

**Preliminary Information on Manufacturing, Processing,
Distribution, Use, and Disposal:**

Asbestos

CASRN: 1332-21-4

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Support document
for Docket EPA-HQ-OPPT-2016-0736

This document provides a preliminary public summary of available information collected by EPA's Office of Pollution Prevention and Toxics (OPPT) in the Office of Chemical Safety and Pollution Prevention (OCSPP) on the manufacturing (including importing), processing, distribution in commerce, use, and disposal of this chemical. This is based on existing data available to EPA, including information collected under the Chemical Data Reporting rule, Toxics Release Inventory, information from other Agency databases, other U.S. Government agencies, publicly available information from states, and a review of published literature. In addition, the document includes information reported to EPA by producers and users of the chemical in the United States and in other countries.

This preliminary use information and any additional use information received in the docket by March 15, 2017 will inform efforts to develop the scope of the chemical risk evaluation required under section 6(b)(4) of the Toxic Substances Control Act, and will inform any risk management efforts following risk evaluation.

Mention of trade names in this document does not constitute endorsement by EPA. To verify products or articles containing this chemical currently in commerce, EPA has identified several examples. Any lists are provided for informational purposes only. EPA and its employees do not endorse any of the products or companies.

This document does not contain confidential business information (CBI).

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Docket: [EPA-HQ-OPPT-2016-0736](#)

MANUFACTURING, PROCESSING, DISTRIBUTION, USE AND DISPOSAL

1. Manufacturing (Including Importing)

As a naturally occurring mineral, asbestos is manufactured by mining, but asbestos has not been mined (or manufactured) in the United States since 2002 (Flanagan, 2016).

For the 2016 Chemical Data Reporting (CDR) period, two companies reported importing asbestos in 2016¹, ². These companies, Axiall Corporation and Olin Corporation, belong to the chloralkali industry. The imported amounts cannot be disclosed due to company claims of Confidential Business Information (CBI).

The United States Geological Survey (USGS) produces an annual report on asbestos known as the *Minerals Yearbook* (Flanagan, 2016). USGS also published a Mineral Commodity Summary in 2017 (USGS, 2017). USGS analyzes and provides summaries of asbestos data, including data from the U.S. Census Bureau. According to USGS, in 2016, the United States imported 340 metric tons of raw chrysotile asbestos – 95% of which was imported from Brazil and 5% imported from Russia (USGS, 2017). USGS also estimates that imported products containing asbestos were valued at \$4.63 million in 2015 (Flanagan, 2016). The below asbestos product categories presented by USGS in their *Minerals Yearbook* are from the Harmonized Tariff Schedule (HTS), which exporters use to identify shipments. The amount of asbestos in specific products is unknown. It is also noted by USGS that product shipments in some cases may have been misclassified by exporters as asbestos-containing products.

The asbestos-containing product categories include:

- Asbestos-cement
- Crocidolite products (except footwear)
- Clothing (except footwear)
- Paper, millboard, and felt
- Compressed asbestos fiber jointing
- Other fabricated asbestos fibers
- Yarn and thread
- Cords and string
- Woven or knitted fabrics
- Products for use in civil aircraft
- Gaskets, packing, and seals
- Building materials
- Asbestos articles not elsewhere specified
- Brake linings and pads, civil aircraft

¹ Manufacturers (including importers) are required to report under CDR if they meet certain production volume thresholds, generally 25,000 lb or more of a chemical substance at any single site. Reporting is triggered if the annual reporting threshold is met during any of the calendar years since the last principal reporting year. In general, the reporting threshold remains 25,000 lb per site. However, a reduced reporting threshold (2,500 lb) now applies to chemical substances subject to certain TSCA actions. <https://www.epa.gov/chemical-data-reporting/how-report-under-chemical-data-reporting>

² Manufacture means to manufacture, produce, or import for commercial purposes. Manufacture includes the extraction, for commercial purposes, of a component chemical substance from a previously existing chemical substance or complex combination of chemical substances. (40 CFR 711.3)
https://www.epa.gov/sites/production/files/2015-12/documents/cdr_fact_sheet_importers_final_dec2015_0.pdf

- Brake linings and pads, other
- Other friction materials, civil aircraft
- Other friction materials

According to the USGS *2015 Minerals Yearbook*, asbestos-containing products are imported from the following countries:

Belgium	Italy	Spain
Brazil	Japan	Switzerland
Canada	Israel	Taiwan
China	Mexico	United Kingdom
El Salvador	Norway	
Germany	Peru	

According to the USGS all of the current raw asbestos use in the United States occurs in the chloralkali industry, which uses chrysotile asbestos to manufacture semipermeable diaphragms for use in the chlorine and caustic soda production process (USGS, 2017).

During a meeting with EPA in January 2017, industry representatives stated that in the United States, there are three companies who own a total of 15 chloralkali plants that continue to manufacture and use chrysotile-containing semipermeable diaphragms onsite. As described by the industry representatives, the asbestos for these diaphragms is imported in sealed containers, with the asbestos in sealed bags made of dust-proof, woven plastic. After arriving at the plant, the sealed bags are placed inside a glove box. A trained operator removes the asbestos and puts it in a caustic bag where it becomes wet. Once wet, binding agents are added to the caustic bag to allow for handling and storage in dry form. A vacuum is then used to remove the material from a bath where it is placed into an oven and the asbestos fuses to the diaphragm.

Industry representatives stated during meetings with EPA that a standard-sized manufacturing cell will have a surface area of 70 meters square (m²) and each cell will typically have 20 chrysotile asbestos diaphragms within it, although cell size can vary. The cell will typically operate for 1-3 years before it has to be replaced due to a loss of conductivity. Many factors can determine the life of a cell, including the brine quality and the size of the cell. When the diaphragm cell is replaced, the asbestos is pulled out, remaining in a wet state, sealed into containers, and sent to a landfill that accepts asbestos-containing waste per federal and state asbestos disposal regulations.

EPA's Regulatory Impact Assessment for the 1989 Asbestos Ban and Phase-out rule also provides a description of the processes used with the asbestos diaphragms:

"Asbestos diaphragms are prepared at the chlorine plant site itself and are not available as pre-manufactured products ready for use. In the diaphragm forming process, a slurry of asbestos in water is drawn through a screen or perforated plate by vacuum techniques. Asbestos fibers are deposited on the screen, or plate, forming a paper-like mat approximately an eighth of an inch thick."

EPA 1989. Regulatory Impact Analysis of Controls on Asbestos and Asbestos Products, Final Report, Volume III, Appendix F. Office of Toxic Substances. January 19, 1989.

U.S. Geological Survey, 2017, Mineral commodity summaries 2017: U.S. Geological Survey, 202p. Retrieved from <https://minerals.usgs.gov/minerals/pubs/mcs/2017/mcs2017.pdf>

Flanagan, D. M. (December, 2016). Asbestos. U.S. Geological Survey 2015 Minerals Yearbook. Retrieved from <https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/myb1-2015-asbes.pdf>

About CDR: <https://www.epa.gov/chemical-data-reporting>

2. Processing

EPA does not have information pertaining to asbestos processing, as defined under the Toxic Substance Control Act (TSCA)³.

3. Products and Articles

In addition to chloralkali diaphragms, asbestos-containing products remaining in use within the United States include some roof and non-roof coatings, gaskets, brake blocks and aftermarket friction products, most of which are imported. USGS import data suggests other asbestos-containing products (e.g., asbestos-containing building materials; woven materials) are manufactured outside the United States and imported for domestic use (Flanagan, 2016).

EPA staff conducted an online search using various search terms to determine any currently available asbestos-containing products in the United States. The products listed below were either advertised as containing asbestos or the associated material safety datasheet (MSDS) listed asbestos as a product constituent. This list is provided for informational purposes only. EPA and its employees do not endorse any of the products or companies listed.

³ The term "process" in the context of CDR and TRI means the preparation of a chemical substance or mixture, after its manufacture, for distribution in commerce—

(A) in the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such substance or mixture, or

(B) as part of an article containing the chemical substance or mixture.

<http://uscode.house.gov/view.xhtml?path=/prelim@title15/chapter53&edition=prelim>

The term "otherwise use" under TRI means any use of an EPCRA Section 313 chemical, including an EPCRA Section 313 chemical contained in a mixture or other trade name product or waste, that is not covered by the terms manufacture or process. <https://www.epa.gov/sites/production/files/documents/ry2012rfi.pdf>

Table 1. List of Asbestos-Containing Products Currently Available for Purchase on the Internet

Use of the Product	Link to references, SDS or industry information
Brake blocks (for use in oil field equipment)	https://www.howard-supply.com/products/FEATURED-ITEMS/FEATURED-ITEMS6.aspx https://www.howard-supply.com/default.aspx?page=item+detail&itemcode=7133284
Brake blocks (for use in oil field equipment)	http://www.stewartandstevenson.com/assets/files/pdf/rig/silverline-sp-brake-blocks.pdf
Brake liners	https://www.amazon.com/Dutton-Lainson-Company-205123-Asbestos-Brake/dp/B005G2017M/ref=sr_1_253?s=automotive&ie=UTF8&qid=1483479036&sr=1-253&keywords=asbestos https://www.dutton-lainson.com/proddetail.php?prod=205123_RP_CD4000_9_14
Roof Coatings	Water Proofing Compound http://www.dissco.net/products/products.asp?540.txt http://www.dissco.net/pdfs/04a-msds-540.pdf Fibered Roof Coating http://www.dissco.net/products/products.asp?550.txt http://www.dissco.net/pdfs/05a-msds-550.pdf Plastic Roofers Cement http://www.dissco.net/products/products.asp?560.txt http://www.dissco.net/pdfs/07a-msds-560.pdf
Roof Coatings	Plastic Asphalt Cement http://fieldscorp.com/commercial/products/msds/c200ms.html Plastic Asphalt Cement http://fieldscorp.com/commercial/products/msds/c250ms.html All Weather Asphalt Mastic http://fieldscorp.com/commercial/products/msds/c300ms.html Asphalt Coating & Adhesive http://fieldscorp.com/commercial/products/msds/c100ms.html
Mirror Adhesive	http://mirro-mastic.com/wp-content/uploads/2011/05/Mirro-Mastic-MSDS.pdf
Non-Roofing Adhesives, Sealants, and Coatings	http://fieldscorp.com/commercial/products/msds/c240ms.html
Non-Roofing Adhesives, Sealants, and Coatings	Foundation Coating http://www.dissco.net/products/products.asp?520.txt http://www.dissco.net/pdfs/02a-msds-520.pdf Culvert Coating http://www.dissco.net/products/products.asp?590.txt http://www.dissco.net/pdfs/08a-msds-590.pdf
Gaskets	http://midamericainternationaltrading.com/
Gaskets	http://www.pilotshop.com/catalog/eppages/an900.php?utm_source=google&utm_medium=cse&utm_term=AN900-15&gclid=CjwKEAiAqJDBRCG5KK6hq_juDwSJABRm03hDfLLDER3F2wE_ZR08j1PgWEjwaFEug_Xn95A1HpmwhoCi6fw_wcB

EPA has reviewed the below websites that list manufacturers/ distributors/ retailers of asbestos-containing products. Some companies are no longer in business or have been rebranded or absorbed by another company. In researching these companies' products and their material safety data sheets (MSDS), EPA has found little evidence of continued asbestos use. The following databases were consulted:

- U.S. EPA Chemical and Product Categories (CPCat) Database
<https://actor.epa.gov/cpcat/faces/chemicalUse.xhtml?casrn=1332-21-4>
- U.S. Department of Health & Human Services *Household Products Database*
<https://hpd.nlm.nih.gov/cgi-bin/household/brands?tbl=chem&id=1379>
- DeLima Associates *Consumer Product Information Database (CPID)*
 - Anthophyllite asbestos
<https://www.whatsinproducts.com/chemicals/view/1/2239/017068-78-9>
 - Chrysotile asbestos
<https://www.whatsinproducts.com/chemicals/view/1/1800/012001-29-5>
 - Tremolite (nonasbestiform)
 - <https://www.whatsinproducts.com/chemicals/view/1/2240/014567-73-8>

4. Distribution (Includes Retailers)

Aftermarket asbestos-containing products can be found and purchased on the websites of several online merchants.

5. Use

Use of asbestos in products imported, manufactured, processed or distributed in U.S. commerce has continued to decline since its peak use in the mid-1970s. The remaining use of asbestos-containing products in the United States occurs primarily in the chloralkali industry where chrysotile asbestos is used in semipermeable diaphragms for chlorine and caustic soda production. There is also evidence of domestic use in some roof coatings, non-roof coatings, brake blocks (for use in oilfield equipment), imported aftermarket brake products and gaskets, most of which are imported. USGS import data suggests other asbestos-containing products (e.g., asbestos-containing building materials; woven materials) are manufactured outside the United States and imported for domestic use (Flanagan, 2016).

Flanagan, D. M. (December, 2016). Asbestos. U.S. Geological Survey 2015 Minerals Yearbook. Retrieved from <https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/myb1-2015-asbes.pdf>

Use at Industrial Sites

According to the U.S. Geological Survey's *Mineral Commodity Summaries* released in January 2017, 100% of raw asbestos imported to the United States in 2016 was for use by the chloralkali industry (USGS, 2017). Asbestos is used in semipermeable diaphragms, which effectively separate the anode from the cathode chemicals in the production of chlorine and sodium hydroxide (caustic soda) (USGS, 2017).

U.S. Geological Survey, 2017, Mineral commodity summaries 2017: U.S. Geological Survey, 202p. Retrieved from <https://minerals.usgs.gov/minerals/pubs/mcs/2017/mcs2017.pdf>

Commercial Uses

Chrysotile asbestos has several unique properties to include low electrical conductivity while also boasting high tensile strength, high friction coefficient, and high resistance to heat (Virta, 2011). These properties made asbestos ideal for use in friction materials (brakes), insulation (sound, heat, and electrical), and building materials (cement pipes, roofing compounds, flooring) over the past century. However, due to health concerns and consumer preference, most products in the United States are now asbestos-free.

Virta, R. (2011). Asbestos. Kirk-Othmer Encyclopedia of Chemical Technology. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/0471238961.0119020510151209.a01.pub3/pdf>

Consumer Uses

Asbestos-containing products available for consumer use may include a limited number of roof and non-roof coatings, gaskets, and imported aftermarket friction products. USGS import data suggests other asbestos-containing products (e.g., asbestos-containing building materials; woven materials) are manufactured outside the United States and imported for domestic use (Flanagan, 2016).

Flanagan, D. M. (December, 2016). Asbestos. U.S. Geological Survey 2015 Minerals Yearbook. Retrieved from <https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/myb1-2015-asbes.pdf>

6. Disposal of Waste and Recycling/Recovery

Recycling and Recovery

Asbestos is identified as a Hazardous Air Pollutant (HAP) in [Section 112](#) of the Clean Air Act (CAA, 42 U.S.C. §7401 et seq.). [Hazardous air pollutants](#) are those known to cause cancer and other serious health impacts. The Clean Air Act requires the EPA to regulate toxic air pollutants, also known as air toxics, from categories of industrial facilities. As such, asbestos is a strictly managed waste.

The only permissible recycling of asbestos requires EPA approval as per §61.155 *Standard for operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material* under the [Asbestos NESHAP](#), whereby “[a]ny product material that is not asbestos-free shall be either disposed of as asbestos-containing waste material or recycled as waste feed to the process.”

Disposal of Waste

The Toxics Release Inventory (TRI) program established under Section 313 of the [Emergency Planning and Community Right-to-Know Act \(EPCRA\)](#) requires facilities to report environmental release of asbestos and other hazardous substances. A "release" of a chemical means that it is emitted to the air or water, or placed in some type of land disposal. This data is collected annually and made available to the public <https://www.epa.gov/toxics-release-inventory-tri-program>. For reporting to TRI, the de minimis concentration level for asbestos is 0.1 percent. In 2016, 25,550,164 pounds of asbestos releases were reported to TRI and are generally related to building remediation, abatement work, and the production of chlorine and caustic soda.⁴

About TRI: <https://www.epa.gov/toxics-release-inventory-tri-program/learn-about-toxics-release-inventory>

In the workplace, OSHA requires that “[w]aste, scrap, debris, bags, containers, equipment, and clothing contaminated with asbestos consigned for disposal, shall be collected, recycled and disposed of in sealed impermeable bags, or other closed, impermeable containers” [1910.1001\(k\)\(6\)](#).

Similarly, the Asbestos NESHAP minimizes asbestos release during blinding renovation/demolition by requiring asbestos-containing waste material be sealed in a leak-tight container while wet, labeled, and disposed of properly in a landfill qualified to receive asbestos waste.

<https://www.epa.gov/asbestos/asbestos-national-emissions-standard-hazardous-air-pollutants-neshap#was>.
[Transport and Disposal of Asbestos Waste \(Appendix D to Subpart E of 40 CFR Part 763\)](#)

Landfills have special requirements for handling and securing the asbestos-containing waste to prevent releases of asbestos into the air. Transportation vehicles that move the waste from the point of generation to the asbestos landfill have special labeling requirements and waste shipment recordkeeping requirements. <https://www.epa.gov/asbestos/asbestos-national-emissions-standard-hazardous-air-pollutants-neshap#was>. Specific waste management practices are controlled at the state level.

⁴ A facility must report to the TRI program if it meets all three of the following criteria: 1) is in a specific industry sector, 2) employs 10 or more full-time equivalent employees, and 3) manufactures, processes, or otherwise uses a [TRI-listed chemical](#) in quantities above applicable threshold levels for a given chemical in a given year. <https://www.epa.gov/toxics-release-inventory-tri-program/basics-tri-reporting>

USEFUL TYPES OF INFORMATION

This document presents a summary of information currently available to EPA on this chemical. To more fully characterize the manufacturing, processing, distribution, disposal, and use of this chemical, and to inform the development of the scoping document for this chemical, EPA is interested in obtaining information on:

- the functional uses for this chemical;
- what types of products contain this chemical;
- which industry sectors use this chemical;
- what volume of the chemical is used;
- which uses have been discontinued or phased out;
- exposure scenarios for this chemical; and
- in which articles this chemical is found.

APPENDIX: SOURCES CONSULTED

- U.S. EPA *Chemical Inventory*
<https://www.epa.gov/tsca-inventory>
- U.S. EPA *ChemView*
<https://java.epa.gov/chemview>
- TRI P2 information
<https://www.epa.gov/toxics-release-inventory-tri-program/pollution-prevention-p2-and-tri>
- U.S. EPA *HPV HC* (access through Chemical Data Access Tool – CDAT)
https://java.epa.gov/oppt_chemical_search/
- U.S. EPA *HPVIS* and *HPV HC* (access through Chemical Data Access Tool – CDAT)
https://java.epa.gov/oppt_chemical_search/
- DfE Alternatives Assessments
<https://www.epa.gov/saferchoice/design-environment-alternatives-assessments>
- Safer Chemical Ingredients List
<https://www.epa.gov/saferchoice/safer-ingredients>
- Green Chemistry awards
<https://www.epa.gov/greenchemistry/presidential-green-chemistry-challenge-winners>
- Greener products and services
<https://www.epa.gov/greenerproducts/identify-greener-products-and-services>
- Pollution Prevention
<https://www.epa.gov/p2/pollution-prevention-case-studies>
<https://www.epa.gov/p2/grant-programs-pollution-prevention#sra>
<https://www.epa.gov/p2/pollution-prevention-tools-and-calculators>
- U.S. EPA *InertFinder*
<https://iaspub.epa.gov/apex/pesticides/f?p=101:1:>
- U.S. EPA *Pesticide Chemical Search*
<https://iaspub.epa.gov/apex/pesticides/f?p=CHEMICALSEARCH:1:0::NO:1::>
- U.S. EPA *Endocrine Disruptor Screening Program*
<https://www.epa.gov/ingredients-used-pesticide-products/endocrine-disruptor-screening-program-tier-1-assessments>
- U.S. EPA *Hazardous Waste*
<https://www.epa.gov/hw/learn-basics-hazardous-waste#regulations>
- U.S. EPA *Superfund chemical data matrix*
<https://www.epa.gov/superfund/superfund-chemical-data-matrix-scdm-query>
- U.S. EPA *Hazardous Air Pollutants*
<https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications>
- U.S. EPA *Significant New Alternatives Policy (SNAP)*
<https://www.epa.gov/snap>
- U.S. EPA *Volatile Organic Compounds*
<https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds#definition>
- U.S. EPA *Toxic and priority pollutants under the Clean Water Act*
<https://www.epa.gov/eg/toxic-and-priority-pollutants-under-clean-water-act#toxic>

- U.S. EPA *Contaminant Candidate list under the Safe Drinking Water Act*
<https://www.epa.gov/ccl/contaminant-candidate-list-3-ccl-3#chemical-list>
- U.S. EPA *IRIS Assessment*
<https://cfpub.epa.gov/ncea/iris2/atoz.cfm>
- U.S. EPA *SRS*
https://iaspub.epa.gov/sor_internet/registry/substreg/searchandretrieve/substancesearch/search.do
- U.S. EPA *Chemical and Product Categories (CPCat) Database*
<https://actor.epa.gov/cpcat/faces/home.xhtml>
- U.S. National Library of Medicine *ChemIDplus*
<https://chem.sis.nlm.nih.gov/chemidplus/>
- U.S. National Library of Medicine *Hazardous Substance Data Bank (HSBD)*
<https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- U.S. Department of Health & Human Services *Household Products Database*
<https://hpd.nlm.nih.gov/index.htm>
- OSHA *Chemical Hazards and Toxic Substances*
<https://www.osha.gov/SLTC/hazardoustoxicsubstances/index.html>
- NIOSH Workplace Safety and Health Topics *Chemicals*
<http://www.cdc.gov/niosh/topics/chemical.html>
- NIOSH *Pocket Guide to Chemical Hazards*
<http://www.cdc.gov/niosh/npg/npgdcas.html>
- CPSC *Chemicals*
<http://www.cpsc.gov/en/Research--Statistics/Chemicals/>
- CPSC *FHSA*
<https://www.cpsc.gov/Business--Manufacturing/Business-Education/Business-Guidance/FHSA-Requirements/>
- Food and Drug Administration *List of Databases*
<http://www.fda.gov/ForIndustry/FDABasicsforIndustry/ucm234631.htm>
- NTP (National Toxicology Program) *Substances studied by NTP*
<http://ntpsearch.niehs.nih.gov/?e=True&ContentType=Testing+Status>
- Department of Energy *Protective Action Criteria Database*
<http://energy.gov/ehss/protective-action-criteria-pac-aegls-erpgs-teels-rev-29-chemicals-concern-may-2016>
- California Department of Toxic Substances Control *Toxics in Products*
<http://www.dtsc.ca.gov/PollutionPrevention/ToxicsInProducts/index.cfm>
<http://www.dtsc.ca.gov/SCP/CandidateChemicalsList.cfm>
<http://www.dtsc.ca.gov/SCP/WhatIsAPriorityProduct.cfm>
- California Office of Environmental Health Hazard Assessment *Proposition 65*
<http://oehha.ca.gov/proposition-65/chemicals>
<http://oehha.ca.gov/proposition-65/proposition-65-list>
- California Office of Environmental Health Hazard Assessment *Biomonitoring*
<http://biomonitoring.ca.gov/chemicals>
- California *permissible exposure limits for chemical contaminants*
https://www.dir.ca.gov/title8/5155table_ac1.html

- California *hazardous substance list*
<https://www.dir.ca.gov/title8/339.html>
- California *Safe Cosmetics Program – list of chemical agents known or suspected to cause cancer or developmental or other reproductive harm.*
<http://www.cdph.ca.gov/programs/cosmetics/Pages/default.aspx>
<https://safecosmetics.cdph.ca.gov/search/Default.aspx>
- Maine *chemicals of high concern*
<http://www.maine.gov/dep/safechem/highconcern/>
- Massachusetts *Toxics Use Reduction Act (TURA) (link includes a link to Higher hazard substances list)*
<http://www.mass.gov/eea/waste-mgmt-recycling/toxics/toxic-use-reduction/toxics-use-reduction-act/>
- Massachusetts *Complete list of TURA chemicals*
<http://www.mass.gov/eea/agencies/massdep/toxics/tur/toxics-use-reduction-act-tura-reporting-and-fees.html>
- Lowell Center for Sustainable Production *Chemical, Policy and Science Initiative*
<http://www.chemicalspolicy.org/chemicalspolicy.us.state.database.php>
- Minnesota Department of Health *Toxic Free Kids Act Chemicals of High Concern*
<http://www.health.state.mn.us/divs/eh/hazardous/topics/toxfreekids/highconcern.html>
- Michigan *Environmental Health Topics*
http://www.michigan.gov/mdhhs/0,5885,7-339-71548_54783_54784_74881-13050--,00.html
- New Hampshire *Regulated Toxic Air Pollutants*
<http://des.nh.gov/organization/commissioner/legal/rules/documents/env-a1400.pdf>
- New Jersey *Right to Know Hazardous Substances*
<http://web.doh.state.nj.us/rtkhsfs/rtkhsf.aspx>
- Oregon *Priority Persistent Pollutants (in water)*
<http://www.deq.state.or.us/wq/SB737/>
- Oregon *Pollutant Profiles*
<http://www.deq.state.or.us/wq/SB737/docs/LegRpAtt420100601.pdf>
- Oregon *Reducing Toxics in Oregon*
<http://www.oregon.gov/deq/Pages/ToxicsReduction.aspx>
- Oregon *Chemicals of Concern for Children’s Health*
<http://public.health.oregon.gov/HealthyEnvironments/HealthyNeighborhoods/ToxicSubstances/Pages/childrens-chemicals-of-concern.aspx>
- Pennsylvania Department of Labor and Industry *Hazardous Substance List*
<http://www.pacode.com/secure/data/034/chapter323/chap323toc.html>
- Rhode Island *Air Resources – Air Toxics*
http://www.dem.ri.gov/pubs/regs/regs/air/air22_08.pdf
- Vermont *Chemical Disclosure Program for Children’s Products*
<http://www.healthvermont.gov/enviro/chemical/cdp.aspx>
- Washington *Chemicals of High Concern to Children*
<http://www.ecy.wa.gov/programs/hwtr/rtt/cspa/chcc.html>
- Washington *Children’s Safe Products Act*
<http://apps.leg.wa.gov/RCW/default.aspx?cite=70.240>

- Washington Department of Labor & Industries *SHARP Publications*
<http://www.lni.wa.gov/Safety/Research/Pubs/default.asp>
- National Conference of State Legislatures
<http://www.ncsl.org/research/environment-and-natural-resources/state-chemical-statutes.aspx>
- Canada *Chemicals Portal*
<http://chemicalsubstanceschimiques.gc.ca/index-eng.php>
- EU *ECHA website*
<https://echa.europa.eu/>
- Australia *NICNAS Chemical Information*
<https://www.nicnas.gov.au/chemical-information>
- Japan *Chemical Risk Information Platform (CHIRP)*
http://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop
- OECD *eChemPortal*
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- Stockholm Convention on Persistent Organic Pollutants
<http://chm.pops.int/TheConvention/ThePOPs/ListingofPOPs/tabid/2509/Default.aspx>
<http://chm.pops.int/TheConvention/ThePOPs/ChemicalsProposedforListing/tabid/2510/Default.aspx>
- WHO IPCS (UN)
<http://www.who.int/ipcs/en/>
- Other – worker protection information
<http://www.dguv.de/ifa/gestis/gestis-internationale-grenzwerte-fuer-chemische-substanzen-limit-values-for-chemical-agents/index-2.jsp>
- DeLima Associates *Consumer Product Information Database (CPID)*
<https://www.whatsinproducts.com/chemicals/index/1>
- SRC *FatePointers Search Module PHYSPROP*
<http://esc.syrres.com/fatepointer/search.asp>
- Product and company websites