

## Chemicals and Related Skin Hazards

CHEMICAL	SKIN HAZARD
Hydrofluoric acid	Extremely corrosive to skin and eyes. Causes severe burns which may not be painful or visible for several hours. (Merck Index = ME 11 <sup>th</sup> ed.)*
Sulfuric acid	Corrosive to all body tissues. Contact with eyes may result in total loss of vision; skin contact may produce severe necrosis. Frequent skin contact with dilute solution has caused dermatitis. (ME 11 <sup>th</sup> ed.)
Phosphoric acid	Concentrated solutions are irritating to skin and mucous membranes. (ME 11 <sup>th</sup> ed.)
Muriatic [hydrochloric] acid	<i>External</i> - concentrated solutions cause severe burns; permanent visual damage may occur. Dermatitis and photosensitization may result from industrial contact. (ME 11 <sup>th</sup> ed.)
Ethoxylated alkyl amine	Ethoxylated Amines are mild alkaline materials and can cause burns, rash, or irritation to skin or eyes. <a href="http://www.alchemchemical.com/products.html?file=files/product_documents/MSDS/Tomah/E-T-5%20Tech%20Data.pdf">[http://www.alchemchemical.com/products.html?file=files/product_documents/MSDS/Tomah/E-T-5%20Tech%20Data.pdf]</a>
Oxalic acid	Caustic and corrosive to skin and mucous membranes. (ME 11 <sup>th</sup> ed.)
Glycolic acid	Mild irritant to skin and mucous membranes. (ME 11 <sup>th</sup> ed.)
Acetic acid	Caustic irritating can cause burns...attacks the skin easily and can cause dermatitis and ulcers. (Sax 4 <sup>th</sup> ed.)
Potassium hydroxide	Extremely corrosive. Very caustic to tissue. Do not handle with bare hands. (ME 11 <sup>th</sup> ed.)
2-Hydroxymethylfuran (also called <i>Furfuryl Alcohol</i> )	Poisonous. Toxic by inhalation and skin absorption. (Hawley's 11 ed.)
Xylene	May be a narcotic in high concentrations. ( <i>No skin toxicities reported.</i> ) (ME 11 <sup>th</sup> ed.) Toxic Hazard Rating for Skin Absorption is Moderate: May involve both irreversible and reversible changes not severe enough to cause death or permanent injury. (Sax 4 <sup>th</sup> ed.)
Dibutyl phthalate	As phthalic acid- Acute local irritant. (Sax)
Acetone	Prolonger or repeated topical use may cause erythema, dryness. (ME 11 <sup>th</sup> ed.)
Sulfamic acid	Moderately irritating to skin and mucous membranes. (ME 11 <sup>th</sup> ed.)
N-Methylpyrrolidone	Repeated and prolonged skin contact produces a mild, transient irritation. ( <a href="http://www.chemicalbook.com/ProductChemicalPropertiesCB2402488_EN.htm">http://www.chemicalbook.com/ProductChemicalPropertiesCB2402488_EN.htm</a> )

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2-Butoxy ethanol	Readily absorbed through the skin. May cause anemia, macrocytosis, appearance of young granulocytes in blood; also central nervous system symptoms. (ME 11 <sup>th</sup> ed.)
Toluene	Toxic by ingestion, inhalation, and skin absorption. (Hawley's 11 <sup>th</sup> ed.) Liquid irritates eyes and causes drying of skin. ( <a href="http://www.chemicalbook.com/ProductChemicalPropertiesCB4233905_EN.htm">http://www.chemicalbook.com/ProductChemicalPropertiesCB4233905_EN.htm</a> )
Portland Cement [hexavalent chromium compounds]	Irritant effects on the skin and respiratory passages lead to ulceration. (ME 11 <sup>th</sup> ed.)
Lime [calcium oxide]	A strong caustic. May cause severe irritation of skin, mucous membranes. (ME 11 <sup>th</sup> ed.)
Hydrated lime [calcium hydroxide]	Skin irritant; avoid inhalation. (Hawley's 11 <sup>th</sup> ed.) It can cause dermatitis. (Sax 4 <sup>th</sup> ed.)
Tris-2,4,6- (dimethylaminomethyl) phenol	Irritant. Dimethylamine component will burn skin and eyes. ( <a href="http://www.chemicalbook.com/ProductChemicalPropertiesCB8852986_EN.htm">http://www.chemicalbook.com/ProductChemicalPropertiesCB8852986_EN.htm</a> )
Methyl ethyl ketone (MEK)	Produces local irritation and narcosis. (Sax 4 <sup>th</sup> ed.) Contact with substance may cause severe burns to skin and eyes. ( <a href="http://www.chemicalbook.com/ProductChemicalPropertiesCB4854386_EN.htm">http://www.chemicalbook.com/ProductChemicalPropertiesCB4854386_EN.htm</a> )
Propane,	Can act as a refrigerant when expelled from container and freeze skin. (ME 11 <sup>th</sup> ed.0
2,2-bis[p-(2,3-epoxypropoxy)phenyl]-polymers	Prolonged or repeated contact with skin causes irritation and dermatitis. ( <a href="http://www.chemicalbook.com/ProductChemicalPropertiesCB3749115_EN.htm">http://www.chemicalbook.com/ProductChemicalPropertiesCB3749115_EN.htm</a> )
Bisphenol F-(epichlorhydrin);	Epichlorohydrin effect on the skin, eyes, and respiratory tract may be delayed for several hours. Epichlorohydrin causes dermatitis. [ITII. Toxic and Hazardous Industrial Chemicals Safety Manual. Tokyo, Japan: The International Technical Information Institute, 1988., p. 209]
Epoxy resin	Contact with the skin causes irritation and allergic sensitization. [Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. V11: 242 (1980)]
Alkyl (C12-14) glycidyl ether; Alkyl glycidyl ether	Diglycidyl ether is a severe irritant to skin, eyes, and respiratory tract. It is a strong skin sensitizer. [Bingham, E.; Cohrssen, B.; Powell, C.H.; Patty's Toxicology Volumes 1-9 5th ed. John Wiley & Sons. New York, N.Y. (2001)., p. 6:1057]

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Calcium sulfate; Calcium sulphate hemihydrate	No skin warnings found. GYPSUM DUST HAS AN IRRITANT ACTION ON MUCOUS MEMBRANES OF THE RESPIRATORY TRACT & EYES, & THERE HAVE BEEN REPORTS OF CONJUNCTIVITIS, CHRONIC RHINITIS, LARYNGITIS, PHARYNGITIS, IMPAIRED SENSE OF SMELL & TASTE, BLEEDING FROM THE NOSE, & REACTIONS OF TRACHEAL & BRONCHIAL MEMBRANES IN EXPOSED WORKERS. /GYPSUM/ [International Labour Office. Encyclopedia of Occupational Health and Safety. Volumes I and II. New York: McGraw-Hill Book Co., 1971., p. 630]
Ethylene glycol	A skin, eye and mucous membrane irritant. [Lewis, R.J. Sr. (ed) Sax's Dangerous Properties of Industrial Materials. 11th Edition. Wiley-Interscience, Wiley & Sons, Inc. Hoboken, NJ. 2004., p. 1664]
Stoddard solvent	Stoddard solvent was determined to be a slight dermal irritant. ( <a href="http://toxnet.nlm.nih.gov">http://toxnet.nlm.nih.gov</a> )
Polymer solids	
4-Nonylphenol	Irritation of the eyes, skin, and respiratory tract. ( <a href="http://toxnet.nlm.nih.gov">http://toxnet.nlm.nih.gov</a> )
Dolomitic hydrated lime (as calcium hydroxide)	Skin irritant. [Hawley, G.G. The Condensed Chemical Dictionary. 10th ed. New York: Van Nostrand Reinhold Co., 1981., p. 182]
Titanium dioxide	A human skin irritant. [Lewis, R.J. Sax's Dangerous Properties of Industrial Materials. 9th ed. Volumes 1-3. New York, NY: Van Nostrand Reinhold, 1996., p. 3183]
Polyvinyl acetate	Materials spilled on the skin may not represent a toxic or irritation hazard in small quantities but may produce adverse effects if applied in large quantities or if used over a significant period of time. Whenever possible, foreign materials should be removed from the skin with simple washing. Should skin irritation or erythema occur, a patient may wish to seek medical assistance. [ <a href="http://toxnet.nlm.nih.gov">http://toxnet.nlm.nih.gov</a> ]
2-hydroxymethyl amino ethanol	2-[hydroxymethyl]amino]ethanol generally is of moderate to low acute toxicity but is a severe eye irritant. It has been placed in Toxicity Category I, indicating the greatest degree of acute toxicity, for eye effects. It has been placed in Toxicity Category III for oral, inhalation and dermal toxicity, and in Toxicity Category IV, indicating the lowest degree of acute toxicity, for skin effects. A dermal sensitization study must be submitted as confirmatory data. [ <a href="http://www.epa.gov/oppsrrd1/REDS/factsheets/3070fact.pdf">http://www.epa.gov/oppsrrd1/REDS/factsheets/3070fact.pdf</a> ]

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Hydroxypropyl methylcellulose	No reported skin effects found.
Poly(vinyl) alcohol	No reported skin effects found.
Organo silane ester	Irritating to the skin, eyes, and respiratory system. [Fire Protection Guide to Hazardous Materials. 13 ed. Quincy, MA: National Fire Protection Association, 2002., p. 49-131
Toluene-2,4-diisocyanate	A severe skin and eye irritant. Capable of producing severe dermatitis and bronchial spasm. [Lewis, R.J. Sr. (ed) Sax's Dangerous Properties of Industrial Materials. 11th Edition. Wiley-Interscience, Wiley & Sons, Inc. Hoboken, NJ. 2004., p. 3484
Bis(2-propylheptyl) phthalate	Weak irritant to mammalian skin when admin topically. [WHO; Environ Health Criteria 131: Diethylhexyl Phthalate p.62 (1992)]
Hydrotreated heavy naphthenic distillate	Skin absorption of 0.24 M lead...naphthenate soln has...been observed in rats. [IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: <a href="http://monographs.iarc.fr/index.php">http://monographs.iarc.fr/index.php</a> p. V23 371 (1980)]
Ethyltriacetoxo silane	Silane/ irritates the eyes, the skin and the respiratory tract. Rapid evaporation of the liquid may cause frostbite. [IPCS, CEC; International Chemical Safety Card on Silane. (April 1997). Available from, as of October 16, 2006: <a href="http://www.inchem.org/documents/icsc/icsc/eics0564.htm">http://www.inchem.org/documents/icsc/icsc/eics0564.htm</a>
Aromatic process oil	No information found
Polyurethane polymer	INFO found for URETHANE aka ethyl carbamate): Occupational exposure to ethyl carbamate may occur through inhalation of dust particles and dermal contact with this compound at workplaces where ethyl carbamate is produced or used(SRC). The general population may be exposed to ethyl carbamate via ingestion of fermented foods and alcoholic beverages(SRC). [(1) NIOSH; National Occupational Exposure Survey (NOES) (1983)]
Butyl benzyl phthalate	Irritates the eyes, the skin, and the respiratory tract. [Sittig, M. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2002. 4th ed.Vol 1 A-H Norwich, NY: Noyes Publications, 2002., p. 406]
Polyvinyl chloride	No reported skin effects found.

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p-Chlorobenzotrifluoride	Causes local irritation to skin, eyes, and mucous membranes. [Pohanish, R.P. (ed). Sittig's Handbook of Toxic and Hazardous Chemical Carcinogens 5th Edition Volume 1: A-H, Volume 2: I-Z. William Andrew, Norwich, NY 2008, p. 603]
Anthracene	Skin damage and symptoms of burning, ...itching. [International Labour Office. Encyclopedia of Occupational Health and Safety. Vols. I&II. Geneva, Switzerland: International Labour Office, 1983., p. 162]
Isophorone diisocyanate	Irritation /to/ eyes, skin, respiratory system. [NIOSH. NIOSH Pocket Guide to Chemical Hazards. Department of Health & Human Services, Centers for Disease Control & Prevention. National Institute for Occupational Safety & Health. DHHS (NIOSH) Publication No. 2010-168 (2010).]
Ethylbenzene	CHARACTERIZED ... AS MOST SEVERE IRRITANT OF THE BENZENE SERIES. [American Conference of Governmental Industrial Hygienists. Documentation of the Threshold Limit Values and Biological Exposure Indices. 5th ed. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 1986., p. 244]
Proprietary benzoate esters	AS BENZOIC ACID: Dust irritating to nose and throat if inhaled; solid irritating to skin and eyes. At elevated temp, fumes may cause irritation of eyes, resp system, and skin. [U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5.]
Mineral spirits	See Stoddard solvents.
Colored pigment	Not enough information/too general of a name.  BY EXAMPLE, PIGMENT BLUE 15: May cause eye irritation. May cause skin irritation. May cause respiratory tract irritation. [Sigma-Aldrich Corp; Safety Data Sheet for Copper(II) phthalocyanine (Product Number: 546682) Version 3.0 (December 29, 2008). Available from, as of June 15, 2010
Methyltriacetoxysilane	Methyltriacetoxysilane is severely irritating and corrosive to the skin, and corrosive to the eyes of animals and is likely to be a respiratory irritant based on production of acetic acid following hydrolysis. [ <a href="http://www.inchem.org/documents/sids/sids/4253343.pdf">http://www.inchem.org/documents/sids/sids/4253343.pdf</a> ]

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Calcium sulfoaluminate cement	Skin Hazards: May irritate skin causing drying, redness, rash, and blistering. When mixed with water, a high alkali material is produced which can cause severe skin burns. Individuals may develop allergic dermatitis. [ <a href="http://www.ctscement.com/DOTCement_MSDS.asp">http://www.ctscement.com/DOTCement_MSDS.asp</a> ]
Calcium Sulfate, anhydrous	Skin Contact: Causes irritation, redness, pain. [ <a href="http://www.reagents.com/pdf/MSDS/1-16805.pdf">http://www.reagents.com/pdf/MSDS/1-16805.pdf</a> ]
Ammonia	Mild to moderate: Irritation, swelling, and mild or stinging pain. Severe: Pain, inflammation, blistering (vesication), tissue death (necrosis), and deep penetrating burns, especially on moist skin areas. [ <a href="http://www.cdc.gov/niosh/ershdb/EmergencyResponseCard_29750013.html">http://www.cdc.gov/niosh/ershdb/EmergencyResponseCard_29750013.html</a> ]
Formaldehyde	Liquid is corrosive. Causes severe eye and skin burns. Vapor is irritating to eye, skin and respiratory system. [Fire Protection Guide to Hazardous Materials. 13 ed. Quincy, MA: National Fire Protection Association, 2002., p. 49-80]
Diocetyl phthalate	Eye contact causes irritation. repeated skin contact may cause dryness, cracking and rash. Breathing the vapor may irritate the nose, throat, and bronchial tubes. [Sittig, M. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2002. 4th ed.Vol 1 A-H Norwich, NY: Noyes Publications, 2002., p. 964]
ASEP	
Diisodecyl phthalate	Avoid contact with skin and wash work clothes frequently. [ <a href="http://megaloid.ca/MSDS/Diisodecyl%20Phthalate.pdf">http://megaloid.ca/MSDS/Diisodecyl%20Phthalate.pdf</a> ]
Silicone sealant	May cause eye, skin, nose, throat and respiratory tract irritation. Harmful if swallowed or absorbed through the skin. [ <a href="http://www.dap.com/product_details.aspx?BrandID=10&amp;SubcatID=3">http://www.dap.com/product_details.aspx?BrandID=10&amp;SubcatID=3</a> ]
Octamethylcyclotetrasiloxane	Occupational exposure to octamethylcyclotetrasiloxane may occur through inhalation and dermal contact with this compound at workplaces where octamethylcyclotetrasiloxane is produced or used (SRC). [ <a href="http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~zsvue4:1">http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~zsvue4:1</a> ]

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Petroleum distillates	See Stoddard solvents. Also, as gasoline: Vapor irritating to eyes, nose, and throat. Liquid irritating to skin and eyes. [U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5.]
Hexamethyldisilazane	Causes severe burns to eyes and irritation of the skin. [O'Neil, M.J. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. 13th Edition, Whitehouse Station, NJ: Merck and Co., Inc., 2001., p. 837]
Polydimethylsiloxane; Polydimethyl siloxane diol	Occupational exposure to decamethylcyclopentasiloxane may occur through inhalation and dermal contact with this compound at workplaces where decamethylcyclopentasiloxane is produced or used. The most likely pathway by which the general public is exposed to decamethylcyclopentasiloxane is by inhalation and dermal contact when using antiperspirants and cosmetics containing this compound. Monitoring data show this compound to be found in the air especially at incineration waste plants(1) and where new carpeting and furniture are found(2). [(1) Jay K, Stieglitz L; Chemosphere 30: 1249-1260 1995) (2) Schaeffer VH et al; J Air Waste Management Assoc 46: 813-20 (1996)]
Isopropyl alcohol	NO SKIN EFFECTS FOUND The vapors are mildly irritating to the eyes, nose, and throat. [Association of American Railroads; Bureau of Explosives. Emergency Handling of Hazardous Materials in Surface Transportation. Association of American Railroads, Pueblo, CO. 2005, p. 507]
Triethoxyoctylsilane	Causes skin irritation. May be harmful if absorbed through the skin. [ <a href="http://www.chemicalbook.com/ProductMSDSDetailCB7284241_EN.htm">http://www.chemicalbook.com/ProductMSDSDetailCB7284241_EN.htm</a> ]
Trimethyl endcap	See Polydimethylsiloxane.
Methyloximino silane	May cause moderate irritation. [ <a href="http://www.accumetricinc.com/uplimg/dynatex/msds/47182.pdf">http://www.accumetricinc.com/uplimg/dynatex/msds/47182.pdf</a> ]
Liquefied petroleum gas	LPG can cause cold burns to the skin and it can act as an asphyxiant at high concentrations. [ <a href="http://www.hsa.ie/eng/Topics/Liquid_Petroleum_Gas_LPG_/#dangers">http://www.hsa.ie/eng/Topics/Liquid_Petroleum_Gas_LPG_/#dangers</a> ]

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	Methyl acetate	Methyl acetate can irritate the skin and cause itching, redness, rash, drying and cracking. [http://nj.gov/health/eoh/rtkweb/documents/fs/1217.pdf]
	Petroleum naphtha	Irritation eyes, nose, throat; dizziness, drowsiness, headache, nausea; dry cracked skin; [http://www.cdc.gov/niosh/npg/npgd0492.html]
	Magnesium fluorosilicate (MgSiF <sub>6</sub> ), hexahydrate	May cause severe irritation of the skin and allergic reaction. [http://royalepigments-chem.com/awsm/pdf/msds/Magnesium_Silicofluoride_MSDS.pdf]

\* Merck Index = ME 11<sup>th</sup> ed.