall be calculated by dividing Z by B, as shown in the formula below:

$$\text{In-stack Concentration (\mu g/m}^3\text{)} = Z \text{ (\mu g/sec)} / B \text{ (m}^3/\text{sec)}$$

Env-A 1404.05 Adjusted In-stack Concentration Method.

(a) If the adjusted in-stack concentration method is selected, the owner or operator shall demonstrate that the adjusted in-stack concentration of the RTAP, as determined using the calculations in (c) or (d) below, is equal to or below the corresponding AAL.

(b) The adjusted in-stack concentration method shall only be allowed when the airflow exiting the vent or stack is vertical and unobstructed.

(c) For facilities where the edge of the building housing the process or device is less than 40 feet to the nearest compliance boundary, the adjusted in-stack concentration in $\mu\text{g}/\text{m}^3$ of an RTAP from a device or process emitting either from a single stack or from more than one stack shall be calculated by dividing the in-stack concentration in $\mu\text{g}/\text{m}^3$, determined in accordance with Env-A 1404.04, by 250, as shown in the formula below:

$$\text{Adjusted In-stack Concentration } (\mu\text{g}/\text{m}^3) = \frac{\text{In-stack Concentration } (\mu\text{g}/\text{m}^3)}{250}$$

(d) For facilities where the edge of the building housing the process or device is greater than or equal to 40 feet to the nearest compliance boundary, the adjusted in-stack concentration in $\mu\text{g}/\text{m}^3$ of an RTAP from a device or process emitting either from a single stack or from more than one stack shall be calculated by dividing the in-stack concentration in $\mu\text{g}/\text{m}^3$, determined in accordance with Env-A 1404.04, by 700, as shown in the formula below:

$$\text{Adjusted In-stack Concentration } (\mu\text{g}/\text{m}^3) = \frac{\text{In-stack Concentration } (\mu\text{g}/\text{m}^3)}{700}$$

Env-A 1404.06 Alternative Methods.

(a) Any person wishing to use a method for demonstrating compliance other than one specified in Env-A 1404.02 through Env-A 1404.05 shall submit a written proposal to the department for approval of the method as specified in (b), below.

(b) The proposal shall contain, at a minimum, the following information:

- (1) The identity, location, and description of the facility at which the alternative method is proposed to be used;
- (2) A description of the proposed alternative method and a description of each device or process to which the proposed alternative method will be applied;
- (3) The name and chemical abstracts service (CAS) registry number for each RTAP emitted from each device or process subject to Env-A 1400 to be assessed under the alternative method; and
- (4) Technical data and information to be used to demonstrate that:
 - a. The proposed alternative method would produce results that are at least as precise and accurate as those produced by the methods specified in Env-A 1404.02 through Env-A 1404.05; and
 - b. The concentration of each RTAP is less than or equal to the corresponding AAL.

(c) Within 60 days of receipt of a complete proposal, the department shall issue a written decision on the proposal. If the request is denied, the decision shall specify the reason(s) for the denial.

(d) The department shall not approve a proposal for use of an alternative method unless:

- (1) The request contains all of the information required by (b), above; and
- (2) The proposed alternate method produces results that are at least as precise and accurate as those produced by the methods specified in Env-A 1404.02 through Env-A 1404.05.

Env-A 1404.07 Compliance with Compliance Boundaries; Alternate Compliance Boundaries.

(a) A source shall comply with:

- (1) The property boundaries as established in the statutorily-defined compliance boundary in Env-A 1401.03, if the provisions of (b) or (c) below do not apply;

- (2) The boundary established pursuant to (b) or (c), below, if applicable; or
- (3) The source-specific boundary determined pursuant to (d), below.

(b) For a stationary source operating a process or device located in a building or premises pursuant to a lease, license, or any other agreement granting the right to use or occupy only a limited portion of the property upon which such process or device is located, the compliance boundary shall be the outer edge of that portion of the property under the direct control of the owner or operator of that stationary source.

(c) The owner or operator of a process or device at a stationary source subject to this chapter shall consider any part of the property that is leased to another entity either through a lease, license, or other agreement, as being beyond the compliance boundary.

(d) An owner or operator wishing to use a compliance boundary other than the boundary of the property on which the stationary source is located, or as described in (b) or (c), above, shall submit a written request to the department for approval of an alternate compliance boundary which includes, at a minimum, the following information:

- (1) The identity, location, and description of the facility at which the alternate compliance boundary is proposed to be used;
- (2) A description of the proposed alternate compliance boundary;
- (3) The name and CAS registry number for each RTAP emitted from each process or device subject to this chapter to be assessed using the alternative compliance boundary; and
- (4) Records demonstrating compliance in accordance with Env-A 1404, based upon the proposed alternate compliance boundary.

(e) Within 60 days of receipt of a complete request, the department shall make a decision on the request.

(f) The department shall approve a request for use of an alternate compliance boundary if:

- (1) The request contains all of the information required by (d), above; and
- (2) The proposed alternate compliance boundary would pose little risk to public health, in accordance with RSA 125-I:3, III(c).

(g) If the request is denied, the decision shall specify the reason(s) for the denial.

PART Env-A 1405 PERMIT REQUIRED

Env-A 1405.01 Permit Required. Except as provided in Env-A 1405.02, the owner or operator of a device or process subject to this chapter shall obtain a temporary permit, state permit to operate, or title V operating permit in accordance with Env-A 600, which specifies the conditions under which compliance with this chapter shall be maintained.

Env-A 1405.02 Exemption from Permit Requirement Based on Nature and Amount of Emissions.

(a) The owner or operator of any device or process shall not be required to obtain a permit under this chapter if facility-wide emissions of each RTAP meets one of the following conditions:

- (1) The uncontrolled emissions:
 - a. Are less than or equal to the applicable annual and 24-hour de minimis emission levels, using the de minimis emission level method described in Env-A 1404.03; or

b. Result in concentrations less than or equal to the applicable annual and 24-hour AALs using one of the methods described in Env-A 1404.02, Env-A 1404.04, Env-A 1404.05, or Env-A 1404.06, at and beyond the compliance boundary; or

(2) The uncontrolled actual emissions:

a. Are less than or equal to the applicable annual and 24-hour de minimis emission levels, using the de minimis emission level method described in Env-A 1404.03;

b. Result in concentrations less than or equal to the applicable annual and 24-hour AALs using the in-stack concentration method described in Env-A 1404.04; or

c. Result in concentrations less than or equal to 50 percent of the applicable annual and 24-hour AALs using one of the methods described in Env-A 1404.02, Env-A 1404.05, or Env-A 1404.06 at and beyond the compliance boundary.

(b) For purposes of this part, spray coating operations that demonstrate compliance with the spray booth filter provisions in 40 CFR 63.11173(e)(2)(i), subpart HHHHHH, “National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources”, shall not be considered control devices for the purposes of calculating emissions of particulate RTAPs.

Env-A 1405.03 Obtaining a Permit. Except as provided in Env-A 1405.04, the owner or operator of a process or device at a stationary source subject to this chapter, that requires a permit pursuant to Env-A 1405.01 shall obtain such a permit in accordance with Env-A 603.

Env-A 1405.04 Revision of List or Compliance Boundary by Department. If the department revises the list of RTAPs, their respective AALs, or compliance boundary in accordance with Env-A 1404.07(b) or (c) and as a result of such revision the owner or operator is required to obtain or modify a permit, the owner or operator shall file a complete application for such permit or permit modification, including a compliance plan, within 90 days of publication of such notice of final revision in the New Hampshire Rulemaking Register.

PART Env-A 1406 APPLICATION PROCEDURES

Env-A 1406.01 Application Procedures for New or Modified Devices or Processes.

(a) The owner or operator of a new or modified device or process requiring a permit under this chapter shall submit an application for a temporary permit in accordance with Env-A 607.03, and identify in detail the proposed operating conditions that the source will take to comply with the AALs, in accordance with Env-A 1403.

(b) Pursuant to RSA 125-I:5, I, the owner or operator shall not operate the device or process until a temporary permit is issued.

Env-A 1406.02 Application Procedures for Existing Sources Requiring a Permit after the List is Revised. If a permit is required to be obtained or modified in accordance with Env-A 1405.04, the owner or operator of such source shall:

(a) File an application for such permit or permit modification, in accordance with Env-A 612, within 90 days following publication of notice of such final revision in the New Hampshire Rulemaking Register; and

(b) Submit a compliance plan based on public health, and economic and technical considerations that shall contain, at a minimum, the following information:

(1) The name and CAS registry number for each RTAP emitted from each process or device subject to the compliance plan;

(2) The date upon which compliance with the applicable provisions will be achieved, which shall be no later than 3 years following publication of notice of such final revisions in the New Hampshire

Rulemaking Register;

- (3) A list of remedial measures, including the sequence of actions or operations with milestones for each action; and
- (4) A schedule for the submission of progress reports to the department.

PART Env-A 1407 CLASSIFICATION OF REGULATED TOXIC AIR POLLUTANTS

Env-A 1407.01 Classification of Regulated Toxic Air Pollutants.

- (a) As required by RSA 125-I:4, II, the department shall classify each RTAP as a class I RTAP, class II RTAP, or class III RTAP.
- (b) Such classifications shall be made in accordance with this part.

Env-A 1407.02 Criteria for Classification of Class I Regulated Toxic Air Pollutants. The department shall classify an RTAP as a class I RTAP if it meets at least one of the following criteria:

- (a) Pursuant to RSA 125-I:2, XIV(a), it is a group A, group B1, or group B2 carcinogen, as described in “Guidelines for Carcinogen Risk Assessment,” 51 Federal Register 33,992, at 34,000 (Sept. 24, 1986);
- (b) It is categorized as “Carcinogenic to Humans” or “Likely to be Carcinogenic to Humans” as described in EPA’s updated “Guidelines for Carcinogenic Risk Assessment,” 70 Federal Register 17765 to 17817 (April 7, 2005);
- (c) It is a category A1 or A2 carcinogen, as described in Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, published by the American Conference of Governmental Industrial Hygienists (ACGIH);
- (d) It has been demonstrated through at least one study conducted in accordance with generally accepted scientific principles that it is capable of inducing reproductive or developmental effects in experimental laboratory animals at doses less than or equal to 500 mg/kg; or
- (e) It has an acute toxicity where the:
 - (1) Oral LD₅₀ is less than or equal to 50 milligrams per kilogram of body weight (mg/kg);
 - (2) Inhalation LC₅₀ is less than or equal to 200 parts per million (ppm); or
 - (3) Dermal LD₅₀ is less than or equal to 200 mg/kg.

Env-A 1407.03 Criteria for Classification of Class II Regulated Toxic Air Pollutants. The department shall classify an RTAP as a class II RTAP if it does not qualify as a class I regulated toxic air pollutant and meets at least one of the following criteria:

- (a) Pursuant to RSA 125-I:2, XIV(b), it is a group C carcinogen, as described in “Guidelines for Carcinogen Risk Assessment,” 51 Federal Register 33,992, at 34,000 (Sept. 24, 1986);
- (b) It is categorized as “Suggestive Evidence of Carcinogenic Potential” as described in EPA’s updated “Guidelines for Carcinogenic Risk Assessment,” 70 Federal Register 17765 to 17817, April 7, 2005;
- (c) It is a category A3 carcinogen, as described in Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, published by the ACGIH;
- (d) It has been demonstrated through at least one study conducted in accordance with generally accepted scientific principles that it is capable of inducing reproductive or developmental effects in experimental laboratory animals at doses greater than 500 mg/kg;

(e) It has an acute toxicity where the:

- (1) Oral LD₅₀ is greater than 50 mg/kg but less than 500 mg/kg;
- (2) Inhalation LC₅₀ is greater than 200 ppm but less than 2,000 ppm; or
- (3) Dermal LD₅₀ is greater than 200 mg/kg but less than 1,000 mg/kg;

(f) It has been demonstrated through at least one study conducted in accordance with generally accepted scientific principles that it induces mutagenic effects; or

(g) It has been demonstrated through at least one study conducted in accordance with generally accepted scientific principles that it produces adverse chronic non-carcinogenic systemic effects.

Env-A 1407.04 Criteria for Classification of Class III Regulated Toxic Air Pollutants. As specified in RSA 125-I: 2, XIV(c), the department shall classify a RTAP as a class III regulated toxic air pollutant if it is any RTAP other than a class I or class II RTAP.

PART Env-A 1408 SAFETY FACTORS; TIME ADJUSTMENT FACTORS

Env-A 1408.01 Designation of Safety Factors. For the purpose of providing adequate protection to sensitive populations, the department shall designate a safety factor for each RTAP, as follows:

- (a) For a class I RTAP, the safety factor shall be 100;
- (b) For a class II RTAP, the safety factor shall be 71; and
- (c) For a class III RTAP, the safety factor shall be 24.

Env-A 1408.02 Designation of Time Adjustment Factors.

(a) In order to account for differing effects of certain chemicals over time, the department shall designate a time adjustment factor according to the characteristics of the RTAP, as described in Env-A 1408.03.

(b) The time adjustment factor shall be used to determine the AAL as specified in Env-A 1409.02.

Env-A 1408.03 Criteria for the Designation of Time Adjustment Factors. The department shall designate the time adjustment factors based on the following criteria:

- (a) The time adjustment factor shall be 1.0 for RTAPs that:
 - (1) Have an occupational exposure limit that is intended to primarily prevent irritation or discomfort; or
 - (2) For which there are essentially no known cumulative effects resulting from extended exposures to such pollutants at concentration levels at or near the occupational exposure limit;
- (b) The time adjustment factor shall be 2.0 for RTAPs that have an occupational exposure limit that is intended to prevent acute exposure effects;
- (c) The time adjustment factor shall be 2.5 for RTAPs that have a ceiling limit value set as an occupational exposure limit that is not intended to be exceeded at any time; and
- (d) The time adjustment factor shall be 2.8 for RTAPs that:
 - (1) Have an occupational exposure limit that is set by technological feasibility or commonly recognized good hygiene practice;

- (2) Present cumulative health hazards and have an occupational exposure limit intended to prevent excessive accumulation in the body from extended periods of exposure; or
- (3) Present both acute and cumulative health hazards.

PART Env-A 1409 DETERMINATION OF 24-HOUR AMBIENT AIR LIMITS

Env-A 1409.01 Determination of 24-Hour Ambient Air Limits.

(a) Where a reference concentration limit has been established by the EPA for an RTAP, the 24-hour AAL for that pollutant shall be the reference concentration limit if:

- (1) The RTAP causes developmental or reproductive effects; or
- (2) The annual AAL is based on the reference concentration limit, and the 24-hour AAL, as calculated in accordance with (b), below, is less than the reference concentration limit.

(b) In all cases other than those specified in (a), above, the 24-hour AAL shall be a modified occupational health standard as determined by the calculation specified in Env-A 1409.02.

Env-A 1409.02 Calculation of 24-Hour Ambient Air Limits.

- (a) "OEL" means the occupational exposure limit for the RTAP.
- (b) "SF" means the safety factor as determined by Env-A 1408.01.
- (c) "TAF" means the time adjustment factor as determined by Env-A 1408.02.
- (d) To calculate the 24-hour AAL for an RTAP, occupational exposure limit shall be divided by the product of the safety factor and the time adjustment factor, as in the formula below:

$$AAL_{(24 \text{ Hour})} = OEL / (SF \times TAF)$$

PART Env-A 1410 DETERMINATION OF ANNUAL AMBIENT AIR LIMITS

Env-A 1410.01 Determination of Annual Ambient Air Limits.

(a) Where there is a reference concentration limit established by the EPA, the annual AAL shall be the reference concentration limit, except as provided in (b), below.

(b) Where an RTAP has a reference concentration limit established by the EPA and is classified as Class I under Env-A 1407.02(a) or (b), and the occupational exposure limit is based on carcinogenic effects, the annual AAL shall be either a modified occupational health standard as determined by the calculation specified in Env-A 1410.02, or the reference concentration limit established by the EPA, whichever number is lower.

(c) Where there is no reference concentration limit, the annual AAL shall be a modified occupational health standard as determined by the calculation specified in Env-A 1410.02.

Env-A 1410.02 Calculation of Annual Ambient Air Limits.

- (a) "OEL" means the occupational exposure limit for the RTAP.
- (b) "SF" means the safety factor as determined by Env-A 1408.01.
- (c) To calculate the annual AAL for an RTAP, the occupational exposure limit shall be divided by the product of 4.2 and the safety factor, as in the formula below:

$$AAL_{(Annual)} = OEL / (SF \times 4.2)$$

Env-A 1410.03 Calculation of 24-Hour *De Minimis* Emission Level. To calculate the 24-hour de minimis emission level for an RTAP in pounds per day, the 24-hour AAL shall be divided by 84.17.

Env-A 1410.04 Calculation of Annual *De Minimis* Emission Level. The annual de minimis emission level for an RTAP in pounds per year shall be the lower of the levels calculated pursuant to (a) or (b), below:

- (a) The annual AAL multiplied by 16.28; or
- (b) The 24-hour de minimis emission level multiplied by 365.

PART Env-A 1411 LIST OF ALL REGULATED TOXIC AIR POLLUTANTS AND OTHER INFORMATION

Env-A 1411.01 Establishment of List of All Regulated Toxic Air Pollutants and Other Information.

(a) The list established by the department pursuant to RSA 125-I:6, II, shall contain the following information for each RTAP:

- (1) The chemical name of the RTAP;
- (2) The chemical abstracts service number of the RTAP;
- (3) The classification as class I, class II, or class III for the RTAP;
- (4) The 24-hour AAL for the RTAP;
- (5) The annual AAL for the RTAP;
- (6) The 24-hour de minimis emission level for the RTAP; and
- (7) The annual de minimis emission level for the RTAP.

(b) The RTAP list described in (a), above, shall be adopted and published in table format in Env-A 1450.

Env-A 1411.02 Adoption of the RTAP List. The RTAP list described in Env-A 1411.01 shall be adopted according to the rulemaking process specified in RSA 541-A.

Env-A 1411.03 Publication of Notice of the RTAP List.

(a) As required by RSA 125-I:4, IV, the department shall submit notice of the RTAP list for publication in the New Hampshire Rulemaking Register and any revisions to the list shall not take effect until such publication.

(b) At that time, and annually thereafter, the department shall publish the list on the department's website.

(c) The department shall make the list available to any person who requests it.

PART Env-A 1412 MODIFICATION OF THE RTAP LIST

Env-A 1412.01 Process for Modifications to the RTAP List. As specified in RSA 125-I:4, V, all additions, deletions and modifications to any part of the RTAP list shall be made through the rulemaking process described in RSA 541-A.

Env-A 1412.02 Petitions to Modify the RTAP List.

(a) If a person wishes to add a substance or compound to, delete a substance or compound from, or modify a specific parameter on the RTAP list, the person shall petition the commissioner pursuant to RSA

541-A:4 and Env-C 207 by providing the information specified in Env-A 1412.03 in writing to the commissioner.

(b) Where data limitations exist which prevent the derivation of an AAL, a person intending to use a substance or compound named on the list shall petition the commissioner by providing the information specified in Env-A 1412.03 in writing to the commissioner.

Env-A 1412.03 Contents of Petitions. A petition submitted pursuant to Env-A 1412.02(a) or (b) shall include the following information:

- (a) Which one or more of the following actions is proposed:
 - (1) Add a substance or compound to the RTAP list;
 - (2) Delete a substance or compound from the RTAP list;
 - (3) Modify the classification of a RTAP named on the list;
 - (4) Modify or add an AAL of a RTAP named on the list;
 - (5) Modify a time adjustment factor of a RTAP named on the list;
 - (6) Modify an occupational exposure limit of a RTAP named on the list; or
 - (7) Modify a de minimis emission level of a RTAP named on the list;
- (b) A statement of the reason(s) for the proposed revision to the RTAP list;

(c) If the proposal is to add a substance or compound to the RTAP list, data and documentation that support the proposed addition, including at least one study that has been conducted in accordance with generally accepted scientific principles which demonstrates that the substance or compound is known to cause, or can reasonably be anticipated to cause, acute, chronic, mutagenic, reproductive, or developmental health effects in humans as a result of exposure to such substance or compound;

(d) If the proposal is to delete a substance or compound from the RTAP list, data and documentation that support the proposed deletion, including at least one study that has been conducted in accordance with generally accepted scientific principles which demonstrates that the substance or compound cannot reasonably be anticipated to cause acute, chronic, mutagenic, reproductive, or developmental health effects in humans as a result of exposure to such substance or compound; and

(e) If the proposal is to modify a parameter for a substance or compound on the RTAP list, data and documentation that support the proposed modification, including at least one study that has been conducted in accordance with generally accepted scientific principles which demonstrates that:

- (1) If the petition is for stricter regulatory control of a substance or compound, the parameter specified in the RTAP list is not adequate to protect against acute, chronic, mutagenic, reproductive, or developmental health effects in humans as a result of exposure to the substance or compound; or
- (2) If the petition is for more lenient regulatory control of a substance or compound, the parameter specified in the RTAP list is more stringent than is necessary to protect against acute, chronic, mutagenic, reproductive, or developmental health effects in humans as a result of exposure to the substance or compound.

Env-A 1412.04 Decision to Grant or Deny the Petition.

- (a) The commissioner shall act on the petition within the time limits specified in RSA 541-A:4.
- (b) As specified in RSA 125-I:4, V(a), the commissioner shall not add a substance or compound to the RTAP list unless there is at least one study that has been conducted in accordance with generally accepted

scientific principles that demonstrates that the substance or compound is known to cause or may reasonably be anticipated to cause acute, chronic, mutagenic, reproductive, or developmental health effects in humans as a result of exposure to such substances or compounds.

(c) As specified in RSA 125-I:4, V(b), the commissioner shall not delete a substance or compound from the RTAP list unless there is at least one study that has been conducted in accordance with generally accepted scientific principles that demonstrates that the substance or compound cannot reasonably be anticipated to cause acute, chronic, mutagenic, reproductive, or developmental health effects in humans as a result of exposure to such substances or compounds.

(d) In addition to the criteria specified in (b) or (c), above, as applicable, the commissioner shall not grant a petition unless doing so will result in standards that promote human health.

PART Env-A 1413 REQUIREMENTS FOR SOURCES OF HAZARDOUS AIR POLLUTANTS SUBJECT TO SECTION 112 OF THE CLEAN AIR ACT

Env-A 1413.01 Sources of Hazardous Air Pollutants Subject to §112 of the Act. Nothing in this chapter shall be construed as modifying or eliminating the obligation of any source of hazardous air pollutants that is subject to §112 of the Clean Air Act to comply with those requirements.

PART Env-A 1450 TABLE OF ALL REGULATED TOXIC AIR POLLUTANTS

Env-A 1450.01 Table of All Regulated Toxic Air Pollutants.

(a) The AALs and de minimis values for “wood dust (western red cedar),” “wood dust (oak & beech),” “wood dust (birch, mahogany, teak, walnut)” and “wood dust (all other species)” in Table 1450-1, below, shall apply only to emissions from sanding operations at sources belonging to Major Group 24 or 25 as described in the Standard Industrial Classification Manual, 1987, and assigned by EPA the following Source Classification Code (SCC) numbers: 30700702, 30700806, 30700807, 30702003, 30703096, 30703097, 30703098, and 30703099.

(b) Pursuant to Env-A 1411.01, the list naming all regulated toxic air pollutants and other information shall be as set forth in Table 1450-1, below:

Table 1450-1: RTAP List

CAS Number	Description	Toxicity Class ^A	24-Hr AAL ($\mu\text{g}/\text{m}^3$)	Annual AAL ^B ($\mu\text{g}/\text{m}^3$)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
0-00-0	Borate compounds, inorganic, inhalable fraction	I	7.1	4.8	0.084	31
0 – 00 – 0	Coal Dust (anthracite), respirable fraction	II	2.0	1.3	0.024	8.7
0 – 00 – 0	Coal Dust (bituminous), respirable fraction	II	4.5	3.0	0.053	20
0 – 00 – 0	Fluorides, as F	I	8.9	6.0	0.11	39
0 – 00 – 0	Grain Dust (Oat, Wheat, Barley)	II	20	13	0.24	87
0-00-0	Methyltetrahydrophthalic anhydride isomers	II	0.0025	0.0017	0.000030	0.011
0 – 00 – 0	Stearates, respirable fraction	III	62	30	0.74	271
0-00-0	Stearates, inhalable fraction	III	208	99	2.5	903
0 – 00 – 0	Synthetic vitreous fibers, Continuous Filament Glass Fiber (inhalable)	II	70	17	0.83	277
0 – 00 – 0	Wood Dust (western red cedar), inhalable fraction (See Env-A 1450.01(a))	II	2.5	1.7	0.030	11
0 – 00 – 0	Wood Dust (oak and beech), inhalable fraction (See Env-A 1450.01(a))	I	3.6	2.4	0.043	16
0 – 00 – 0	Wood Dust (birch, mahogany, teak, and walnut), inhalable fraction (See Env-A 1450.01(a))	I	3.6	2.4	0.043	16

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
0 – 00 – 0	Wood Dust (all other species), inhalable fraction (See Env-A 1450.01(a))	III	15	9.9	0.18	65
50 – 00 – 0	Formaldehyde	I	9.8	1.8	0.12	29
50 – 29 – 3	DDT	I	3.6	2.4	0.043	16
50 – 32 – 8	Benzo[a]pyrene	I	0.0020	0.0020	0.000024	0.0087
50 – 78 – 2	Acetylsalicylic acid	I	25	12	0.30	108
52 – 68 – 6	Trichlorophon, inhalable fraction	I	3.6	2.4	0.043	16
55 – 38 – 9	Fenthion – inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
55 – 63 – 0	Nitroglycerin (NG)	I	1.6	1.1	0.019	6.9
56 – 23 – 5	Carbon tetrachloride	I	111	100	1.3	481
56 – 38 – 2	Parathion, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
56 – 55 – 3	Benz[a]anthracene	I	0.36	0.24	0.0043	1.6
56 – 72 – 4	Coumaphos – inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
57-11-4	Stearic acid inhalable fraction (see Stearates, inhalable fraction, CAS# 0-00-0)					
57-11-4	Stearic acid, respirable fraction (see Stearates, respirable fraction, CAS# 0-00-0)					
57 – 14 – 7	1,1-Dimethylhydrazine	I	0.089	0.060	0.0011	0.39
57 – 24 – 9	Strychnine	I	0.54	0.36	0.0064	2.3
57 – 57 – 8	B -Propiolactone	I	7.5	3.6	0.089	33
57 – 74 – 9	Chlordane, inhalable fraction and vapor	I	1.8	0.70	0.021	7.8
58 – 89 – 9	Lindane	I	1.8	1.2	0.021	7.8

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
60 – 29 – 7	Ethyl ether	I	4321	2881	51	18738
60 – 34 – 4	Methyl hydrazine	I	0.068	0.045	0.00081	0.29
60-35-5	Acetamide, inhalable fraction and vapor	II	17	8.1	0.20	74
60 – 57 – 1	Dieldrin, inhalable fraction and vapor	I	0.36	0.24	0.0042	1.5
61 – 82 – 5	Amitrole	I	0.71	0.48	0.0084	3.1
62 – 53 – 3	Aniline	I	27	1.0	0.32	16
62 – 73 – 7	Dichlorvos (DDVP), inhalable fraction and vapor	I	0.50	0.50	0.0059	2.2
62 – 74 – 8	Sodium fluoroacetate	I	0.18	0.12	0.0021	0.78
62 – 75 – 9	N-Nitrosodimethylamine	I	0.00070	0.00070	0.0000083	0.0030
63 – 25 – 2	Carbaryl, inhalable fraction and vapor	I	1.8	1.2	0.021	7.8
64 – 17 – 5	Ethanol	I	6714	4476	80	29115
64 – 18 – 6	Formic acid	II	66	32	0.78	286
64 – 19 – 7	Acetic Acid	II	126	84	1.5	546
64 – 67 – 5	Diethyl Sulfate	II	1.0	0.67	0.012	4.4
67 – 56 – 1	Methanol	I	20000	20000	238	86729
67 – 63 – 0	2-Propanol	I	1757	1171	21	7619
67 – 64 – 1	Acetone	I	2120	1413	25	9193
67 – 66 – 3	Chloroform	I	175	117	2.1	759
67 – 72 – 1	Hexachloroethane	I	35	30	0.42	152
68 – 11 – 1	Thioglycolic acid	I	14	9.0	0.16	58
68 – 12 – 2	Dimethylformamide	I	53	30	0.63	232

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
71 – 23 – 8	n-Propyl alcohol	II	1731	824	21	7506
71 – 36 – 3	n-Butanol	II	305	203	3.6	1323
71 – 43 – 2	Benzene	I	5.7	3.8	0.068	25
71-48-7	Cobalt acetate, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS # 7440-48-4)					
71 – 55 – 6	Methyl chloroform	I	6821	5000	81	29579
72 – 20 – 8	Endrin	I	0.36	0.24	0.0043	1.6
72 – 43 – 5	Methoxychlor	I	36	24	0.43	156
74 – 83 – 9	Methyl bromide	II	20	5.0	0.24	81
74 – 87 – 3	Methyl chloride	I	368	90	4.4	1465
74 – 88 – 4	Methyl iodide	II	60	40	0.71	260
74 – 89 – 5	Methylamine	II	45	21	0.53	195
74 – 90 – 8	Hydrogen cyanide, and cyanide salts, as CN	I	19	0.80	0.23	13
74 – 93 – 1	Methyl mercaptan	II	4.9	3.3	0.058	21
74 – 96 – 4	Ethyl bromide	II	111	74	1.3	481
74 – 97 – 5	Chlorobromomethane	II	5332	3555	63	23122
75 – 00 – 3	Ethyl chloride	I	10000	10000	119	43365
75 – 01 – 4	Vinyl chloride	I	9.3	6.2	0.11	40
75 – 02 – 5	Vinyl fluoride	I	6.8	4.5	0.081	29
75 – 04 – 7	Ethylamine	II	46	31	0.55	201
75 – 05 – 8	Acetonitrile	I	120	60	1.4	520

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
75 – 07 – 0	Acetaldehyde	I	161	9.0	1.9	147
75 – 08 – 1	Ethyl mercaptan	II	9.2	4.4	0.11	40
75 – 09 – 2	Methylene chloride (Dichloromethane)	I	621	600	7.4	2693
75 – 12 – 7	Formamide	II	91	60	1.1	395
75 – 15 – 0	Carbon disulfide	I	700	700	8.3	3036
75 – 21 – 8	Ethylene oxide	I	6.4	4.3	0.076	28
75 – 25 – 2	Bromoform	I	19	12	0.23	82
75 – 31 – 0	Isopropylamine	II	85	40	1.0	369
75 – 34 – 3	1,1-Dichloroethane	II	2037	1358	24	8833
75 – 35 – 4	Vinylidene chloride	II	200	200	2.4	867
75 – 43 – 4	Dichlorofluoromethane	II	211	141	2.5	915
75 – 44 – 5	Phosgene	I	1.4	0.30	0.017	4.9
75 – 45 – 6	Chlorodifluoromethane	II	50000	50000	594	216823
75 – 47 – 8	Iodoform	II	70	34	0.83	304
75 – 50 – 3	Trimethylamine	II	60	40	0.71	260
75 – 52 – 5	Nitromethane	III	744	496	8.8	3226
75 – 55 – 8	Propyleneimine	I	1.7	1.1	0.020	7.2
75 – 56 – 9	Propylene oxide	I	17	11	0.20	74
75 – 65 – 0	tert-Butanol	II	2134	1016	25	9254
75 – 74 – 1	Tetramethyl lead, as Pb	I	0.54	0.36	0.0064	2.3
75 – 86 – 5	Acetone cyanohydrin, as CN	I	18	12	0.21	78
75-91-2	Tert-Butyl hydroperoxide	II	2.6	1.2	0.031	11

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
76 – 03 – 9	Trichloroacetic acid	I	12	7.9	0.14	52
76 – 06 – 2	Chloropicrin	I	3.4	1.6	0.040	15
76 – 13 – 1	1,1,2-Trichloro-1,2,2-trifluoroethane	II	38581	25721	458	167305
76 – 22 – 2	Camphor, synthetic	II	85	40	1.0	369
76 – 44 – 8	Heptachlor	I	0.18	0.12	0.0021	0.78
77 – 47 – 4	Hexachlorocyclopentadiene (HCCPD)	II	0.55	0.20	0.0065	2.4
77 – 58 – 7	Dibutyltin dilaurate as Sn (see Tin, organic compounds, as Sn, CAS# 7440-31-5)					
77 – 73 – 6	Dicyclopentadiene	I	9.7	6.4	0.12	42
77 – 78 – 1	Dimethyl sulfate	I	1.9	1.2	0.023	8.2
78 – 00 – 2	Tetraethyl lead, as Pb	I	0.36	0.24	0.0043	1.6
78 – 30 – 8	Triorthocresyl phosphate, inhalable fraction and vapor	I	0.071	0.048	0.00085	0.31
78 – 34 – 2	Dioxathion, inhalable fraction and vapor	I	0.36	0.24	0.0043	1.6
78 – 59 – 1	Isophorone	II	141	94	1.7	611
78 – 83 – 1	Isobutyl alcohol	II	765	510	9.1	3317
78 – 87 – 5	Propylene dichloride (1,2-dichloropropane)	II	232	4.0	2.8	65
78 – 89 – 7	2-Chloro-1-propanol	II	27	13	0.32	117
78 – 92 – 2	sec-Butanol	II	2134	1016	25	9254
78 – 93 – 3	Methyl ethyl ketone (MEK)	I	5000	5000	59	21682
78 – 94 – 4	Methyl vinyl ketone	I	0.11	0.068	0.0014	0.050
78 – 95 – 5	Chloroacetone	I	15	9.0	0.18	65
79 – 00 – 5	1,1,2-Trichloroethane	II	277	184	3.3	1201

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
79 – 01 – 6	Trichloroethylene	I	2.0	2.0	0.024	8.7
79 – 04 – 9	Chloroacetyl chloride	II	1.6	0.77	0.019	6.9
79 – 06 – 1	Acrylamide, inhalable fraction and vapor	I	6.0	6.0	0.071	26
79 – 09 – 4	Propionic acid	II	211	101	2.5	915
79 – 10 – 7	Acrylic acid	I	21	1.0	0.25	16
79 – 11 – 8	Monochloroacetic acid (Chloroacetic acid) –inhalable fraction and vapor	III	29	19	0.34	126
79-21-0	Peracetic acid, inhalable fraction and vapor	I	6.2	2.9	0.074	27
79 – 27 – 6	1,1,2,2-Tetrabromoethane	I	5.0	3.4	0.059	22
79 – 34 – 5	1,1,2,2-Tetrachloroethane	I	25	16	0.30	108
79 – 41 – 4	Methacrylic acid	II	352	235	4.2	1526
79 – 43 – 6	Dichloroacetic acid	I	9.4	6.3	0.11	41
79 – 44 – 7	Dimethyl carbamoyl chloride	I	0.075	0.050	0.00089	0.33
79 – 46 – 9	2-Nitropropane	I	129	20	1.5	326
80 – 51 – 3	p,p'-oxybis(benzenesulfonyl hydrazide), inhalable fraction	III	4.2	0.99	0.050	16
80 – 56 – 8	α - Pinene (see Turpentine and select monoterpenes, CAS# 8006-64-2)					
80 – 62 – 6	Methyl methacrylate	I	732	700	8.7	3174
81 – 81 – 2	Warfarin, inhalable fraction	I	0.036	0.024	0.00042	0.15
82 – 68 – 8	Pentachloronitrobenzene	I	1.8	1.2	0.021	7.8
83 – 26 – 1	Pindone	I	0.36	0.24	0.0043	1.6
83 – 79 – 4	Rotenone, commercial	I	18	12	0.21	78

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
84 – 66 – 2	Diethyl phthalate	II	25	17	0.30	108
84 – 74 – 2	Dibutyl phthalate	II	25	17	0.30	108
85 – 00 – 7	Diquat dibromide, as the cation, inhalable fraction (see Diquat, as the cation, inhalable fraction, CAS# 2764-72-9)					
85-00-7	Diquat dibromide, as the cation, respirable fraction (see Diquat, as the cation, respirable fraction, CAS# 2764-72-9)					
85 – 01 – 8	Phenanthrene as coal tar pitch volatile (see Coal tar pitch volatiles, as benzene soluble aerosol, CAS# 65996-93-2)					
85 – 42 – 7	Hexahydrophthalic anhydride, all isomers, inhalable fraction and vapor	II	0.0025	0.0017	0.000030	0.011
85 – 44 – 9	Phthalic anhydride, inhalable fraction and vapor	I	0.0071	0.0048	0.000085	0.031
86 – 50 – 0	Azinphos-methyl, inhalable fraction and vapor	I	0.71	0.48	0.0084	3.1
86-74-8	Carbazole as coal tar pitch volatile (see Coal tar pitch volatiles, as benzene soluble aerosol, CAS# 65996-93-2)					
86 – 88 – 4	ANTU	I	1.1	0.71	0.013	4.8
87 – 68 – 3	Hexachlorobutadiene	I	1.1	0.50	0.013	4.8
87 – 86 – 5	Pentachlorophenol, inhalable fraction and vapor	I	1.8	1.2	0.021	7.8
88 – 06 – 2	2,4,6-Trichlorophenol	I	3.0	3.0	0.036	13
88 – 12 – 0	N-Vinyl-2-pyrrolidone	II	1.6	0.76	0.019	6.9
88 – 72 – 2	2-Nitrotoluene (see Nitrotoluene isomers, CAS# 1321-12-6)					

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
88 – 89 – 1	Picric acid	II	0.50	0.34	0.0059	2.2
89 – 72 – 5	o-sec-Butylphenol	II	218	104	2.6	945
90 – 04 – 0	o-Anisidine	II	2.5	1.7	0.030	11
90 – 12 – 0	1-Methyl naphthalene	II	15	9.7	0.18	65
91 – 08 – 7	2,6-Toluene diisocyanate, inhalable fraction and vapor (or as TDI mixture)	I	0.025	0.017	0.00030	0.11
91 – 15 – 6	o-Phthalodinitrile, inhalable fraction and vapor	II	7.0	3.4	0.084	31
91 – 20 – 3	Naphthalene	I	186	3.0	2.2	49
91 – 22 – 5	Quinoline	I	0.0029	0.0029	0.000034	0.013
91 – 57 – 6	2-Methyl naphthalene	II	15	9.7	0.18	65
91 – 59 – 8	β-Naphthylamine	I				E
91 – 94 – 1	3,3-Dichlorobenzidine	I	0.078	0.078	0.00093	0.34
92 – 52 – 4	Biphenyl	I	4.6	3.1	0.055	20
92 – 67 – 1	4-Aminodiphenyl	I	0.025	0.016	0.00030	<i>E</i>
92 – 84 – 2	Phenothiazine	II	35	17	0.42	152
92 – 87 – 5	Benzidine	I	0.029	0.019	0.00034	0.12
92 – 93 – 3	4-Nitrodiphenyl	I				E
93 – 76 – 5	2,4,5-T	I	36	24	0.43	156
94 – 36 – 0	Benzoyl peroxide	II	25	17	0.30	108
94 – 75 – 7	2,4-D, inhalable fraction	I	36	24	0.43	156
95 – 13 – 6	Indene	III	353	236	4.2	1531

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
95 – 47 – 6	o-Xylene	I	1550	100	18	1628
95 – 48 – 7	o-Cresol, inhalable fraction and vapor (see Cresol, all isomers, inhalable fraction and vapor, CAS# 1319-77-3)					
95 – 49 – 8	o-Chlorotoluene	I	925	617	11	4011
95 – 50 – 1	o-Dichlorobenzene	I	536	357	6.4	2324
95 – 53 – 4	o-Toluidine	I	31	21	0.37	134
95 – 54 – 5	o-Phenylenediamine	I	0.36	0.24	0.0043	1.6
95 – 63 – 6	1,2,4-Trimethylbenzene (as Trimethylbenzene)	II	618	60	7.3	977
95-65-8	3,4-Dimethylphenol, inhalable fraction and vapor (see Dimethylphenol, mixed isomers, inhalable fraction and vapor, CAS # 1300-71-6)					
95 – 80 – 7	Toluene-2,4-diamine	I	7.1	4.8	0.084	31
95-87-4	2,5-Dimethylphenol, inhalable fraction and vapor (see Dimethylphenol, mixed isomers, inhalable fraction and vapor, CAS # 1300-71-6)					
96-05-9	Allyl methacrylate	I	26	12	0.31	112
96 – 12 – 8	1,2-Dibromo-3-chloropropane	I	0.20	0.20	0.0024	0.87
96 – 18 – 4	1,2,3-Trichloropropane	I	0.30	0.30	0.0036	1.3
96 – 22 – 0	Diethyl ketone	II	4965	2364	59	21531
96 – 33 – 3	Methyl acrylate	II	35	23	0.42	152
96 – 45 – 7	Ethylene thiourea	I	0.97	0.97	0.012	4.2
97 – 77 – 8	Disulfiram	I	7.1	4.8	0.084	31
98 – 00 – 0	Furfuryl alcohol	II	5.7	2.7	0.067	25

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
98 – 01 – 1	Furfural	I	2.8	1.9	0.033	12
98 – 07 – 7	Benzotrichloride	I	0.0030	0.0030	0.000036	0.013
98 – 51 – 1	p-tert-Butyl toluene	II	31	20	0.37	134
98 – 82 – 8	Cumene	II	1237	400	15	5364
98 – 83 – 9	alpha – Methyl styrene	I	173	115	2.1	750
98 – 86 – 2	Acetophenone (including benzene from gasoline)	II	246	164	2.9	1067
98 – 88 – 4	Benzoyl chloride	II	14	9.4	0.17	61
98 – 95 – 3	Nitrobenzene	I	18	9.0	0.21	78
99 – 08 – 1	m-Nitrotoluene (see Nitrotoluene isomers, CAS# 1321-12-6)					
99 – 55 – 8	5-Nitro-o-toluidine, inhalable fraction and vapor	II	5.0	3.4	0.060	22
99 – 65 – 0	1,3-Dinitrobenzene, inhalable fraction and vapor	I	3.6	2.4	0.043	16
99 – 99 – 0	p-Nitrotoluene (see Nitrotoluene isomers, CAS# 1321-12-6)					
100 – 00 – 5	p-Nitrochlorobenzene	I	2.3	1.5	0.027	10
100 – 01 – 6	p-Nitroaniline	I	11	7.1	0.13	48
100 – 21 – 0	Terephthalic acid	II	50	34	0.59	217
100 – 25 – 4	1,4-Dinitrobenzene, inhalable fraction and vapor (see Dinitrobenzene, mixed isomers, inhalable fraction and vapor, CAS# 25154-54-5)					
100 – 37 – 8	2-Diethylaminoethanol	II	48	32	0.57	208
100 – 40 – 3	4-Vinyl cyclohexene	II	2.2	1.5	0.026	9.5

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
100 – 41 – 4	Ethyl benzene	I	1000	1000	12	4336
100 – 42 – 5	Styrene, monomer	I	1000	1000	12	4336
100 – 44 – 7	Benzyl chloride	I	19	12	0.23	82
100 – 61 – 8	N-methyl aniline	III	92	22	1.1	358
100 – 63 – 0	Phenylhydrazine	II	2.2	1.5	0.026	9.5
100 – 74 – 3	N-Ethylmorpholine	II	169	80	2.0	733
101 – 14 – 4	4,4-Methylene bis (2-chloroaniline), inhalable fraction and vapor	I	0.39	0.26	0.0046	1.7
101 – 68 – 8	Methylene bisphenyl isocyanate	I	0.18	0.020	0.0021	0.33
101 – 77 – 9	4,4-Methylene dianiline	II	4.1	2.7	0.049	18
102 – 54 – 5	Dicyclopentadienyl iron, as Fe	II	50	34	0.59	217
102 – 71 – 6	Triethanolamine	II	25	17	0.30	108
102 – 81 – 8	2-N-Dibutylaminoethanol	II	18	12	0.21	78
103-71-9	Phenyl isocyanate	I	0.087	0.058	0.0010	0.38
104 – 94 – 9	p-Anisidine	II	2.5	1.7	0.030	11
105 – 60 – 2	Caprolactam, inhalable fraction and vapor	I	18	12	0.21	78
105-67-9	2,4-Dimethylphenol, inhalable fraction and vapor (see Dimethylphenol, mixed isomers, inhalable fraction and vapor, CAS# 1300-71-6)					
106 – 42 – 3	p-Xylene	I	1550	100	18	1628
106 – 44 – 5	p-Cresol, inhalable fraction and vapor (see Cresol, all isomers, inhalable fraction and vapor, CAS# 1319-77-3)					
106 – 46 – 7	p-Dichlorobenzene	I	800	800	9.5	3469

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
106 – 49 – 0	p-Toluidine	II	44	30	0.52	191
106 – 50 – 3	p-Phenylenediamine	II	0.50	0.34	0.0059	2.2
106 – 51 – 4	Quinone	I	1.6	1.0	0.019	6.9
106 – 87 – 6	Vinyl cyclohexene dioxide	I	2.0	1.4	0.024	8.7
106 – 88 – 7	1,2-Epoxybutane	II	20	20	0.24	87
106 – 89 – 8	Epichlorohydrin	I	6.8	1.0	0.081	16
106 – 92 – 3	Allyl glycidyl ether	II	23	16	0.27	100
106 – 93 – 4	Ethylene dibromide	I	0.050	0.050	0.00059	0.22
106 – 94 – 5	1-Bromopropane	I	1.8	1.2	0.021	7.8
106 – 95 – 6	Allyl bromide	I	2.5	1.2	0.029	11
106-98-9	1-Butene (see Butenes, all isomers, CAS# 25167-67-3)					
106 – 99 – 0	1,3-Butadiene	I	2.0	2.0	0.024	8.7
107-01-7	2-Butene (see Butenes, all isomers, CAS# 25167-67-3)					
107 – 02 – 8	Acrolein	I	0.82	0.020	0.0097	0.33
107 – 05 – 1	Allyl chloride	I	11	1.0	0.13	16
107 – 06 – 2	Ethylene dichloride	I	143	95	1.7	620
107 – 07 – 3	Ethylene chlorohydrin	I	12	7.9	0.14	52
107 – 13 – 1	Acrylonitrile	I	15	2.0	0.18	33
107 – 15 – 3	Ethylenediamine	II	176	84	2.1	763
107 – 18 – 6	Allyl alcohol	I	4.3	2.9	0.051	19
107 – 19 – 7	Propargyl alcohol	I	8.2	5.5	0.097	36
107 – 20 – 0	Chloroacetaldehyde	II	16	11	0.19	69

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
107 – 21 – 1	Ethylene glycol, vapor fraction	II	319	213	3.8	1384
107 – 22 – 2	Glyoxal, inhalable fraction and vapor	II	0.70	0.34	0.0083	3.0
107 – 30 – 2	Chloromethyl methyl ether	I				E
107-31-3	Methyl formate	III	2558	1218	30	11094
107-41-5	Hexylene glycol, vapor fraction	II	851	405	10	3690
107 – 49 – 3	Tetraethyl pyrophosphate (TEPP), inhalable fraction and vapor	I	0.036	0.024	0.00043	0.16
107 – 98 – 2	1-Methoxy-2-propanol	II	2000	2000	24	8673
108 – 03 – 2	1-Nitropropane	II	458	305	5.4	1986
108 – 05 – 4	Vinyl acetate	I	200	200	2.4	867
108 – 08 – 7	2,4-Dimethylpentane (see Heptane, all isomers, CAS# 142-82-5)					
108 – 10 – 1	Methyl isobutyl ketone (MIBK)	I	3000	3000	36	13009
108 – 18 – 9	Diisopropylamine	II	148	70	1.8	642
108-21-4	Isopropyl acetate (see n-Propyl acetate, CAS# 109-60-4)					
108 – 24 – 7	Acetic anhydride	I	21	10	0.25	91
108 – 31 – 6	Maleic anhydride, inhalable fraction and vapor	II	0.050	0.034	0.00059	0.22
108 – 38 – 3	m-Xylene	I	1550	100	18	1628
108 – 39 – 4	m-Cresol, inhalable fraction and vapor (Cresol, all isomers, inhalable fraction and vapor, CAS# 1319-77-3)					
108 – 44 – 1	m-Toluidine	II	44	30	0.52	191
108 – 45 – 2	m-Phenylenediamine	I	0.36	0.24	0.0043	1.6

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
108 – 46 – 3	Resorcinol	II	226	151	2.7	980
108 – 67 – 8	1,3,5-Trimethylbenzene (as Trimethylbenzene)	II	618	60	7.3	977
108-68-9	3,5-Dimethylphenol, inhalable fraction and vapor (see Dimethylphenol, mixed isomers, inhalable fraction and vapor, CAS# 1300-71-6)					
108 – 88 – 3	Toluene	I	5000	5000	59	21682
108 – 90 – 7	Chlorobenzene	II	231	154	2.7	1002
108 – 91 – 8	Cyclohexylamine	I	146	98	1.7	633
108 – 93 – 0	Cyclohexanol	I	736	490	8.7	3192
108 – 94 – 1	Cyclohexanone	II	404	269	4.8	1752
108 – 95 – 2	Phenol	I	68	45	0.81	295
108 – 98 – 5	Phenyl mercaptan	I	1.6	1.1	0.019	6.9
109 – 59 – 1	2-Isopropoxyethanol	II	746	355	8.9	3235
109-60-4	n-Propyl acetate	III	8702	4144	103	37737
109-63-7	Boron trifluoride diethyl ether, as BF ₃	III	12	5.8	0.14	52
109 – 73 – 9	n-Butylamine	II	75	50	0.89	325
109 – 79 – 5	n-Butyl mercaptan	I	9.0	4.3	0.11	39
109 – 86 – 4	2-Methoxyethanol (EGME)	I	20	20	0.24	87
109 – 87 – 5	Methylal	II	15644	10429	186	67840
109 – 89 – 7	Diethylamine	II	75	50	0.89	325
109 – 90 – 0	Ethyl isocyanate	I	0.29	0.14	0.0030	1.3
109 – 99 – 9	Tetrahydrofuran	II	2000	2000	24	8673

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
110 – 49 – 6	2-Methoxyethyl acetate (EGMEA)	I	1.7	1.2	0.020	7.4
110 – 54 – 3	n-Hexane	II	885	700	11	3838
110 – 62 – 3	n-Valeraldehyde	II	1239	590	15	5373
110 – 80 – 5	2-Ethoxyethanol (EGEE)	I	200	200	2.4	867
110 – 82 – 7	Cyclohexane	II	6000	6000	71	26019
110 – 83 – 8	Cyclohexene	II	5080	3387	60	22029
110 – 85 – 0	Piperazine and salts (as piperazine), inhalable fraction and vapor	I	0.50	0.24	0.0059	2.2
110 – 86 – 1	Pyridine	II	16	11	0.19	69
110 – 91 – 8	Morpholine	II	357	238	4.2	1548
111 – 15 – 9	2-Ethoxyethyl acetate (EGEEA)	I	96	64	1.1	416
111 – 30 – 8	Glutaraldehyde, activated or unactivated	I	0.71	0.48	0.0084	3.1
111 – 40 – 0	Diethylene triamine	I	21	10	0.25	91
111 – 42 – 2	Diethanolamine, inhalable fraction and vapor	I	3.6	2.4	0.042	15
111 – 44 – 4	Dichloroethyl ether	I	104	69	1.2	451
111 – 65 – 9	Octane, all isomers	I	7000	3333	83	30355
111 – 69 – 3	Adiponitrile	I	44	21	0.52	191
111 – 76 – 2	2-Butoxyethanol	I	1600	1600	19	6938
112 – 07 – 2	2-Butoxyethyl acetate	II	659	439	7.8	2858
112-34-5	Diethylene glycol monobutyl ether (DGME), inhalable fraction and vapor	III	1382	658	16	5994
112 – 55 – 0	Dodecyl mercaptan	I	3.0	2.0	0.036	13

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
114 – 26 – 1	Propoxur, inhalable fraction and vapor	I	1.8	1.2	0.021	7.7
115 – 11 – 7	Isobutene	II	2886	1924	34	12515
115 – 29 – 7	Endosulfan, inhalable fraction and vapor	I	0.36	0.24	0.0043	1.6
115 – 77 – 5	Pentaerythritol	II	50	34	0.59	217
115 – 90 – 2	Fensulfothion, inhalable fraction and vapor	I	0.036	0.024	0.00043	0.16
116-06-3	Aldicarb, inhalable fraction and vapor	I	0.018	0.012	0.00021	0.077
116 – 14 – 3	Tetrafluoroethylene	III	171	81	2.0	742
116 – 15 – 4	Hexafluoropropylene	II	4.3	2.1	0.051	19
117 – 81 – 7	Di(2-ethyl hexyl)phthalate	I	18	12	0.21	78
118 – 52 – 5	1,3-Dichloro-5,5-dimethyl hydantoin	II	1.4	0.67	0.017	6.1
118 – 74 – 1	Hexachlorobenzene	I	0.0070	0.0050	0.000083	0.030
118 – 96 – 7	2,4,6-Trinitrotoluene, inhalable fraction and vapor	II	0.50	0.34	0.0059	2.2
119 – 93 – 7	o-Tolidine	I	0.071	0.048	0.00084	0.31
120-12-7	Anthracene as coal tar pitch volatiles (see coal tar pitch volatiles as benzene soluble aerosol, CAS# 65996-93-2)					
120 – 80 – 9	Catechol	II	116	77	1.4	503
120 – 82 – 1	1,2,4-Trichlorobenzene	II	186	124	2.2	807
121 – 14 – 2	2,4-Dinitrotoluene (see Dinitrotoluene, mixed isomers, CAS# 25321-14-6)					
121 – 44 – 8	Triethylamine	II	10	7.0	0.12	45
121 – 45 – 9	Trimethyl phosphite	I	50	24	0.59	217
121 – 69 – 7	Dimethylaniline	II	126	84	1.5	546

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
121 – 75 – 5	Malathion, inhalable fraction and vapor	I	3.6	2.4	0.043	16
121 – 82 – 4	Cyclonite	I	1.8	1.2	0.021	7.8
122-34-9	Simazine, inhalable fraction	I	1.8	1.2	0.021	7.7
122 – 39 – 4	Diphenylamine	II	50	34	0.59	217
122 – 60 – 1	Phenyl glycidyl ether (PGE)	I	2.1	1.4	0.025	9.1
122 – 66 – 7	1,2-Diphenylhydrazine	I	0.050	0.050	0.00059	0.22
123 – 31 – 9	Hydroquinone	I	3.6	2.4	0.043	16
123 – 38 – 6	Propionaldehyde	II	239	8.0	2.8	130
123-39-7	Monomethylformamide	I	8.6	5.8	0.10	37
123 – 42 – 2	Diacetone alcohol	II	1197	798	14	5191
123 – 51 – 3	Isoamyl alcohol	II	1816	1211	22	7875
123 – 54 – 6	2,4-Pentanedione	I	366	244	4.3	1587
123 – 86 – 4	n-Butyl acetate	II	1673	797	20	7254
123 – 91 – 1	1,4-Dioxane	I	258	30	3.1	488
124 – 09 – 4	1,6-Hexanediamine	II	12	7.7	0.14	52
124 – 40 – 3	Dimethylamine	II	65	31	0.77	282
124 – 64 – 1	Tetrakis (hydroxymethyl) phosphonium chloride	II	10	6.7	0.12	43
126 – 73 – 8	Tributyl phosphate, inhalable fraction and vapor	II	25	17	0.30	108
126 – 98 – 7	Methylacrylonitrile	I	9.6	6.4	0.11	42
126 – 99 – 8	β-Chloroprene	I	13	8.6	0.15	56
127 – 00 – 4	1-Chloro-2-propanol	II	28	13	0.33	121
127 – 18 – 4	Perchloroethylene	I	607	40	7.2	651

CAS Number	Description	Toxicity Class^A	24-Hr AAL ($\mu\text{g}/\text{m}^3$)	Annual AAL^B ($\mu\text{g}/\text{m}^3$)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
127 – 19 – 5	N,N-Dimethylacetamide	I	127	85	1.5	552
127 – 91 – 3	β -Pinene (see Turpentine and select monoterpenes, CAS# 8006-64-2)					
128 – 37 – 0	Butylated hydroxytoluene (BHT), inhalable fraction and vapor	II	10	6.7	0.12	43
129 – 00 – 0	Pyrene as coal tar pitch volatiles (see Coal tar pitch volatiles, as benzene soluble aerosol, CAS# 65996-93-2)					
131 – 11 – 3	Dimethylphthalate	II	25	17	0.30	108
133 – 06 – 2	Captan, inhalable fraction	I	18	12	0.21	78
133-07-3	Folpet, inhalable fraction	I	5.0	2.4	0.059	22
135 – 88 – 6	N-Phenyl- β -naphthylamine	I				E
136 – 78 – 7	Sesone	II	50	34	0.59	217
137 – 05 – 3	Methyl 2-cyanoacrylate	I	3.3	2.2	0.039	14
137 – 26 – 8	Thiram, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
140 – 11 – 4	Benzyl acetate	II	307	205	3.6	1331
140 – 88 – 5	Ethyl acrylate	I	71	48	0.84	308
141 – 32 – 2	n-Butyl acrylate	I	52	25	0.62	225
141 – 43 – 5	Ethanolamine	I	27	18	0.32	117
141 – 66 – 2	Dicrotophos, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
141 – 78 – 6	Ethyl acetate	II	10141	4829	120	43976
141 – 79 – 7	Mesityl oxide	II	302	201	3.6	1310
142 – 82 – 5	Heptane, all isomers	II	8249	5500	98	35771

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
143 – 33 – 9	Sodium cyanide, as CN (see Hydrogen cyanide and cyanide salts, as CN, CAS# 74-90-8)					
144 – 62 – 7	Oxalic acid, anhydrous	I	3.6	2.4	0.042	15
148 – 01 – 6	3,5-Dinitro-o-toluidide	II	7.0	3.4	0.084	31
149 – 57 – 5	2-Ethylhexanoic acid, inhalable fraction and vapor	I	18	12	0.21	78
151 – 50 – 8	Potassium cyanide, as CN (see Hydrogen cyanide and cyanide salts, as CN, CAS# 74-90-8)					
151 – 56 – 4	Ethylenimine	I	0.31	0.21	0.0037	1.4
151 – 67 – 7	Halothane	I	2020	962	24	8760
156 – 59 – 2	cis 1,2-Dichloroethylene	II	3989	2659	47	17298
156 – 60 – 5	trans-1,2-Dichloroethylene	II	3989	2659	47	17298
156 – 62 – 7	Calcium cyanamide	II	2.5	1.7	0.030	11
205 – 99 – 2	Benzo[b]fluoranthene	I	0.36	0.24	0.0043	1.6
218 – 01 – 9	Chrysene	I	0.36	0.24	0.0043	1.6
260-94-6	Acridine, as coal tar pitch volatiles (see Coal tar pitch volatiles, as benzene soluble aerosol, CAS# 65996-93-2)					
298 – 00 – 0	Methyl parathion, inhalable fraction and vapor	I	0.071	0.048	0.00084	0.31
298 – 02 – 2	Phorate, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
298 – 04 – 4	Disulfoton, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
299 – 84 – 3	Ronnel – inhalable fraction and vapor	I	18	12	0.21	78
299 – 86 – 5	Crufomate	I	18	12	0.21	78

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
300 – 76 – 5	Naled, inhalable fraction and vapor	II	0.50	0.34	0.0059	2.2
302 – 01 – 2	Hydrazine	I	0.046	0.031	0.00055	0.20
309 – 00 – 2	Aldrin, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
314 – 40 – 9	Bromacil	I	36	24	0.43	156
330 – 54 – 1	Diuron	I	36	24	0.43	156
333 – 41 – 5	Diazinon, inhalable fraction and vapor	I	0.036	0.024	0.00043	0.16
334 – 88 – 3	Diazomethane	I	1.2	0.81	0.014	5.2
353-42-4	Boron trifluoride dimethyl ether, as BF ₃	III	9.7	4.6	0.12	42
353 – 50 – 4	Carbonyl fluoride	I	27	13	0.32	117
382 – 21 – 8	Perfluoroisobutylene	I	0.29	0.20	0.0034	1.3
409 – 21 – 2	Silicon carbide: non-fibrous (inhalable fraction)	II	50	34	0.59	217
409 – 21 – 2	Silicon carbide: non-fibrous (respirable fraction)	II	15	10	0.18	65
420 – 04 – 2	Cyanamide	II	14	6.7	0.17	61
431 – 03 – 8	Diacetyl	II	0.25	0.12	0.0029	1.1
460 – 19 – 5	Cyanogen	II	54	0.80	0.64	13
463 – 51 – 4	Ketene	I	3.1	2.0	0.037	13
463 – 58 – 1	Carbonyl sulfide	II	87	41	1.0	377
479 – 45 – 8	Tetryl	II	7.5	5.0	0.089	33
504 – 29 – 0	2-Aminopyridine	I	6.8	4.5	0.081	29
506 – 64 – 9	Silver cyanide (as hydrogen cyanide)	I	18	12	0.21	78
506-68-3	Cyanogen bromide	I	4.6	3.1	0.055	20

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
506 – 77 – 4	Cyanogen chloride	I	2.7	1.8	0.032	12
509 – 14 – 8	Tetranitromethane	I	0.14	0.095	0.0017	0.61
513-79-1	Cobaltous carbonate, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
526-73-8	1,2,3-Trimethylbenzene, –(as trimethylbenzene)	II	618	60	7.3	977
526-75-0	2,3-Dimethylphenol, inhalable fraction and vapor (see Dimethylphenol, mixed isomers, inhalable fraction and vapor, CAS# 1300-71-6)					
528 – 29 – 0	1,2-Dinitrobenzene, inhalable fraction and vapor (see Dinitrobenzene, mixed isomers, inhalable fraction and vapor, CAS# 25154-54-5)					
532 – 27 – 4	2-Chloroacetophenone	I	1.1	0.030	0.013	0.49
534 – 52 – 1	4,6-Dinitro-o-cresol, inhalable fraction and vapor	I	0.71	0.48	0.0084	3.1
540 – 59 – 0	1,2-Dichloroethylene, all isomers	III	16521	7867	196	71643
542 – 56 – 3	Isobutyl nitrite	II	24	14	0.29	104
542 – 75 – 6	1,3-Dichloropropene	I	20	20	0.24	87
542 – 88 – 1	bis(Chloromethyl) ether	I	0.017	0.011	0.00020	0.074
542 – 92 – 7	Cyclopentadiene (see Dicyclopentadiene, CAS# 77-73-6)					
543-80-6	Barium acetate, as Ba (see Barium and soluble compounds, as Ba, CAS# 7440-39-3)					
552 – 30 – 7	Trimetallic anhydride, inhalable fraction and vapor	II	0.0025	0.0017	0.000030	0.011

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
556 – 52 – 5	Glycidol	I	30	15	0.36	130
557 – 05 – 1	Zinc stearate, inhalable fraction (see Stearates, inhalable fraction, CAS# 0-00-0)					
557-05-1	Zinc stearate, respirable fraction (see Stearates, respirable fraction, CAS# 0-00-0)					
558 – 13 – 4	Carbon tetrabromide	III	21	14	0.25	91
563 – 12 – 2	Ethion, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
563 – 80 – 4	Methyl isopropyl ketone	I	352	168	4.2	1526
565 – 59 – 3	2,3-Dimethylpentane (see Heptane, all isomers, CAS# 142-82-5)					
576-26-1	2,6-Dimethylphenol, inhalable fraction and vapor (see Dimethylphenol, mixed isomers, inhalable fraction and vapor, CAS# 1300-71-6)					
584 – 84 – 9	Toluene-2,4-diisocyanate, inhalable fraction and vapor (or as TDI mixture)	I	0.025	0.017	0.00030	0.11
589 – 34 – 4	3-Methylhexane (see Heptane, all isomers, CAS# 142-82-5)					
590-18-1	Cis-2-Butene (see Butenes, all isomers, CAS# 25167-67-3)					
590 – 35 – 2	2,2-Dimethylpentane (see Heptane, all isomers, CAS# 142-82-5)					
591 – 76 – 4	2-Methylhexane (see Heptane, all isomers, CAS# 142-82-5)					
591 – 78 – 6	Methyl-n-butyl ketone	II	101	30	1.2	438

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
592 – 01 – 8	Calcium cyanide as CN (see Hydrogen cyanide and cyanide salts, as CN, CAS# 74-90-8)					
593 – 60 – 2	Vinyl bromide	I	7.9	5.2	0.093	34
594 – 42 – 3	Perchloromethyl mercaptan	I	2.7	1.8	0.032	12
594 – 72 – 9	1,1-Dichloro-1-nitroethane	II	85	40	1.0	369
598 – 78 – 7	2-Chloropropionic acid	I	2.2	1.0	0.026	9.5
600 – 25 – 9	1-Chloro-1-nitropropane	II	70	34	0.83	304
602-01-7	2,3-Dinitrotoluene	II	1.4	0.67	0.017	6.1
606-20-2	2,6-Dinitrotoluene (see 2,3-Dinitrotoluene, CAS# 602-01-7)					
610-39-9	3,4-Dinitrotoluene (see 2,3-Dinitrotoluene, CAS# 602-01-7)					
618-85-9	3,5-Dinitrotoluene (see 2,3-Dinitrotoluene, CAS# 602-01-7)					
619-15-8	2,5-Dinitrotoluene (see 2,3-Dinitrotoluene, CAS# 602-01-7)					
624-64-6	Trans-2-Butene (see Butenes, all isomers, CAS# 25167-67-3)					
624 – 83 – 9	Methyl isocyanate	I	0.17	0.11	0.0020	0.73
624 – 92 – 0	Dimethyl disulfide	II	9.7	6.5	0.12	42
626 – 17 – 5	m-Phthalodinitrile, inhalable fraction and vapor	II	25	17	0.30	108
628 – 96 – 6	Ethylene glycol dinitrate	II	4.4	1.0	0.052	16
637 – 92 – 3	Ethyl tert-butyl ether (ETBE)	II	736	350	8.7	3192
638 – 21 – 1	Phenylphosphine	I	0.82	0.55	0.0097	3.6

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
643-79-8	o-Phthalaldehyde, vapor fraction	II	0.0028	0.0018	0.000033	0.012
646 – 06 – 0	1,3-Dioxolane	II	427	203	5.1	1852
681 – 84 – 5	Methyl silicate	I	21	14	0.25	91
684 – 16 – 2	Hexafluoroacetone	I	2.4	1.6	0.029	10
688 – 73 – 3	tri-N-Butylstannane hydride as Sn (see Tin, organic compounds, as SN, CAS# 7440-31-5)					
764 – 41 – 0	1,4-Dichloro-2-butene	I	0.089	0.060	0.0011	0.39
768 – 52 – 5	N-Isopropylaniline	II	77	37	0.91	334
822 – 06 – 0	Hexamethylene diisocyanate	I	0.12	0.010	0.0014	0.16
872 – 50 – 4	n-Methyl-2-pyrrolidone	I	1429	952	17	6197
919 – 86 – 8	Demeton-S-methyl, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
944 – 22 – 9	Fonofos – inhalable fraction and vapor	I	0.036	0.024	0.00043	0.16
994 – 05 – 8	tert-Amyl methyl ether (TAME)	II	421	280	5.0	1826
999 – 61 – 1	2-Hydroxypropyl acrylate	I	14	6.7	0.17	61
1024 – 57 – 3	Heptachlor epoxide	I	0.18	0.12	0.0021	0.78
1120 – 71 – 4	Propane sultone	I				E
1189-85-1	Tert-Butyl chromate, as CrO ₃	II	0.50	0.34	0.0060	2.2
1213-99-1	Nickel (II) oxide, as Ni, inhalable fraction, (see Nickel, insoluble inorganic compounds as Ni, inhalable fraction, CAS# 7440-02-0)					
1300-71-6	Dimethylphenol, mixed isomers, inhalable fraction and vapor	II	25	17	0.30	109
1300 – 73 – 8	Xylidine (mixed isomers), inhalable fraction and vapor	II	13	8.4	0.15	56

CAS Number	Description	Toxicity Class ^A	24-Hr AAL ($\mu\text{g}/\text{m}^3$)	Annual AAL ^B ($\mu\text{g}/\text{m}^3$)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
1303 – 00 – 0	Gallium arsenide, respirable fraction	I	0.0011	0.00071	0.000013	0.0046
1303 – 96 – 4	Borax, inhalable fraction (see Borate compounds, inorganic, inhalable fraction, CAS# 0-00-0)					
1304 – 28 – 5	Barium oxide as Ba, (see h Barium and soluble compounds, as Ba, CAS# 7440-39-3)					
1304 – 56 – 9	Beryllium oxide as Be, inhalable fraction (see Beryllium and compounds, as Be, inhalable fraction, CAS# 7440-41-7)					
1304 – 82 – 1	Bismuth telluride Se-doped, as Bi_2Te_3	II	25	17	0.30	108
1305 – 62 – 0	Calcium hydroxide	III	104	50	1.2	451
1306 – 19 – 0	Cadmium oxide as Cd, respirable fraction (see Cadmium and compounds, as Cd, respirable fraction, CAS# 7440-43-9)					
1306-23-6	Cadmium sulfide, as Cd, respirable fraction (see Cadmium and compounds, as Cd, respirable fraction, CAS# 7440-43-9)					
1306-23-6	Cadmium sulfide, as Cd, total particulate (see Cadmium and compounds, as Cd, total particulate, CAS# 7440-43-9)					
1307-96-6	Cobaltous oxide, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
1308-06-1	Cobalt oxide, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					

CAS Number	Description	Toxicity Class ^A	24-Hr AAL ($\mu\text{g}/\text{m}^3$)	Annual AAL ^B ($\mu\text{g}/\text{m}^3$)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
1308-31-2	Chromite, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr (III), inhalable fraction, CAS# 16065-83-1)					
1308-38-9	Chromium oxide, as Cr (III), inhalable fraction (see Trivalent chromium compounds, as Cr (III), inhalable fraction, CAS# 16065-83-1)					
1309 – 37 – 1	Iron oxide (Fe_2O_3) – respirable fraction	II	25	17	0.30	108
1309 – 64 – 4	Antimony trioxide	I	1.8	0.20	0.021	3.3
1310 – 58 – 3	Potassium hydroxide	II	11	6.7	0.13	48
1313 – 13 – 9	Manganese dioxide as Mn, respirable fraction	II	1.0	0.67	0.012	4.3
1313-13-9	Manganese (IV) dioxide as Mn, inhalable fraction (see Manganese, elemental and inorganic compounds as Mn, inhalable fraction, CAS# 7439-96-5)					
1313-99-1	Nickel (II) oxide, as Ni, inhalable fraction (see Nickel, soluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
1314-04-1	Nickel sulfide, as Ni, inhalable fraction (see Nickel, insoluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
1314 – 06 – 3	Nickel peroxide, as Ni, inhalable fraction (see Nickel soluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
1314 – 13 – 2	Zinc oxide, respirable fraction	II	10	6.7	0.12	44

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
1314-35-8	Tungsten trioxide, as W, respirable fraction (see Tungsten and compounds, in absence of cobalt, as W, respirable fraction, CAS# 7440-33-7)					
1314 – 62 – 1	Vanadium pentoxide as Va, inhalable fraction	I	0.18	0.12	0.0021	0.78
1314 – 80 – 3	Phosphorus pentasulfide	II	5.0	3.4	0.059	22
1317-34-6	Manganese (III) oxide, as Mn, respirable fraction (see Manganese elemental and inorganic compounds, as Mn, respirable fraction, CAS# 7439-96-5)					
1317-34-6	Manganese (III) oxide, as Mn, inhalable fraction (see Manganese elemental and inorganic compounds, as Mn, inhalable fraction, CAS# 7439-96-5)					
1317 – 36 – 8	Lead monoxide, as Pb (see Lead, and inorganic compounds, as Pb, CAS# 7439-92-1)					
1317 – 39 – 1	Copper (I) oxide, as Cu (see Copper, dusts and mists, as Cu, CAS# 7440-50-8)					
1317 – 95 – 9	Silica, Crystalline – Tripoli, respirable fraction	I	0.089	0.060	0.0011	0.39
1319 – 77 – 3	Cresol, all isomers, inhalable fraction and vapor	I	71	48	0.84	308
1321-12-6	Nitrotoluene isomers	I	39	26	0.46	169
1321 – 64 – 8	Pentachloronaphthalene, inhalable fraction and vapor	II	2.5	1.7	0.030	11
1321 – 65 – 9	Trichloronaphthalene	II	25	17	0.30	108
1330 – 20 – 7	Xylene	I	1550	100	18	1628

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
1330 – 43 – 4	Sodium tetraborate, inhalable fraction (see Borate compounds, inorganic, inhalable fraction, CAS# 0-00-0)					
1332 – 58 – 7	Kaolin, containing no asbestos, respirable fraction	II	10	6.7	0.12	43
1333 – 82 – 0	Chromium, trioxide, as Cr (VI), inhalable fraction (see Hexavalent chromium compounds, as Cr (VI), inhalable fraction, CAS# 18540-29-9)					
1333-86-4	Carbon black, inhalable fraction	II	15	10	0.18	65
1335 – 87 – 1	Hexachloronaphthalene	III	3.0	2.0	0.036	13
1335 – 88 – 2	Tetrachloronaphthalene	II	10	6.7	0.12	43
1336 – 36 – 3	Polychlorinated biphenyls (Aroclors)	I	0.10	0.10	0.0012	0.43
1338 – 23 – 4	Methyl ethyl ketone peroxide	I	5.4	3.6	0.064	23
1395 – 21 – 7	Subtilisins as crystalline active enzyme	II	0.00030	0.00020	0.0000036	0.0013
1563 – 66 – 2	Carbofuran, inhalable fraction and vapor	I	0.36	0.24	0.0043	1.6
1582 – 09 – 8	Trifluraline	I	4.6	4.6	0.055	20
1634 – 04 – 4	Methyl-tert butyl ether	II	3000	3000	36	13009
1746 – 01 – 6	2,3,7,8-Tetrachlorodibenzeno-p-Dioxin	I	2.3E-7	2.3E-7	2.7E-9	1.0E-6
1910-42-5	Paraquat dichloride, as the cation, inhalable fraction (see Paraquat as the cation, inhalable fraction, CAS# 4685-14-7)					
1912 – 24 – 9	Atrazine (and related symmetrical triazines), inhalable fraction	I	7.1	4.8	0.085	31
1918 – 02 – 1	Picloram	II	50	34	0.59	217

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
1929 – 82 – 4	Nitrapyrin, inhalable fraction and vapor	I	50	24	0.59	217
2039-87-4	o-Chlorostyrene	III	4218	2812	50	18290
2074-50-2	Paraquat dimethyl sulfate, as the cation, inhalable fraction (see Paraquat, as the cation, inhalable fraction, CAS# 4685-14-7)					
2104 – 64 – 5	EPN, inhalable fraction and vapor	I	0.36	0.24	0.0043	1.6
2179 – 59 – 1	Allyl propyl disulfide	II	15	10	0.18	66
2234 – 13 – 1	Octachloronaphthalene	III	1.5	0.99	0.018	6.5
2238 – 07 – 5	Diglycidyl ether (DGE)	I	0.19	0.13	0.0023	0.82
2425 – 06 – 1	Captafol, inhalable fraction and vapor	I	0.36	0.24	0.0043	1.6
2426 – 08 – 6	n-Butyl glycidyl ether (BGE)	I	57	38	0.68	247
2451 – 62 – 9	1,3,5-Triglycidyl-s-triazinetriene	I	0.18	0.12	0.0021	0.78
2528 – 36 – 1	Dibutyl phenyl phosphate	II	18	12	0.21	78
2698 – 41 – 1	o-Chlorobenzylidene malonitrile, inhalable fraction and vapor	I	1.6	0.93	0.019	6.9
2699 – 79 – 8	Sulfuryl fluoride	I	75	50	0.89	325
2764 – 72 – 9	Diquat, as the cation, inhalable fraction	I	1.8	1.2	0.021	7.8
2764 – 72 – 9	Diquat, as the cation, respirable fraction	I	0.36	0.24	0.0042	1.5
2921 – 88 – 2	Chlorpyrifos, inhalable fraction and vapor	I	0.36	0.24	0.0043	1.6
2871-90-6	Clopidol, inhalable fraction and vapor	II	21	10	0.25	92
3033 – 62 – 3	bis(2-dimethylaminoethyl) ether (DMAEE)	I	1.6	0.78	0.019	6.9
3333 – 52 – 6	Tetramethyl succinonitrile, inhalable fraction and vapor	I	10	6.7	0.12	43

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
3383 – 96 – 8	Temephos, inhalable fraction	II	5.0	3.4	0.059	22
3425-89-6	4-Methyl-1,2,3,6-tetrahydrophthalic anhydride (see Methyltetrahydrophthalic anhydride isomers, CAS# 0-00-0)					
3547-04-4	DDE (1,1-Dichloro-2,2-bis(P-Chlorophenyl))	I	0.10	0.10	0.0012	0.43
3689 – 24 – 5	Sulfotep (TEDP), inhalable fraction and vapor	I	0.36	0.24	0.0043	1.6
3710-84-7	N,N- Diethylhydroxylamine	I	36	17	0.43	156
3825 – 26 – 1	Ammonium perfluorooctanoate	I	0.050	0.024	0.00059	0.22
4016 – 14 – 2	Isopropyl glycidyl ether (IGE)	II	1197	798	14	5191
4098 – 71 – 9	Isophorone diisocyanate	I	0.16	0.11	0.0019	0.69
4170 – 30 – 3	Crotonaldehyde	I	3.1	2.0	0.037	13
4685-14-7	Paraquat as the cation, inhalable fraction	I	0.18	0.12	0.0021	0.77
5124 – 30 – 1	Methylene bis(4-cyclohexylisocyanate)	III	0.80	0.54	0.0095	3.5
5333-84-6	1,2,3,6-Tetrahydro-3-methylphthalic anhydride (see Methyltetrahydrophthalic anhydride isomers, CAS# 0-00-0)					
5392 – 40 – 5	Citral, inhalable fraction and vapor	I	89	60	1.1	386
5714 – 22 – 7	Sulfur pentafluoride	I	0.40	0.24	0.0048	1.7
6018-89-9	Nickel acetate, as Ni, inhalable fraction (see Nickel, soluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
6153-56-6	Oxalic acid, dihydrate	I	3.6	2.4	0.042	15

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
6385 – 62 – 2	Diquat dibromide monohydrate, as the cation, inhalable fraction (see Diquat, as the cation, inhalable fraction, CAS# 2764-72-9)					
6385-62-2	Diquat dibromide monohydrate, as the cation, respirable fraction (see Diquat, as the cation, respirable fraction, CAS# 2764-72-9)					
6423 – 43 – 4	Propylene glycol dinitrate	II	1.7	1.1	0.020	7.4
6923 – 22 – 4	Monocrotophos, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
7085-85-0	Ethyl 2-cyanoacrylate	II	5.2	3.4	0.061	22
7429 – 90 – 5	Aluminum metal and insoluble compounds – respirable fraction	II	5.0	3.4	0.059	22
7439 – 92 – 1	Lead, and inorganic compounds as Pb	I	0.15	0.12	0.0018	0.65
7439 – 96 – 5	Manganese, elemental and inorganic compounds, as Mn, respirable fraction	II	0.10	0.050	0.0012	0.44
7439 – 96 – 5	Manganese, elemental and inorganic compounds, as Mn, inhalable fraction	II	0.50	0.050	0.0060	0.81
7439 – 97 – 6	Mercury, aryl compounds	I	0.36	0.30	0.0043	1.6
7439 – 97 – 6	Mercury, alkyl compounds	I	0.30	0.30	0.0036	1.3
7439 – 97 – 6	Mercury, elemental and inorganic forms	I	0.30	0.30	0.0036	1.3
7439 – 98 – 7	Molybdenum metal and insoluble compounds, as Mo; inhalable fraction	I	36	24	0.43	156
7439 – 98 – 7	Molybdenum soluble compounds, as Mo, respirable fraction	I	11	7.1	0.13	48

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr <i>De Minimis</i>^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
7439 – 98 – 7	Molybdenum soluble compounds, as Mo, respirable fraction	I	1.8	1.2	0.021	7.8
7440 – 02 – 0	Nickel, insoluble, inorganic compounds, as Ni, inhalable fraction	I	0.71	0.48	0.0085	3.1
7440 – 02 – 0	Nickel, elemental, as Ni, inhalable fraction	I	5.4	3.6	0.064	23
7440 – 02 – 0	Nickel, soluble inorganic compounds, as Ni, inhalable fraction	I	0.36	0.24	0.0043	1.6
7440-06-4	Platinum metal	II	5.0	3.4	0.060	22
7440 – 06 – 4	Platinum, soluble salts, as Pt	II	0.010	0.0070	0.00012	0.043
7440 – 16 – 6	Rhodium, soluble compounds	II	0.050	0.034	0.00059	0.22
7440 – 22 – 4	Silver metal, dust and fume	II	0.50	0.34	0.0059	2.2
7440 – 22 – 4	Silver and compounds as Ag, soluble compounds	II	0.050	0.034	0.00059	0.22
7440 – 28 – 0	Thallium and compounds, as Tl, inhalable fraction	I	0.071	0.048	0.00084	0.31
7440 – 31 – 5	Tin, metal, inhalable fraction	II	10	6.7	0.12	43
7440 – 31 – 5	Tin, organic compounds, as Sn	I	0.36	0.24	0.0043	1.6
7440 – 31 – 5	Tin and inorganic compounds (not- SnH ₄ and indium tin oxide), as Sn, inhalable fraction	II	10	6.7	0.12	43
7440 – 33 – 7	Tungsten and compounds in the absence of cobalt, as W, respirable fraction	I	11	7.1	0.13	46
7440 – 36 – 0	Antimony and compounds, as Sb	I	1.8	1.2	0.21	7.8
7440 – 38 – 2	Arsenic and inorganic compounds, as As	I	0.036	0.024	0.00043	0.16
7440 – 39 – 3	Barium and soluble compounds, as Ba	II	2.5	1.7	0.030	11

CAS Number	Description	Toxicity Class^A	24-Hr AAL (µg/m³)	Annual AAL^B (µg/m³)	24-Hr De Minimis^C (lbs/day)	Annual De Minimis (lbs/yr)
7440 – 41 – 7	Beryllium and compounds, as Be, inhalable fraction	I	0.00018	0.00012	0.0000021	0.00077
7440 – 43 – 9	Cadmium and compounds, as Cd, respirable fraction	I	0.0071	0.0048	0.000085	0.031
7440-43-9	Cadmium and compounds, as Cd, total particulate	I	0.036	0.024	0.00042	0.16
7440-48-4	Cobalt and inorganic compounds, as Co, inhalable fraction	II	0.14	0.067	0.017	0.61
7440 – 48 – 4	Hard metal containing Cobalt and Tungsten carbide, as Co, thoracic particulate matter	I	0.018	0.012	0.00021	0.077
7440 – 50 – 8	Copper, dusts and mists, as Cu	I	3.6	2.4	0.043	16
7440 – 50 – 8	Copper, fume	I	0.71	0.48	0.0084	3.1
7440 – 58 – 6	Hafnium and compounds, as Hf	III	7.4	5.0	0.088	32
7440 – 61 – 1	Uranium (natural) soluble and insoluble, as U	I	0.71	0.48	0.0084	3.1
7440 – 65 – 5	Yttrium and compounds, as Y	III	15	9.9	0.18	65
7440 – 74 – 6	Indium and compounds, as In	I	0.36	0.24	0.0043	1.6
7553 – 56 – 2	Iodine, inhalable fraction and vapor	II	0.52	0.35	0.0062	2.3
7572 – 29 – 4	Dichloroacetylene	I	1.4	0.93	0.017	6.1
7580 – 67 – 8	Lithium hydride, inhalable fraction	III	0.83	0.50	0.0099	3.6
7616 – 94 – 6	Perchloryl fluoride	II	65	44	0.77	282
7631 – 90 – 5	Sodium bisulfite	II	25	17	0.30	108
7637 – 07 – 2	Boron trifluoride	I	1.0	0.68	0.012	4.4

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7646-79-9	Cobalt chloride, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
7646 – 85 – 7	Zinc chloride fume	I	3.6	2.4	0.043	16
7647 – 01 – 0	Hydrogen chloride	I	20	20	0.24	87
7664 – 39 – 3	Hydrogen fluoride, as F	I	1.5	0.98	0.018	6.5
7664 – 41 – 7	Ammonia	II	500	500	5.9	2168
7664 – 93 – 9	Sulfuric acid, thoracic particulate matter	I	0.71	0.48	0.0084	3.1
7681-11-0	Potassium iodide, inhalable fraction and vapor	II	0.34	0.23	0.0041	1.5
7681 – 49 – 4	Sodium fluoride, as F, (see Fluorides, as F, CAS# 0-00-0)					
7681 – 57 – 4	Sodium metabisulfite	II	35	17	0.42	152
7681-82-5	Sodium iodide, inhalable fraction and vapor	II	0.31	0.21	0.0037	1.3
7697 – 37 – 2	Nitric acid	I	19	12	0.23	82
7705 – 08 – 0	Ferric chloride (as iron, soluble salt)	II	5.0	3.4	0.059	22
7718-54-9	Nickel chloride, as Ni, inhalable fraction (see Nickel, soluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
7719 – 09 – 7	Thionyl chloride	I	3.5	2.3	0.041	15
7719 – 12 – 2	Phosphorus trichloride	I	3.9	2.6	0.046	17
7720-78-7	Ferrous sulfate (Iron salts, soluble, as Fe)	I	5.0	2.4	0.059	22
7722 – 84 – 1	Hydrogen peroxide	II	9.9	4.7	0.12	43

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
7726 – 95 – 6	Bromine	II	3.3	2.2	0.039	14
7727-43-7	Barium sulfate, inhalable fraction	II	104	50	1.2	452
7738-94-5	Chromic acid, as Cr(VI) inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					
7758 – 94 – 3	Ferrous chloride (as iron, soluble salt)	II	5.0	3.4	0.059	22
7758 – 97 – 6	Lead chromate, as Cr(VI), inhalable fraction (see Hexavalent chromium, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					
7773-01-5	Manganese (II) chloride, as Mn, respirable fraction (see Manganese elemental and inorganic compounds, as Mn, respirable fraction, CAS# 7439-96-5)					
7773-01-5	Manganese (II) chloride, as Mn, inhalable fraction (see Manganese elemental and inorganic compounds, as Mn, inhalable fraction, CAS# 7439-96-5)					
7775-11-3	Sodium chromate, as Cr(VI), inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					
7778-50-9	Potassium dichromate, as Cr(VI) inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					
7782 – 41 – 4	Fluorine, as F	I	0.56	0.37	0.0066	2.4

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7782-42-5	Graphite (all forms except graphite fibers), respirable fraction	II	28	6.7	0.33	109
7782-49-2	Selenium and compounds, as Se	I	0.71	0.48	0.0084	3.1
7782-50-5	Chlorine	I	1.0	0.69	0.012	4.5
7782-65-2	Germanium tetrahydride	II	4.4	2.1	0.052	19
7783-06-4	Hydrogen sulfide	I	50	2.0	0.59	33
7783-07-5	Hydrogen selenide, as Se	I	0.57	0.38	0.0068	2.5
7783-41-7	Oxygen difluoride	I	0.39	0.26	0.0046	1.7
7783-54-2	Nitrogen trifluoride	II	146	97	1.7	633
7783-60-0	Sulfur tetrafluoride	I	1.8	1.0	0.021	7.8
7783-79-1	Selenium hexafluoride, as Se	I	0.57	0.38	0.0068	2.5
7783-80-4	Tellurium hexafluoride, as Te	I	0.36	0.24	0.0043	1.6
7784-42-1	Arsine	I	0.057	0.050	0.00068	0.25
7786-34-7	Mevinphos, inhalable fraction and vapor	I	0.33	0.22	0.0039	1.4
7786-81-4	Nickel sulfate, as Ni, inhalable fraction (see Nickel soluble and inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
7787-49-7	Beryllium fluoride, as Be, inhalable fraction (see Beryllium and compounds, as Be, inhalable fraction, CAS# 7440-41-7)					
7789-00-6	Potassium chromate, as Cr(VI), inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
7789-02-8	Chromium nitrate, nonahydrate, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					
7789-04-0	Chromium phosphate, as Cr (III), inhalable fraction (see Trivalent chromium compounds, as Cr (III), inhalable fraction, CAS# 16065-83-1)					
7789 – 06 – 2	Strontium chromate, as Cr (VI), inhalable fraction (see Hexavalent chromium compounds, as Cr (VI), inhalable fraction, CAS# 18540-29-9)					
7789-09-5	Ammonium dichromate, as Cr (VI) inhalable fraction (see Hexavalent chromium compounds, as Cr (VI), inhalable fraction, CAS# 18540-29-9)					
7789-12-0	Sodium dichromate, dehydrate, as Cr (VI), inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction CAS# 18540-29-9)					
7789 – 30 – 2	Bromine pentafluoride	III	11	7.1	0.13	48
7790 – 91 – 2	Chlorine trifluoride	I	1.5	0.91	0.018	6.5
7803 – 51 – 2	Phosphine	I	0.30	0.30	0.0036	1.3
7803 – 52 – 3	Antimony hydride	I	1.8	1.2	0.021	7.8
8001 – 35 – 2	Chlorinated camphene	I	1.8	1.2	0.021	7.8
8002 – 05 – 9	Petroleum Distillate	I	10000	4762	119	43365

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8003 – 34 – 7	Pyrethrum	I	18	12	0.21	78
8006 – 64 – 2	Turpentine and select monoprenes	II	558	372	6.6	2420
8008 – 20 – 6	Kerosene, as total hydrocarbon vapor	II	1006	671	12	4362
8012 – 95 – 1	Mineral oil, excluding metal working fluids, pure, highly and severely refined, inhalable fraction	II	25	17	0.30	108
8022 – 00 – 2	Methyl demeton, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
8052 – 41 – 3	Stoddard solvent	II	2641	1761	31	11453
8052 – 42 – 4	Asphalt (Bitumen) fume, as benzene soluble aerosol, inhalable fraction	II	25	17	0.30	108
8065 – 48 – 3	Demeton, inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
9002 – 86 – 2	Polyvinyl chloride (PVC) respirable fraction	II	5.0	3.4	0.059	22
9006 – 04 – 6	Natural rubber latex, as inhalable allergenic proteins	II	0.00050	0.00034	0.0000060	0.0022
9014 – 01 – 1	Subtilisins as crystalline active enzyme	II	0.00030	0.00020	0.0000036	0.0013
10024 – 97 – 2	Nitrous oxide	I	321	214	3.8	1392
10025 – 67 – 9	Sulfur monochloride	I	22	13	0.26	95
10025-73-7	Chromium chloride, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					
10025 – 87 – 3	Phosphorus oxychloride	I	2.3	1.5	0.027	10
10026 – 13 – 8	Phosphorus pentachloride	I	3.0	2.0	0.036	13

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
10026-22-9	Cobaltous nitrate, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
10035 – 10 – 6	Hydrogen bromide	II	37	22	0.44	160
10043 – 35 – 3	Boric acid, inhalable fraction (see Borate compounds, inorganic, inhalable fraction, CAS# 0-00-0)					
10049 – 04 – 4	Chlorine dioxide	I	0.98	0.20	0.012	4.3
10060-12-5	Chromium chloride, hexahydrate, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					
10101-53-8	Chromium sulfate, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					
10101-97-0	Nickel sulfate, as Ni, inhalable fraction (see Nickel, soluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
10102 – 43 – 9	Nitric oxide	II	156	104	1.9	676
10108-64-2	Cadmium chloride, as Cd, respirable fraction (see Cadmium and compounds, as Cd, respirable fraction, CAS# 7440-43-9)					
10108-64-2	Cadmium chloride, as Cd, total particulate (see Cadmium and compounds, as Cd, total particulate, CAS# 7440-43-9)					

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10124-36-4	Cadmium sulfate, as Cd, total particulate (see Cadmium and compounds, as Cd, total particulate, CAS# 7440-43-9)					
10124-36-4	Cadmium sulfate, as Cd, total particulate (see Cadmium and compounds, as Cd, total particulate, CAS# 7440-43-9)					
10124-43-3	Cobaltous sulfate, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
10141-05-6	Cobalt nitrate, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
10210 – 68 – 1	Cobalt carbonyl, as Co	II	0.50	0.34	0.0059	2.2
10294 – 33 – 4	Boron tribromide	III	120	71	1.4	518
10294-34-5	Boron trichloride	III	56	33	0.66	243
10294-50-5	Cobaltous phosphate, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
10361-37-2	Barium chloride, as Ba (see Barium and soluble compounds, as Ba, CAS# 7440-39-9)					
10421-48-4	Ferric nitrate (Iron salts, soluble, as Fe)	III	21	9.9	0.25	90
10588 – 01 – 9	Sodium dichromate, as Cr(VI), inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					

CAS Number	Description	Toxicity Class ^A	24-Hr AAL ($\mu\text{g}/\text{m}^3$)	Annual AAL ^B ($\mu\text{g}/\text{m}^3$)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
11070-44-3	Methyltetrahydrophthalic anhydride (see Methyltetrahydrophthalic anhydride isomers, CAS# 0-00-0)					
11097 – 69 – 1	Chlorodiphenyl (54% chlorine)	I	1.8	1.2	0.021	7.8
12001 – 26 – 2	Mica, respirable fraction	II	15	10	0.18	65
12035 – 72 – 2	Nickel subsulfide (as Ni), inhalable fraction	I	0.36	0.24	0.0043	1.6
12036-22-5	Tungsten oxide, as W, respirable fraction (see Tungsten and compounds, in absence of cobalt, as W, respirable fraction, CAS# 7440-33-7)					
12054-48-7	Nickel hydroxide, as Ni, inhalable fraction (see Nickel, insoluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
12070-12-1	Hard metal containing cobalt and tungsten carbide, as Co thoracic particulate matter	I	0.018	0.012	0.00021	0.077
12079 – 65 – 1	Manganese cyclopentadienyl tricarbonyl, as Mn	I	0.36	0.24	0.0043	1.6
12108 – 13 – 3	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn	I	0.71	0.48	0.0084	3.1
12138-09-9	Tungsten disulfide, as W, respirable fraction (see Tungsten and compounds, in absence of cobalt, as W, respirable fraction, CAS# 7440-33-7)					
12185 – 10 – 3	Phosphorus (yellow)	I	0.36	0.24	0.0043	1.6
12314-42-0	Sodium chromite, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
12336-95-7	Chromium hydroxide sulfate, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					
12607-70-4	Nickel carbonate hydroxide, as Ni, inhalable fraction (see Nickel, insoluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
12656 – 85 – 8	Molybdate Orange as Mo, respirable fraction (see Molybdenum, as Mo, soluble compounds, respirable fraction, CAS# 7439-98-7)					
13071 – 79 – 9	Terbufos, inhalable fraction and vapor	I	0.036	0.024	0.00043	0.16
13121 – 70 – 5	Cyhexatin	I	18	12	0.21	78
13149 – 00 – 3	Hexahydrophthalic anhydride, cis- isomers, inhalable fraction and vapor (see Hexahydrophthalic anhydride, all isomers, inhalable fraction and vapor, CAS# 85-42-7)	II	0.0025	0.0017	0.000030	0.011
13327-32-7	Beryllium hydroxide, as Be, inhalable fraction (see Beryllium and compounds, as Be, inhalable fraction, CAS# 7440-41-7)					
13463 – 39 – 3	Nickel carbonyl, as Ni	I	1.2	0.83	0.015	5.4
13463 – 40 – 6	Iron pentacarbonyl, as Fe	I	1.2	0.55	0.014	5.2
13463 – 67 – 7	Titanium dioxide	II	50	34	0.59	217
13466 – 78 – 9	3-Carene (see Turpentine and select monoterpenes, CAS# 8006-64-2)					

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
13478-60-7	Nickel nitrate, as Ni, inhalable fraction (see Nickel, soluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
13494 – 80 – 9	Tellurium, and compounds, as Te, excluding hydrogen telluride	I	0.36	0.24	0.0043	1.6
13530 – 65 – 9	Zinc chromate, as Cr(VI), inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					
13765 – 19 – 0	Calcium chromate, as Cr(VI), inhalable fraction (see Hexavalent chromium compounds, as Cr(VI), inhalable fraction, CAS# 18540-29-9)					
13770 – 89 – 3	Nickel sulfamate as Ni, inhalable fraction (see Nickel, soluble and inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
13838 – 16 – 9	Enflurane	I	2021	1348	24	8764
13983-17-0	Calcium silicate, naturally occurring as Wollastonite Inhalable fraction containing no asbestos and <1% crystalline silica	II	5.0	3.4	0.060	22
14166 – 21 – 3	Hexahydrophthalic anhydride, trans-isomer, inhalable fraction and vapor (see Hexahydrophthalic anhydride, all isomers, inhalable fraction and vapor, CAS# 85-42-7)					
14464 – 46 – 1	Silica, Crystalline-Cristobalite – respirable fraction	I	0.089	0.060	0.0011	0.39
14484 – 64 – 1	Ferbam, inhalable fraction	I	18	12	0.21	78

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
14639-25-9	Chromium picolinate, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					
14807 – 96 – 6	Talc containing asbestos fibers, respirable fraction	I	0.71	0.48	0.0084	3.1
14807 – 96 – 6	Talc containing no asbestos fibers, respirable fraction	II	10	6.7	0.12	43
14808 – 60 – 7	Silica, Crystalline- α -quartz – respirable fraction	I	0.089	0.060	0.0011	0.39
14857 – 34 – 2	Dimethylethoxysilane	II	11	7.0	0.13	48
14977 – 61 – 8	Chromyl chloride, as Cr(VI), inhalable fraction and vapor	I	0.0023	0.10	0.000027	0.0098
15244-36-7	Manganese (II) sulfate, as Mn, respirable fraction (see Manganese elemental and inorganic compounds, as Mn, respirable fraction, CAS# 7439-96-5)					
15244-36-7	Manganese (II) sulfate, as Mn, inhalable fraction (see Manganese elemental and inorganic compounds, as Mn, inhalable fraction, CAS# 7439-96-5)					
15972 – 60 – 8	Alachlor, inhalable fraction and vapor	I	3.6	2.4	0.042	15
16065-83-1	Trivalent chromium compounds, as Cr(III), inhalable fraction	II	0.015	0.010	0.00018	0.065
16122-03-5	Nickel ammonium chloride, as Ni, inhalable fraction (see Nickel, soluble inorganic compounds, as Ni, inhalable fraction, CAS# 7440-02-0)					
16219 – 75 – 3	Ethylidene norbornene	I	35	23	0.42	152
16752 – 77 – 5	Methomyl, inhalable fraction and vapor	I	0.71	0.48	0.0085	3.1
16842 – 03 – 8	Cobalt hydrocarbonyl, as Co	II	0.70	0.34	0.0084	3.1

CAS Number	Description	Toxicity Class ^A	24-Hr AAL ($\mu\text{g}/\text{m}^3$)	Annual AAL ^B ($\mu\text{g}/\text{m}^3$)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
17194-00-2	Barium hydroxide, as Ba (see Barium and soluble compounds, as Ba, CAS# 7440-39-9)					
17702 – 41 – 9	Decaborane	I	0.89	0.60	0.011	3.9
17804 – 35 – 2	Benomyl, inhalable fraction	I	3.6	2.4	0.043	16
18282-10-5	Tin (VI) oxide, as Sn, inhalable fraction (see Tin, and inorganic compounds, not SnH ₄ or indium tin oxide, as Sn, inhalable fraction, CAS# 7440-31-5)					
18540-29-9	Hexavalent chromium compounds, as Cr(VI), inhalable fraction	I	0.00071	0.00048	0.0000085	0.0031
19287 – 45 – 7	Diborane	I	0.39	0.26	0.0046	1.7
19438-63-2	6-Methyl-3,4,5,6-tetrahydro-2-benzofuran-1,3-dione (see Methyltetrahydrophthalic anhydride isomers, CAS# 0-00-0)					
19438-64-3	5-Methyl-7,7-dihydroisobenzofuran-1,3-(3ah,6h)-dione (see Methyltetrahydrophthalic anhydride isomers, CAS# 0-00-0)					
19624 – 22 – 7	Pentaborane	I	0.046	0.031	0.00055	0.20
20816 – 12 – 0	Osmium tetroxide, as Os	II	0.011	0.0054	0.00013	0.048
21087 – 64 – 9	Metribuzin	I	18	12	0.21	78
21651-19-4	Tin (III) oxide, as Sn, inhalable fraction (see Tin, and inorganic compounds, not SnH ₄ or indium tin oxide, as Sn, inhalable fraction, CAS# 7400-31-5)					
21725-46-2	Cyanazine, inhalable fraction	II	0.70	0.34	0.0084	3.1

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
22224 – 92 – 6	Fenamiphos – inhalable fraction and vapor	I	0.18	0.12	0.0021	0.78
22781-23-3	Bendiocarb, inhalable fraction and vapor	I	0.36	0.24	0.0042	1.6
25013 – 15 – 4	Vinyl toluene	II	1217	812	14	5277
25013-82-5	Chromium acetate, as Cr(III), inhalable fraction (see Trivalent chromium compounds, as Cr(III), inhalable fraction, CAS# 16065-83-1)					
25154 – 54 – 5	Dinitrobenzene, mixed isomers, inhalable fraction and vapor	II	5.0	3.4	0.060	22
25167-67-3	Butene, all isomers	II	2886	1924	34	12515
25321 – 14 – 6	Dinitrotoluene, mixed isomers	I	0.71	0.48	0.0084	3.1
25322 – 68 – 3	Polyethylene glycol, (average molecular weight 200-600)	I	50	24	0.59	217
25551 – 13 – 7	Trimethyl benzene (mixed isomers)	II	619	412	7.4	2684
26140 – 60 – 3	Terphenyls (o-, m- & p-isomers)	II	25	17	0.30	108
26471 – 62 – 5	2,4- and 2,6-Toluene diisocyanate (as a mixture), inhalable fraction and vapor	I	0.025	0.070	0.00030	0.11
26590-20-5	Methyltetrahydrophthalic anhydride (see Methyltetrahydrophthalic anhydride isomers, CAS# 0-00-0)					
26628 – 22 – 8	Sodium azide	I	1.0	0.69	0.012	4.3
26628 – 22 – 8	Sodium azide, as Hydrazoic acid vapor	I	0.39	0.26	0.0046	1.7
26952 – 21 – 6	Isooctyl alcohol	III	5542	2639	66	24033
31242 – 93 – 0	o-Chlorinated diphenyl oxide	III	7.4	5.0	0.088	32

CAS Number	Description	Toxicity Class ^A	24-Hr AAL (µg/m ³)	Annual AAL ^B (µg/m ³)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
34590 – 94 – 8	2 (2-Methoxymethylethoxy) propanol	II	3048	2032	36	13218
35400 – 43 – 2	Sulprofos, inhalable fraction and vapor	I	0.36	0.24	0.0042	1.5
42498-58-8	2,3,5,6-Tetrahydro-2-methylphthalic anhydride (see Methylterhydrophthalic anhydride isomers, CAS# 0-00-0)					
50926-11-9	Indium tin oxide, respirable fraction	II	0.00050	0.00034	0.0000060	0.0022
51349-94-1	Manganese (II) phosphate, an Mn, respirable fraction (see Manganese elemental and inorganic compounds, as Mn, respirable fraction, CAS# 7439-96-5)					
51349-94-1	Manganese (II) phosphate, as Mn, inhalable fraction (see Manganese elemental and inorganic compounds, as Mn, inhalable fraction, CAS# 7439-96-5)					
53469 – 21 – 9	Chlorodiphenyl (42% chlorine)	I	3.6	2.4	0.043	16
55566 – 30 – 8	Tetrakis (hydroxymethyl) phosphonium sulfate	I	7.1	4.8	0.084	31
57454-67-8	Cobalt carbonate, as Co, inhalable fraction (see Cobalt and inorganic compounds as Co, inhalable fraction, CAS# 7440-48-4)					
60459-08-7	Cobalt sulfate, as Co, inhalable fraction (see Cobalt and inorganic compounds, as Co, inhalable fraction, CAS# 7440-48-4)					
61788 – 32 – 7	Hydrogenated terphenyls (nonirradiated)	III	73	49	0.87	317
64742 – 81 – 0	Kerosene, as total hydrocarbon vapor	II	1006	671	12	4362

CAS Number	Description	Toxicity Class ^A	24-Hr AAL ($\mu\text{g}/\text{m}^3$)	Annual AAL ^B ($\mu\text{g}/\text{m}^3$)	24-Hr <i>De Minimis</i> ^C (lbs/day)	Annual <i>De Minimis</i> (lbs/yr)
65996 – 93 – 2	Coal tar pitch volatiles, as benzene soluble aerosol	I	0.71	0.48	0.0084	3.1
74222 – 97 – 2	Sulfometuron methyl, inhalable fraction and vapor	II	25	17	0.30	108
86290 – 81 – 5	Gasoline	II	4477	2985	53	19414
95465-99-9	Cadusafos, inhalable fraction and vapor	I	0.0036	0.0024	0.000042	0.016
111988-49-9	Thiacloprid, inhalable fraction	I	0.71	0.48	0.0085	3.1
128639-02-1	Carfentrazone-ethyl, inhalable fraction	II	5.0	3.4	0.060	22
131341-86-1	Fludioxonil, inhalable fraction	I	3.6	2.4	0.042	16
946578-00-3	Sulfoxaflor, inhalable fraction	I	0.36	0.24	0.0042	1.6

Footnotes:

a.

^A Toxicity Classification as classified in Env-A 1407, in general:

Toxicity Class I: Classification established pursuant to Env-A 1407.02.

Toxicity Class II: Classification established pursuant to Env-A 1407.03.

Toxicity Class III: Classification established pursuant to Env-A 1407.04.

^B Ambient air limit.^C De minimis values were calculated using non-rounded AALs. The AALs and de minimis values represented in this table are rounded to whole numbers or 2 significant figures if less than 10.^E Denotes regulated toxic air pollutants which have data limitations preventing derivation of AALs in accordance with Env-A 1411.

APPENDIX A: STATE STATUTES IMPLEMENTED

Rule	State Statute Implemented
Env-A 1401	RSA 125-I:1; RSA 125-I:2; RSA 125-I:3, I & II
Env-A 1402.01(a) & (b)	RSA 125-I:3, III(a)
Env-A 1402.01(c) & (d)	RSA 125-I:3, III(b)
Env-A 1402.02	RSA 125-I:3, III(c)
Env-A 1402.03	RSA 125-I:3, III(c)
Env-A 1403.01 & 1403.02	RSA 125-I:3, I; RSA 125-I:5, I & V
Env-A 1404	RSA 125-I:5, V
Env-A 1404.07	RSA 125-I:5, V & RSA 125-I:2, VI
Env-A 1405.01	RSA 125-I:3, I; RSA 125-I:5, I & V
Env-A 1405.02-1405.04	RSA 125-I:1; RSA 125-I:2; RSA 125-I:3, I & II
Env-A 1406	RSA 125-I:5, I & IV
Env-A 1407	RSA 125-I:2, XIV; RSA 125-I:4
Env-A 1408 - 1411	RSA 125-I:4
Env-A 1412	RSA 125-I:4, V
Env-A 1413	RSA 125-I:1; RSA 125-I:5
Env-A 1414	RSA 125-I:4

APPENDIX B: STATUTORY DEFINITIONS**RSA 125-C:2**

III-a. "Biomass" means organic matter used as a fuel, not including wood derived from construction and demolition debris, as defined in RSA 149-M:4, IV-a; wood which has been chemically treated; or agricultural crops or aquatic plants or byproducts from such crops or plants, which have been used to rehabilitate a contaminated or brownfields site through a process known as "phytoremediation."

RSA 125-I:2

VI. "Compliance boundary" means the boundary of the property on which the stationary source is located or an alternate compliance boundary determined by the department in accordance with rules adopted pursuant to this chapter.

XVII. "Uncontrolled emission" means any emission of a regulated toxic air pollutant from a device or process at a stationary source that is not subject to treatment or removal by pollution control equipment prior to being emitted to the ambient air, or is emitted to the ambient air in amounts which have not been limited by conditions in an enforceable permit or document.



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Robert R. Scott, Commissioner

**FP 2021-82, Env-A 1400 Regulated Toxic Air Pollutants
Summary of Comments on Initial Proposal with DES Responses
December 21, 2021**

Introduction

Env-A 1400, Regulated Toxic Air Pollutants, implements RSA 125-I, the Air Toxic Control Act (Act), by listing regulated toxic air pollutants (RTAPs), classifying them, and establishing ambient air limits (AALs). The purpose of the statute is to prevent, control, abate, and limit the emissions of toxic air pollutants into the ambient air. The ambient air limits established under the rules are intended to promote public health by reducing human exposure to toxic air pollutants.

As required by RSA 125-I, the New Hampshire Department of Environmental Services (the Department) proposes changes to the list of RTAPs and their AALs every few years to reflect updates made to the list of chemical substances by the American Conference of Governmental Industrial Hygienists (ACGIH) and the US EPA's Integrated Risk Information System (IRIS). In this rulemaking, the ACGIH and IRIS updates for 2017, 2018, and 2019 are proposed to be incorporated. In that time frame, a total of 121 new chemical substances were added and 21 were removed.

The Department is also proposing changes to clarify sources obligations under the rule. These changes include: adding some definitions to clarify which form and portion of certain pollutants are subject to the standards; clarifying the procedures for how sources evaluate and document compliance with standards; clarifying compliance boundary criteria at facilities with leased property; clarifying the situations in which an air permit is required and the timing and content of applications for such permits; and, clarifying the opportunities and procedures for sources to request custom compliance demonstration methods – and the criteria against which the Department evaluates such requests.

Two members of the public attended the public hearing in person and 13 members of the public attended remotely via WebEx on September 29, 2021. Five members of the public submitted written comments. Written comments were also received from the Office of Legislative Services, Administrative Rules (OLS); those comments and the Department's responses thereto begin on page 5. Section/paragraph numbers refer to numbers in the IP unless otherwise noted.

Env-A 1400 generally re: toxic chemicals

Comment:

"...For many years I have encouraged the Department to look at persistent toxic substances as a group of chemicals with properties that make their continued dispersal into the environment an unacceptable and unnecessary risk to public health. Lead, mercury, and cadmium are examples of persistent, toxic substances because they accumulate in the environment and in the human body and cause harm in low doses..."

According to the Seventh Biennial Report:

As research findings demonstrate linkages between persistent toxic substances and biological injury, they continue to reinforce the Commission's conclusions, which are fundamental to its proposed policy approach: persistent toxic substances are too dangerous to the biosphere and

to humans to permit their release in any quantity, and all persistent toxic substances are dangerous to the environment, deleterious to the human condition, and can no longer be tolerated in the ecosystem, whether or not unassailable scientific proof of acute or chronic damage is universally accepted.

...The Department needs to acknowledge the truth about persistent, toxic chemicals that include heavy metals, dioxin, and per-and polyfluoroalkyl substances. Present and proposed regulatory standards for these pollutants are not health-based because these standards continue to allow toxic loading of the environment...

Response:

NH RSA 125-I, the Air Toxic Control Act is the regulatory basis upon which Env-A 1400, Regulated Toxic Air Pollutants rule is based. The General Court has made a policy decision in NH RSA 125-I which states that the purpose of the Act is “to promote the public health of the state by reducing human exposure to toxic chemicals by regulating releases of toxic chemicals into the ambient air.” The Act specifically identifies regulated toxic air pollutants (RTAPs) as hazardous air pollutants pursuant to Section 112(b) of the Clean Air Act and those chemical substances for which a threshold limit value has been established by the American Conference of Governmental Industrial Hygienists.

In order to achieve the purpose of the Act, under NH RSA 125-I:4, III, the Department is required to adopt rules, pursuant to RSA 541-A, designating a short-term and long-term ambient air limit (AAL). AALs are specific to each RTAP. In establishing AALs, the Department shall rely on threshold limit values (TLV), reference concentration limits (RfC), and such other generally accepted scientific data as may be available.

A TLV is an estimate based on the known toxicity in humans of a given substance and the reliability and accuracy of the latest sampling and analytical methods. A TLV is believed to be a level to which a worker can be exposed per shift in the worktime without adverse effects. A RfC is an estimate of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. The list of RTAPs and their AALs are updated every few years to reflect changes made to the list of chemical substances by the American Conference of Governmental Industrial Hygienists (ACGIH) and the US EPA’s Integrated Risk Information System (IRIS). In this rulemaking, the ACGIH and IRIS updates for 2017, 2018, and 2019 are proposed to be incorporated. In that time frame, a total of 121 new chemical substances were added and 21 were removed. The AALs established in this proposed rulemaking are based on the most recent science and exposure levels that are protective of human health and the environment.

With respect to evaluating the cumulative toxic effects of the emissions of multiple pollutants and the long-term accumulation of persistent toxic pollutants, the Act does not provide Department a regulatory basis upon which to establish limits based on these parameters.

Therefore, the Department has not revised the rules in response to this comment.

Env-A 1400 generally re: Formaldehyde Values

Comment 1:

“Given the scientific evidence demonstrating clear observable thresholds for effects from formaldehyde inhalation exposure, we continue to recommend NHDES not establish annual and 24-hr AALs that do not reflect the latest science. NHDES should: (1) use a threshold mode of action to calculate the annual AAL, and (2) use only acute exposure information and associated values as the basis for the 24-hr AAL.”

Comment 2:

“The NH DEP [DES] is proposing a 24-hr AAL for formaldehyde of 9.8 $\mu\text{g}/\text{m}^3$ based on chronic exposure health studies and an annual AAL of 1.8 $\mu\text{g}/\text{m}^3$ based on linear, non-threshold extrapolation of an occupational study. In contrast, the ATSDR acute MRL for formaldehyde of 49 $\mu\text{g}/\text{m}^3$ provides a scientifically defensible 24-hour AAL for New Hampshire. Similarly, the ATSDR chronic MRL for formaldehyde of 9.8 $\mu\text{g}/\text{m}^3$ provides a scientifically defensible annual AAL for New Hampshire. These values are conservative values that are protective of the general population, including susceptible subpopulations. They are based on the large body of toxicology and epidemiologic literature for formaldehyde, including mode-of-action considerations, and are comparable to (or the same as) values other bodies and authoritative organizations have derived.”

Response to Comments:

The EPA’s Integrated Risk Information System (IRIS) contains peer-reviewed, consensus based toxicity factors and is the primary source of toxicity information used by the NHDES (the Department). IRIS currently contains a formaldehyde inhalation Unit Risk factor that is used in calculating cancer risk. The calculation of an annual AAL based on a cancer endpoint is consistent with the approach of other states, including MA, ME, VT, NY and NJ. It should be noted that EPA has developed a draft IRIS formaldehyde assessment and this assessment addresses both non-cancer and cancer human health effects that may result from chronic inhalation exposure to this chemical. If EPA publishes an updated formaldehyde risk characterization on IRIS, the Department will review the characterization and make adjustment(s), if appropriate, to the AAL(s). Therefore, the Department will establish the annual AAL as originally proposed, at 1.8 $\mu\text{g}/\text{m}^3$. The Department notes that this is an increase from the current annual AAL of 0.88 $\mu\text{g}/\text{m}^3$.

Regarding the 24-hour AAL, the non-cancer adverse health effects of formaldehyde are largely a manifestation of its ability to irritate mucous membranes. As a result of its solubility in water and high reactivity, formaldehyde is efficiently absorbed into the mucus layers protecting the eyes and respiratory tract where it rapidly reacts, leading primarily to localized irritation. Env-A 1400 allows for emission up to the 24-hour AAL, but the average concentration over the course of the year must be at/below the annual AAL. There may be intermittent exposures throughout the year at concentrations up to the 24-hour AAL, and this exposure pattern could be repeated for many years. ATSDR acknowledges that there are uncertainties inherent in the application of the procedures to derive less than lifetime MRLs. As an example, acute inhalation MRLs may not be protective for health effects that are delayed in development or are acquired following repeated acute insults, such as hypersensitivity reactions, asthma, or chronic bronchitis. Based on the potential for repeated, intermittent exposures over a lifetime and formaldehyde potentially being a sensitizing agent, the Department will adopt the ATSDR chronic inhalation MRL as the 24-hour AAL to promote public health. For comparison purposes, Cal EPA has both an 8-hour Reference Exposure Level (REL) and a chronic REL of 9 $\mu\text{g}/\text{m}^3$ which is similar to the 24-hour AAL (9.8 $\mu\text{g}/\text{m}^3$) the Department is adopting.

The Department has not revised the rule in response to these comments.

Env-A 1401.03 and 1402.02 re: Renewable Natural Gas (RNG)

Comment:

Renewable Natural Gas (RNG) should be included in the list of exempt fuels in Env-A 1400 because it's characteristics are very similar to fossil fuel-based natural gas, which is exempt from Env-A 1400. In addition, there are other renewable fuels such as biodiesel and biomass that are exempt from Env-A 1400.

Response:

The use of the term bio synthetic gas in the current Env-A 1400 regulations comes directly from RSA 362-A, Limited Electrical Energy Producers Act, and specifies that it does not include gaseous renewable fuel derived from anaerobic digestion or composting. Therefore, Renewable Natural Gas (RNG) would not be included in the existing bio synthetic gas definition. The term RNG is specific to pipeline gas quality specifications listed for injection of biogas into the Liberty Utilities gas distribution system. The Department is aware of other gaseous fuels – specifically processed landfill gas (LFG) – that is generated and used in NH that may not specifically use the term RNG but have a similar contaminant content. In addition, EPA has specifically adopted a definition of non-hazardous secondary materials to include LFG and treats it as equivalent to other gaseous fuels such as biogas. Having a consistent term, to the extent possible, allows for consistent applicability of regulations for the use of these fuels and better clarity to regulated sources.

The Department agrees that based on available information, emissions of RTAPs from the combustion of certain gaseous fuels other than bio synthetic gas at stationary sources are adequately regulated under other provisions of state or federal law and pose little risk to human health. Specifically, the Department is aware of the potential for the formation of formaldehyde emissions from internal combustion engines when LFG has not been processed sufficiently to remove siloxanes. However, the removal of siloxane reduces the potential formation of formaldehyde emissions. Therefore, the Department is proposing to include an exemption for LFG in Env-A 1400 specifically to LFG that has been sufficiently processed to remove siloxane contaminants.

Therefore, the Department has revised the proposed rule by establishing a definition for “processed landfill gas” in Env-A 1401.03(k) and adding processed landfill gas to the list of exemptions in Env-A 1402.02.

Env-A 1403.01 and Env-A 1404.07 re: leased property and the compliance boundary

Comment:

The proposed language in Env-A 1404.07 moves “leased property” to outside of the compliance boundary and Env-A 1403.01 requires sources to demonstrate compliance with the new compliance boundary within 90 days following the effective date of the final rule. The Department should add language to allow existing sources not to remodel emissions to demonstrate compliance solely due to a change in the [Department’s] definition of compliance boundary. . Specifically, if there have been no changes to the source’s process equipment and no changes to the ambient air quality limits (AALs) for the applicable pollutants, and the lessee agrees; sources should be able to continue to demonstrate compliance using their existing compliance boundary (i.e., the property line) until a change in process or AALs occurs. Property owners and tenants should be provided with the flexibility to agree to their own lease

terms. As such, compliance demonstrations can be updated with new compliance boundaries upon request by the lessee. If the lessee waives the request, a new demonstration should not be required.

Response:

In accordance with RSA 125-I, uncontrolled emissions of RTAPs cannot exceed AALs at or beyond the compliance boundary. The Department treats property owned by one party but leased to another (lessee) as outside the compliance boundary and therefore is public property and requires that lessors manage their emissions of RTAPs such that they do not cause exceedances of AALs on property that they lease to others.

Relative to the timing of compliance, RSA 125-I states that when new or amended RTAPs or AALs are published, existing sources are required to update their compliance demonstrations to reflect the new requirements within 90 days of the effective date of the rule. Sources may have up to three years to make those changes necessary to demonstrate compliance with the new requirements. The Department is proposing to use this same transition system for the change to compliance boundaries relative to leased property.

Under these provisions, lessees will be required to either; demonstrate compliance with the changed compliance boundary, or submit a permit application and compliance plan describing steps they will take such that they can demonstrate compliance within three years. NHDES maintains that this system provides sources sufficient time to come into compliance with changed requirements.

The Department did not make any changes to the proposed rule regarding property leased to others or timing of compliance in response to this comment.

From OLS:

Env-A 1403.01(b)(1) and 1405.04 re: revisions to take effect after publication of special notice in Rulemaking Register

Comment:

*“**Note to Agency:** Pursuant to RSA 125-I;4, IV, the revisions “shall not take effect until such publication of a special notice in the Rulemaking Register has occurred.”...While not specifically required by the statute, making the effective date of the rule match the publication date makes it easier for the regulated community to determine the effective date as the date will appear in the rule’s source note.”*

Response:

The Department agrees that while not required, it is preferable that the effective date of the rule matches the date of publication in the Rulemaking Register to eliminate any potential confusion by the regulated community. The Department will make sure that these dates coincide. Moreover, while the timeframe for compliance with the standards is established in RSA 125-I:5, IV, and is triggered upon the publication date of the Rulemaking Notice (as correctly specified in the rule), synchronizing the effective date of the rule with the date of publication of the Rulemaking Register will also eliminate any confusion as for both the agency and the regulated community.

Env-A 1411.03(a) re: Timing of special notice in Rulemaking Register

Comment:

“Unclear/Legis. Intent: ...The statute specifies the reverse order [of what the rule says]...”

Response:

The Department has revised the proposed rule to match the statute, thus removing the basis for the comment.

Env-A 1412.02(a) re: reference to DES’ own rules needed

Comment:

“Unclear: While the reference to this law can stay, there should also be a reference to DES’ own rules on the subject, Env-C 207.”

Response:

The Department has revised the proposed rule accordingly.

Env-A 1414-1449 re: Reserved

Comment:

“Edit/Legis. Intent: These parts have been reserved since 2009 or before. Pursuant to section 4.10 of Ch. 4 of the Manual, ‘reserved’ is a temporary device to indicate rules that will be added later. Since these Part numbers have not been used for a long period, Env-A 1450 (the final part of Env-A 1400) should be renumbered as Env-A 1414.

Response:

The Department would like to keep the numbering as it currently stands because stakeholders and staff use this Table 1450 frequently. The long-standing numbering and use by stakeholders – and the very great likelihood of causing confusion among those to whom the rule applies if the table number were to be changed at this point -- outweighs any minor deviation from what the Rulemaking Manual requires.

Edits made to: 1401.03(i); 1404.07(d); 1412.03(a)(7)