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

Phenol, isopropylated, phosphate (3:1)

Where $R^X = \text{H or CH(CH}_3\text{_2)}$ and all three rings have at least one $-\text{CH(CH}_3\text{_2)}$ group.
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 (if available), 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 December 9, 2017, will inform efforts to identify, under section 6(h)(1)(B) of the Toxic Substances Control Act (TSCA), whether exposure to phenol, isopropylated, phosphate (3:1) is likely, under the conditions of use, either to the environment, the general population, or to a potentially exposed or susceptible subpopulation identified by EPA. The information will also inform any risk management efforts following the exposure and use assessment under TSCA section 6(h)(1)(B).

The chemical structure for phenol, isopropylated, phosphate (3:1) shown on the cover constitutes a family of structures in which each of the three aryl groups have at least one isopropyl group. Examples of chemicals covered by this document that meet this general structure include:

- Tris(3-isopropylphenyl) phosphate
- Tri(isopropylphenyl) phosphate
- Tri(4-isopropylphenyl) phosphate

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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CONTACT

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Docket: EPA-HQ-OPPT-2016-0730
MANUFACTURING, PROCESSING, DISTRIBUTION, USE AND DISPOSAL

1. Manufacturing (Including Importing)

For the 2016 Chemical Data Reporting (CDR) period, 9 sites reported manufacturing (including importing) phenol, isopropylated, phosphate (3:1) in the United States\(^1,2\). The total amount (lbs) of phenol, isopropylated, phosphate (3:1) manufactured or imported annually in the United States was 12,362,683 in 2010; 14,932,040 in 2011; 3,191,017 in 2012; 2,968,861 in 2013; 5,632,272 in 2014; and 5,951,318 in 2015.

Phenol, isopropylated, phosphate (3:1) is not reported to the Toxics Release Inventory.

**Manufacturing Process**

Phenol, isopropylated, phosphate (3:1) is made by reaction of phenol with propylene. The resulting product is a mixture of mainly ortho- and para-isomers with varying degrees of alkylation. The product of this reaction is then mixed with phenol and reacted with phosphorus oxychloride to produce the phosphate ester. The relative amounts of phenol and isopropylated phenol can be varied to give a range of products with a corresponding range of properties.


Triaryl phosphates isopropylated are manufactured from phosphorous oxychloride and phenol. The manufacturing process is carried out in closed reactors and the hydrogen chloride gas generated during the reaction absorbed in water.

Source: [https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/f/?./temp/~M6hbNs:1](https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/f/?./temp/~M6hbNs:1)

The figure below provides a generic depiction of a process for manufacturing phenol, isopropylated, phosphate (3:1).


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\(^1\) 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 lbs) now applies to chemical substances subject to certain TSCA actions. [https://www.epa.gov/chemical-data-reporting/how-report-under-chemical-data-reporting](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](https://www.epa.gov/sites/production/files/2015-12/documents/cdr_fact_sheet_importers_final_dec2015_0.pdf)
Based on publicly available information reported to the 2016 CDR, processing of phenol, isopropylated, phosphate (3:1) includes:
Table 1. NAICS codes of industries processing phenol, isopropylated, phosphate (3:1).

<table>
<thead>
<tr>
<th>NAICS</th>
<th>NAICS Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>42, 44, 45, 48, 49</td>
<td>Wholesale and Retail Trade</td>
</tr>
<tr>
<td>336</td>
<td>Transportation Equipment Manufacturing</td>
</tr>
<tr>
<td>3261</td>
<td>Plastics Product Manufacturing</td>
</tr>
<tr>
<td>32551</td>
<td>Paint and Coating Manufacturing</td>
</tr>
<tr>
<td>32552</td>
<td>Adhesive Manufacturing</td>
</tr>
<tr>
<td>324191</td>
<td>Petroleum Lubricating Oil and Grease Manufacturing</td>
</tr>
<tr>
<td>325211</td>
<td>Plastic Material and Resin Manufacturing</td>
</tr>
<tr>
<td>325212</td>
<td>Synthetic Rubber Manufacturing</td>
</tr>
<tr>
<td>325992</td>
<td>Photographic Film Paper, Plate, and Chemical Manufacturing</td>
</tr>
</tbody>
</table>

As reported to the 2016 CDR, the types of processes using phenol, isopropylated, phosphate (3:1) include incorporation into articles, use as a chemical processing or manufacturing aid, and incorporation into a formulation, mixture or reaction product.

Phenol, isopropylated, phosphate (3:1) is widely used for both its flame retardant and lubricating properties.

A number of applications to which flame retardants such as phenol, isopropylated, phosphate (3:1) are added include the use in textiles, rubber, polyurethane foam, antistatic agent, cellulose, cotton, cutting oils, electronic equipment such as video display units cables, casting resins, glues, engineering thermoplastics, epoxy resins, and phenolic resins.


Because phenol, isopropylated, phosphate (3:1) is a liquid, processing into lubricant products and liquid flame retardants involves adding it into formulated mixtures. Data was not available to the EPA regarding the equipment commonly used for this process.

3. Products and Articles

EPA identified the following types of products [and articles] based on a search of available sources for products containing phenol, isopropylated, phosphate (3:1). This list is provided for informational purposes only. EPA and its employees do not endorse any of the products or companies. Due to lack of available data on which articles contain specific flame retardants, only products have been included in this section.
## Table 2. List of Products containing Phenol, isopropylated, phosphate (3:1)

<table>
<thead>
<tr>
<th>Trade name</th>
<th>Use of the product/article as described in the SDS or the company website</th>
<th>% by weight of chemical</th>
<th>Link to references, SDS or industry information</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYJET IV-A PLUS</td>
<td>Aviation hydraulic fluid</td>
<td>10 – 20%</td>
<td><a href="http://www.sfm.state.or.us/cr2k_subdb/MSDS/SYNTHETIC_AVIATION_HYDRAULIC_FLUID.PDF">http://www.sfm.state.or.us/cr2k_subdb/MSDS/SYNTHETIC_AVIATION_HYDRAULIC_FLUID.PDF</a></td>
</tr>
<tr>
<td>Reolube HYD 46</td>
<td>Fire-resistant hydraulic fluid</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>FR-46-PE</td>
<td>Fire-resistant phosphate ester hydraulic fluid</td>
<td>60 – 100%</td>
<td></td>
</tr>
<tr>
<td>Reofos 50</td>
<td>Flame Retardant</td>
<td>90 – 100%</td>
<td>Chemtura Reofos 50 SDS</td>
</tr>
<tr>
<td>Firemaster 550</td>
<td></td>
<td>50 – 70%</td>
<td>Chemtura Firemaster 550 SDS</td>
</tr>
<tr>
<td>Pyroclad X1</td>
<td></td>
<td>2.5 – 10%</td>
<td><a href="http://msds.caroline.com/servlet/FeedFile/11/prod/8690/98/Pyroclad+x1.pdf">msds.caroline.com/servlet/FeedFile/11/prod/8690/98/Pyroclad+x1.pdf</a></td>
</tr>
<tr>
<td>Durad 150</td>
<td>≤100%</td>
<td>Chemtura Durad 150 SDS</td>
<td></td>
</tr>
<tr>
<td>Reofos 35</td>
<td>62 – 68%</td>
<td>Chemtura Reofos 35 SDS</td>
<td></td>
</tr>
<tr>
<td>Durad 310M</td>
<td>Flame Retardant; Lubricant</td>
<td>90 – 100%</td>
<td>Chemtura Durad 310M SDS</td>
</tr>
<tr>
<td>Durad 220</td>
<td>90 – 100%</td>
<td>Chemtura Durad 220 SDS</td>
<td></td>
</tr>
<tr>
<td>Reofos 95</td>
<td>90 – 100%</td>
<td>Chemtura Reofos 95 SDS</td>
<td></td>
</tr>
<tr>
<td>Syn-O-Ad 9578</td>
<td>81 - 87%</td>
<td>Manufacturers MSDS</td>
<td></td>
</tr>
<tr>
<td>Reofos 65</td>
<td>90 – 100%</td>
<td>Chemtura Reofos 65 SDS</td>
<td></td>
</tr>
<tr>
<td>Phosflex 31L</td>
<td>64 – 72%</td>
<td>Manufacturers MSDS</td>
<td></td>
</tr>
<tr>
<td>Trade name</td>
<td>Use of the product/article as described in the SDS or the company website</td>
<td>% by weight of chemical</td>
<td>Link to references, SDS or industry information</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>PANCRETE PART B</td>
<td>HVAC metal pan resurfacer and related coating.</td>
<td>5 – 15%</td>
<td><a href="http://www.novatech-usa.com/core/media/media.nl/id.4469/c.ACCT119126/f?h=f85a6c5d13397ee2436">http://www.novatech-usa.com/core/media/media.nl/id.4469/c.ACCT119126/f?h=f85a6c5d13397ee2436</a></td>
</tr>
<tr>
<td>Boss 816</td>
<td>Intumescent Firestop Sealant</td>
<td>1 – 10%</td>
<td><a href="http://accumetriclrlc.org/uplimg/boss/MSDS/816.pdf">http://accumetriclrlc.org/uplimg/boss/MSDS/816.pdf</a></td>
</tr>
<tr>
<td>Serpiflex Shield</td>
<td>Lead/Asbestos Abatement</td>
<td>1 – 10%</td>
<td><a href="http://www.constructionmidwest.com/msds/Serpiflex.pdf">http://www.constructionmidwest.com/msds/Serpiflex.pdf</a></td>
</tr>
<tr>
<td>Castrol AN157, 9cSt. Helicopter Gear Oil</td>
<td>Lubricating oils</td>
<td>1 – 5%</td>
<td><a href="http://msdsbps.castrol.com/ussds/amesdsf.nsf/0/10F0DF30F427D71A862578700067ACE8/$file/233663Castrol%20AN157%209cSt.%20Helicopter%20Gear%20Oil.pdf">http://msdsbps.castrol.com/ussds/amesdsf.nsf/0/10F0DF30F427D71A862578700067ACE8/$file/233663Castrol%20AN157%209cSt.%20Helicopter%20Gear%20Oil.pdf</a></td>
</tr>
<tr>
<td>Shell Morlina S2 BL 10</td>
<td>Lubricating oils</td>
<td>0.1 – 1%</td>
<td><a href="http://prodepc.blob.core.windows.net/epcblobs/GSAP_msdss_00422402.PDF">http://prodepc.blob.core.windows.net/epcblobs/GSAP_msdss_00422402.PDF</a></td>
</tr>
<tr>
<td>EXCELENE 316</td>
<td>Trade Secret</td>
<td>1 – 2.5%</td>
<td>[<a href="http://www.flywheeldistribution.com/content/EXCELENE-316-">http://www.flywheeldistribution.com/content/EXCELENE-316-</a> SDS.PDF](<a href="http://www.flywheeldistribution.com/content/EXCELENE-316-">http://www.flywheeldistribution.com/content/EXCELENE-316-</a> SDS.PDF)</td>
</tr>
<tr>
<td>3M air tool lubricant</td>
<td>Paint</td>
<td>1 – 10%</td>
<td><a href="http://site.skygeek.com/MSDS/3m-051141-20451-air-tool-lubricant-4-oz.pdf">http://site.skygeek.com/MSDS/3m-051141-20451-air-tool-lubricant-4-oz.pdf</a></td>
</tr>
<tr>
<td>NYCOLUBE 127</td>
<td>Paint</td>
<td>0 – 2.5%</td>
<td><a href="http://objects.eanixter.com/PD365857.PDF">http://objects.eanixter.com/PD365857.PDF</a></td>
</tr>
<tr>
<td>Interspeed 5640</td>
<td>Paint</td>
<td>1 – 10%</td>
<td><a href="http://www.kellysolutions.com/erenewals/documentsubmit/KellyData%5COK%5Cpesticide%5C5MS5%5C2693%5C2693-220%5C2693-220_Interspeed_5640_Red_BZA6465_5_5_13_2009_12_16_47_PM.pdf">http://www.kellysolutions.com/erenewals/documentsubmit/KellyData%5COK%5Cpesticide%5C5MS5%5C2693%5C2693-220%5C2693-220_Interspeed_5640_Red_BZA6465_5_5_13_2009_12_16_47_PM.pdf</a></td>
</tr>
<tr>
<td>Trade name</td>
<td>Use of the product/article as described in the SDS or the company website</td>
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<td>Link to references, SDS or industry information</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Incoat (all colors)</td>
<td></td>
<td>1 – 5%</td>
<td><a href="http://www.sealproweb.com/msds/polyval/polyvalmsds.pdf">http://www.sealproweb.com/msds/polyval/polyvalmsds.pdf</a></td>
</tr>
<tr>
<td>749 VaporBlok Coating</td>
<td>Water-based Vapor Barrier Coating</td>
<td>1 – 2%</td>
<td><a href="http://www.vimasco.com/pdf/749_VaporBlok_Water_Based_Elastomeric_SDs.pdf">http://www.vimasco.com/pdf/749_VaporBlok_Water_Based_Elastomeric_SDs.pdf</a></td>
</tr>
</tbody>
</table>

4. **Distribution (Includes Retailers)**

Based on data reported to the 2016 CDR, eight sites manufacture or import phenol, isopropylated, phosphate (3:1) for wholesale and retail trade in 2015. Phenol, isopropylated, phosphate (3:1) is available for purchase online from chemical suppliers.

5. **Use**

In addition to the applications and products described above, flame retardants—some of which contain phenol, isopropylated, phosphate (3:1)—are used predominantly in four major areas: electronics and electrical devices, building and construction materials, furnishings, and transportation. They are also used in adhesives, lubricants, oils, paints, epoxy resins, and plasticizers.

Commonly treated electronics are TVs, computers/computer accessories, phones, washers and dryers, circuit boards, electrical cables, and other various household appliances. For building and construction materials, treated products include insulation materials, paints and coatings, wood products, roofing components, composite panels, and fixtures. Home/Office furnishing such as foam upholstery, curtains, carpets, and any fabrics that house them may also contain phenol, isopropylated, phosphate (3:1). Fabrics, foams, carpets, electrical equipment, and bumpers in airplanes, trains, and automobiles also contain flame retardants.

6. **Disposal of Waste and Recycling/Recovery**

Data was not available to the EPA regarding the disposal or recycling of phenol, isopropylated, phosphate (3:1).
USEFUL TYPES OF INFORMATION

This document presents a summary of information currently available to EPA on phenol, isopropylated, phosphate (3:1). EPA is interested in obtaining information to more fully characterize the manufacturing, processing, distribution, disposal, and use of chemicals that fall within the structure described earlier, to inform the development of the exposure and use of these chemicals, and to inform any subsequent risk management efforts. For example, 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
- articles in which 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  
- 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
• U.S. National Library of Medicine Hazardous Substance Data Bank (HSBD)
• U.S. Department of Health & Human Services Household Products Database
• OSHA Chemical Hazards and Toxic Substances
• 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
• CPSC FHSA
• 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
• 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/WhatsAPriorityProduct.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)

- Massachusetts Complete list of TURA chemicals

- 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

- New Jersey Right to Know Hazardous Substances
  http://web.doh.state.nj.us/rtkhsfs/rtkhsl.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

- Pennsylvanina 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*

• 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

• Canada *Chemicals Portal*
  http://chemicalsubstanceschimiques.gc.ca/index-eng.php

• EU *ECHA website*
  https://echa.europa.eu/

• Australia *NICNAS Chemical Information*

• Japan *Chemical Risk Information Platform (CHIRP)*

• 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

• WHO IPCS (UN)
  http://www.who.int/ipcs/en/

• Other – worker protection information

• 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