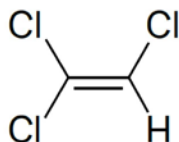


Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal:

Trichloroethylene

CASRN: 79-01-6



February 2017

Support document
for Docket EPA-HQ-OPPT-2016-0737

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-2016-0737

MANUFACTURING, PROCESSING, DISTRIBUTION, USE, AND DISPOSAL

1. Manufacturing (Including Importing)

For the 2016 Chemical Data Reporting (CDR) period, non-confidential data reported indicate there are 13 manufacturers (including importers) of trichloroethylene (TCE) in the United States^{1,2}. The total volume (in lbs.) of TCE manufactured (including imported) in the United States in 2012 was 220,536,812; in 2013: 198,987,532; in 2014: 191,996,578; in 2015: 171,929,400.

For the 2015 Toxics Release Inventory (TRI), for all reported uses, 20 facilities reported releases of TCE³. Of those sites, 17 reported manufacture in the United States, 3 reported import, 6 reported on site use/processing, and 118 reported other uses (some sites reported in multiple categories)⁴. A total of 202.5 million lbs. of TCE were manufactured in the United States or imported into the United States

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 in the context of CDR 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

Similarly, the term “manufacture” in the context of TRI means to produce, prepare, compound, or import an EPCRA Section 313 chemical. The term “manufacture” also includes coincidental production of an EPCRA Section 313 chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, otherwise use or disposal of another chemical or mixture of chemicals. <https://www.epa.gov/sites/production/files/documents/ry2012rfi.pdf>

³ 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>

⁴ 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. See the definition of “otherwise use” for additional details on applicability of otherwise use with regard to disposal, stabilization, and treatment for destruction. https://www.epa.gov/sites/production/files/2016-01/documents/ry_2015_tri_reporting_forms_and_instructions.pdf

that year. Of that total, 111,357,182 lbs. of TCE were manufactured in the United States and 91,183,302 lbs. were imported.

2. Processing

Since 2012, based on information reported to TRI, the number of facilities that process TCE has declined.

As reported to TRI for 2012, 38 facilities used TCE as a formulation component, 33 facilities processed TCE by repackaging the chemical, 28 facilities used TCE as a manufacturing aid, and 1,113 facilities used TCE for ancillary uses, such as degreasing. Based on information reported to TRI for 2014, the number of users of TCE has significantly decreased since 2012: 24 facilities used TCE as a formulation component, 20 facilities processed TCE by repackaging the chemical, 20 facilities used TCE as a manufacturing aid, and 97 facilities used TCE for ancillary uses, such as degreasing.

Based on information reported to TRI for 2015, the number of users of TCE continued to decrease from 2014: 22 facilities used TCE as a formulation component, 17 facilities processed TCE by repackaging the chemical, 21 facilities used TCE as a manufacturing aid, and 90 facilities used TCE for ancillary uses, such as degreasing.

3. Products and Articles

EPA has identified the following types of products currently in commerce. This list is provided for informational purposes only. EPA and its employees do not endorse any of the products or companies.

Products containing TCE include:

- Aerosol spray degreasers
- Spot cleaners
- Cleaning wipes
- Carpet cleaner
- Hoof polishes
- Pepper spray
- Mirror edge sealants
- Sealants
- Adhesive
- Toner aid
- Penetrating lubricant
- Tap and die fluid
- Mold release
- Lace wig and hair extension glues

Aerosol Spray Degreasers

EPA identified 16 different aerosol spray degreaser products that contain TCE, blended by 6 different firms.

Table 1. List of Products – Aerosol Spray Degreasers

Trade name	Use of the Product	% by weight of chemical	Link to references, SDS or industry information
C-60 Solvent Degreaser	Aerosol degreasing	90-100%	http://www.spraywayinc.com/sites/all/themes/theme687/msds/sw063.pdf , http://www.spraywayinc.com/sites/all/themes/theme687/msds/sw064.pdf
Fusing Machine Cleaner	Aerosol degreasing	50-60%	http://www.spraywayinc.com/sites/all/themes/theme687/msds/sw823.pdf
Solvent Degreaser	Aerosol degreasing	> 90%	http://www.clairemfg.com/sites/all/themes/theme623/msds/c063.pdf , http://www.clairemfg.com/sites/all/themes/theme623/msds/c064.pdf
Electro Blast	Aerosol degreasing	90-100%	http://procheminc.com/proddocs/ELECTRO%20BLAST%201649%20SDS_1.pdf
Electro Solv	Aerosol degreasing	90-100%	http://procheminc.com/proddocs/ELECTRO%20SOLV%201616%20SDS_1.pdf
Pro Tools NF Solvent Degreaser	Aerosol degreasing	60-100%	http://procheminc.com/proddocs/PRO%20TOOLS%20NF%20SOLVENT%20DEGREASER%201494%20SDS_2.pdf
Aerosolve II	Aerosol degreasing	>90%	https://sds.zepinc.com/ehswww/zep/result/report.jsp?P_LANGU=E&P_SYS=2&P_SSN=16908&P_REP=000000000000000000000007&P_RES=17657 , https://sds.zepinc.com/ehswww/zep/result/wait.jsp?P_LANGU=E&P_SYS=2&P_SSN=16970&P_REP=000000000000000000000008&P_RES=17722&P_SPEC=R
Power Solv II	Aerosol degreasing	90-100%	http://associatedfuelsystems.com/wp-content/uploads/2014/04/PowerSolv-II-Aerosol-SDS.pdf , http://www.jagoepublic.com/msds/degreasers-cleaners/Xep%20-%20Power%20Solv%20II.pdf
Zep 45	Aerosol degreasing	40-50%	https://sds.zepinc.com/ehswww/zep/result/direct_link.jsp?P_LANGU=E&P_SYS=2&P_SSN=11337&C001=MSDS&C002=US&C003=E&C013=374301&C123=SDS*
Super Solv	Aerosol degreasing	90-100%	https://sds.zepinc.com/ehswww/zep/result/report.jsp?P_LANGU=E&P_SYS=2&P_SSN=16999&P_REP=0000000000000000000000002&P_RES=17756 , https://sds.zepinc.com/ehswww/zep/result/report.jsp?P_LANGU=E&P_SYS=2&P_SSN=16999&P_REP=0000000000000000000000003&P_RES=17756
Parts Cleaner	Aerosol degreasing	45-55%	https://sds.zepinc.com
Electronic Contact Cleaner & Protectant - Aerosol	Aerosol degreasing	97%	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S02001000&lang=2

Trade name	Use of the Product	% by weight of chemical	Link to references, SDS or industry information
Flash Free Electrical Degreaser	Aerosol degreasing	98%	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S20848000&lang=2
Chlorinated Brake & Parts Cleaner - Aerosol	Aerosol degreasing	98%	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S00709000&lang=2
MR 351 - Mold Cleaner	Aerosol degreasing	69%	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S00351000&lang=2
C-60 Solvent [TCE Cleaner] Degreaser	Aerosol degreasing	90-100%	http://www.brownells.com/userdocs/MSDS/083-060-024.pdf

Spot Cleaning Products

EPA identified 11 spot cleaning products blended by 7 different firms.

Table 2. List of Products – Spot cleaning

Trade name	Use of the Product	% by weight of chemical	Link to references, SDS or industry information
Picrin	Spot cleaning	>75%	http://www.packagesupply.net/private/msds/streets/picrin.pdf
2-1 Formula	Spot cleaning	<50%	http://www.nortonsupply.com/msds/streets/2-1formula.pdf
Puro	Spot cleaning	<100% >75%	http://www.nortonsupply.com/msds/Adco/puro.pdf https://a-1products.com/wp-content/uploads/2016/06/Puro-GHS-SDS.pdf
Semi-Wet Spotter	Spot cleaning	<100% <75%	http://www.nortonsupply.com/msds/Adco/semiwet.pdf https://a-1products.com/wp-content/uploads/2016/06/Semi-Wet-GHS-SDS.pdf
Volatile Dry Spotter (V.D.S)	Spot cleaning	<100%	http://www.tschoppsupply.com/wp/wp-content/uploads/2012/03/index_28_544188507.pdf
Fast PR	Spot cleaning	95-99%	https://caledclean.com/files/FAST%20PR.pdf
TarGo Dry	Spot cleaning	approx. 25% 15-25%	http://www.alwilson.com/products/targo_dry/TarGo%20Dry%20MSDS.pdf
ReddyGo	Spot cleaning	approx. 25% 15-25%	http://www.alwilson.com/products/reddygo/ReddyGo%20MSDS.pdf
Dry Side Spotter	Spot cleaning	100%	https://www.wausauchemical.com/products?page=shop.getfile&file_id=2481&product_id=5087
Omni-Blend Special	Spot cleaning	81%	http://www.american-niagara.com/assets/images/Technical%20Data%20Sheets/TECH-OMNI-BLEND-SPECIAL-03-11.pdf
Omni-Blend #2	Spot cleaning	92%	http://www.american-niagara.com/assets/images/SDS/SDS-OMNI%20BLEND%202%202015.pdf

Other products

The following table lists other products containing TCE that EPA has identified.

Table 3. List of Products

Trade name	Use of the Product	% by weight of chemical	Link to references, SDS or industry information
Tacky	Aerosol belt dressing	20-40%	http://procheminc.com/proddocs/TACKY%201284%20SDS_2.pdf
Brake Parts Cleaner	Aerosol degreasing	45-55%	http://www.mrsandmaninc.com/msds/ZepBrakeCleaner.pdf
Knock It Off	Aerosol safety solvent and non-flammable brake parts cleaner	0 0-20%	http://procheminc.com/proddocs/KNOCK%20IT%20OFF%201622%20SDS.pdf http://procheminc.com/proddocs/KNOCK%20IT%20OFF_3.pdf
Truex	Aerosol open gear & cable lubricant	10-20%	http://procheminc.com/proddocs/TRUEX%201761%20SDS_1.pdf
Pro Tools MP Penetrant Lubricant	Multipurpose penetrant, lubricant, and demoisurant	5-10%	http://procheminc.com/proddocs/PRO%20TOOLS%20MP%20PENETRANT%20LUBRICANT%201496%20SDS_1.pdf
Top Solv	Solvent/cleaner/degreaser	90-100%	https://associatedfuelsystems.com/wp-content/uploads/2014/04/Top-Solv-SDS.pdf
Safety Solvent Aerosol	Non-flammable solvent degreaser	90-100%	http://sharecorp.com/sites/default/files/820101_051915_Share_Corporation_Safety_Solvent_SDS.pdf
Nfp Safety Solvent	Solvent/cleaner/degreaser	60-100%	http://aervoe.com/msds/Nfp%20Safety%20Solvent%208060%20-%20US.pdf
Tool Cool II	Cutting fluid/aerosol	98%	http://tibiland.com/websites/cic/images/MSDS%20pdf/sds74185ToolCool2CuttingFluid.pdf
NU-Blast	Coil cleaner/degreaser	95-98%	http://www.nucalgon.com/assets/SDS/English/4290-75_SDS_ENG.pdf
Gun Wash	Solvent/degreaser	97%	http://www.airduster.com/MSDS/GW-007-027-MSDS.htm
X-Out II	Spot cleaning	20-30%	https://sds.zepinc.com/ehswww/zep/result/direct_link.jsp?P_LANGU=E&P_SYS=2&P_SSN=11337&C001=MSDS&C002=US&C003=E&C013=019501&C123=SDS*
Film Cleaner 90	Film cleaner/aerosol		http://www.gwjcompany.com/index.php?main_page=product_info&products_id=1743
Liquid Pre-Buff Cleaner	Tire cleaner / tire surface preparation	85-100%	http://www.rematiptop.com/technical/trm/msds/RTT-TRM-032-Rev-6-Pre-Buff-Cleaner-071515.pdf
Special Cement BL	Adhesive / tire repair cement	80-95%	http://www.rematiptop.com/technical/trm/msds/RTT-TRM-016-Rev-6-Special-Cement,-non-flammable-071515.pdf
OTR Special BL Cement	Adhesive /tire repair cement	80-95%	http://www.rematiptop.com/technical/trm/msds/RTT-TRM-017-Rev-6-OTR-Special-Cement-072815.pdf
Thermopress MTR Solution	Adhesive	75-90%	http://www.rematiptop.com/technical/trm/msds/RTT-TRM-026-Rev-6-Thermopress-MTR-Solution-072815.pdf
Rim & Bead Sealer	Tire rim sealer / adhesive	75-90%	http://www.rematiptop.com/technical/trm/msds/RTT-TRM-009-Rev-6-Rim-&-Bead-Sealer-071515.pdf
Innerliner Repair Sealant	Adhesive (non-flammable)	70-85%	http://www.rematiptop.com/technical/trm/msds/RTT-TRM-013-Rev-6-Innerliner-Repair-Sealant-071515.pdf
T-2 Compound Repair System	Rubber filler	30-50%	http://www.rematiptop.com/technical/trm/msds/RTT-TRM-099-Rev-5-T2-A&B-Compound-110614.pdf

Past and Potential Uses

The following table lists products that used to contain TCE but have been reformulated to no longer contain TCE.

Table 4. List of Products

Trade name	Use of the Product	% by weight of chemical	Link to references, SDS or industry information
Heavy Duty Degreaser		0	http://docs.crcindustries.com/msds/3095.pdf
Lubrisil	Lubricant	0	https://sds.zepinc.com/ehswww/zep/result/direct_link.jsp?P_L ANGU=E&P_SYS=2&P_SSN=11337&C001=MSDS&C002=US&C003=E&C013=325801&C123=SDS*
Par		0	https://sds.zepinc.com/ehswww/zep/result/direct_link.jsp?P_L ANGU=E&P_SYS=2&P_SSN=11337&C001=MSDS&C002=US&C003=E&C013=010701&C123=SDS*
LU 201	Open gear & wire rope lubricant aerosol	0	http://www.paintdocs.com/docs/webPDF.jsp?SITEID=SO&doctype=SDS&prodno=S00201000&lang=2
Coil Cleaner		0	http://docs.crcindustries.com/msds/3195.pdf
206	Specialty film cleaner	0	http://www.spraywayinc.com/sites/all/themes/theme687/msds/sw206.pdf
Film Cleaner	Film cleaner	0	https://www.emsdiasum.com/microscopy/technical/msds/74317.pdf
201	Plastic spray clear with UV inhibitors	0	http://www.spraywayinc.com/sites/all/themes/theme687/msds/sw201.pdf

4. Distribution (Includes Retailers)

Information on the distribution of TCE is limited. Based on information reported to TRI for 2015, 4 facilities manufacture TCE for sale or distribution. Based on information reported to CDR for 2016, 5 facilities manufacture TCE for wholesale and retail trade.

5. Use

TCE has historically had a wide range of uses drawn from various markets, including intermediate chemicals (for refrigerant and polyvinyl chloride manufacture), industrial and commercial solvents, pharmaceuticals, insecticides, fumigant, textiles (processing and flame retardants), adhesives, and paints (as diluent). As of 2011, the majority of United States consumption of TCE is attributable to two specific uses. An estimated 84 percent of TCE is used as an intermediate in manufacturing hydrofluorocarbon (HFC-134a), and as an alternative refrigerant to CFC-12, which was

banned under the Montreal Protocol in 1996. An estimated 15 percent of TCE is used as a degreasing solvent. The remaining of manufacture volume is attributed to other uses⁵.

Industrial and Commercial Uses

TCE is used as a solvent because it is effective in dissolving fats, grease, waxes, and a large variety of natural and synthetic substances. It is non-corrosive, nonflammable, and easy to recycle.

These uses include:

- Vapor degreasing (already assessed by EPA)
- Aerosol degreaser (already assessed by EPA)
- Spot cleaner in dry cleaning (already assessed by EPA)
- Spray-on protective coating (already assessed by EPA)
- Intermediate in refrigerant manufacture (HFC-134a)
- Cold cleaning – wipes, batch cleaning
- Carpet cleaner/spot cleaner
- Cleaners and solvent degreasers
- Hoof polishes
- Pepper spray
- Mirror edge sealants
- Sealants
- Carpet cleaner/spot cleaner
- Adhesive
- Toner aid
- Textile scouring
- Penetrating lubricant
- Tap and die fluid
- Mold release
- Lace wig and hair extension glues
- Wool, cotton scouring

Consumer Uses

Products containing TCE have commercial and consumer uses. Consumer uses of TCE are similar to commercial use but occurs in consumer settings. The products used in consumer settings are typically the same as those used in commercial settings.

⁵ In December 2016 and January 2017, EPA proposed prohibitions on the use of TCE in commercial and consumer aerosol degreasing, as a spot cleaner in dry cleaning, and in vapor degreasing (81 FR 91592, December 16, 2016 and 82 FR 7432, January 19, 2017).

6. Disposal of Waste and Recycling/Recovery

Some facilities have reported to TRI that they reclaim TCE on-site and then reuse it. This on-site recycling process occurs several times until the solvent can no longer be used.

According to TRI, in 2015, 75,736,748 lbs. of TCE were recycled onsite, while 353,673 lbs. were recycled at facilities offsite, equaling a total of 76,090,421 lbs. recycled.

Land disposal of halogenated organic solvents, such as TCE, is restricted (53 FR 25760). Proper authorization must be obtained from federal, state, and local authorities for land disposal of TCE or TCE-containing materials.

According to TRI, in 2015, 91,183,302 lbs. of TCE were transferred offsite to landfills and/or other treatment/disposal facilities, and 1,928,867 lbs. were released to air, water, and land.

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