

Section 1-Identification of Product

9710, 9712

WHMIS Classification

Health: 3 Fire: 2 Stability: 1

Contact Information

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Emergency Contact: In Europe, call 112. In USA, call 911

Section 2-Composition/Information

Hazardous Ingredients (Specific)	%	CAS #	LD ₅₀	LC ₅₀
Phenol	95	108-95-2	Oral Rat-317 mg/kg	IHL-316 mg/m3
Tris	~5	77-86-1	Oral Rat-5900 mg/kg	N.A.
EDTA	~5	6381-92-6	N.A.	N.A.

Section 3-Hazard Identification

Routes of Entry

Skin Contact	Corrosive. Rapidly absorbed through the skin with systemic poisoning effects to follow. Discoloration and severe burns may occur, but may be disguised by a loss in pain sensation.
Skin Absorption	Corrosive. Rapidly absorbed through the skin with systemic poisoning effects to follow. Discoloration and severe burns may occur, but may be disguised by a loss in pain sensation.
Eye Contact	Corrosive. Eye burns with redness, pain, blurred vision may occur. May cause severe damage and blindness.
Inhalation	Breathing vapor, dust or mist results in digestive disturbances (vomiting, difficulty in swallowing, diarrhea, loss of appetite). Will irritate, possibly burn respiratory tract. Other symptoms listed under ingestion may also occur.
Ingestion	Poison. Symptoms may include burning pain in mouth and throat, abdominal pain, nausea, vomiting, headache, dizziness, muscular weakness, central nervous system effects, increase in heart rate, irregular breathing, coma, and possibly death. Acute exposure is also associated with kidney and liver damage. Ingestion of 1 gram has been lethal to humans.

[Emergency Overview]

POISON! DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. RAPIDLY ABSORBED THROUGH SKIN. CORROSIVE. CAUSES SEVERE BURNS TO EVERY AREA OF CONTACT. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. COMBUSTIBLE.

WHMIS Symbols

N.A.

[Potential Health Effects]

Human poison by ingestion. An experimental poison by ingestion, subcutaneous, intravenous, parenteral, and intraperitoneal routes. Moderately toxic by skin contact. A severe eye and skin irritant. Questionable carcinogen with experimental carcinogenic and neoplastigenic data. Human mutation data reported. An experimental teratogen. Other experimental reproductive effects. Absorption of phenolic solutions through the skin may be very rapid, and can cause death within 30 minutes to several hours by exposure of as little as 64 square inches of skin. Lesser exposures can cause damage to the kidneys, liver, pancreas, and spleen, and edema of the lungs. Ingestion can cause corrosion of the lips, mouth, throat, esophagus, and stomach, and gangrene. Ingestion of 1.5 g has killed. Chronic exposures can cause death from liver and kidney damage. Dermatitis resulting from contact with phenol or phenol-containing products is fairly common in industry

Section 4-First Aid Measures

Skin Contact	Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Eye Contact	Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Inhalation	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not Breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Get medical aid.

Section 5-Fire Fighting Measures

Flammable	Flammable
Means of Extinction	Water, dry chemical, or appropriate foam
Flashpoint (°C) and Method	79C (174F) CC
Upper Flammable Limit (% by volume)	1.3
Lower Flammable Limit (% by volume)	8.6
Autoignition Temperature (°C)	Not tested
Explosion Data – Sensitivity to Impact	Not tested
Explosion Data – Sensitivity to Static Discharge	Not tested
Hazardous Combustion Products	Emits toxic fumes under fire conditions
NFPA	Health: Fire: Stability:

Section 6-Accidental Release Measures

Leak and Spill Procedures	Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. Do not flush to the sewer. Dry lime or soda ash may be used on spill for neutralization. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.
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Section 7-Handling and Storage

Handling Procedures and Equipment	All phenol workers should be properly trained on its hazards and the proper protective measures required. This training should also include emergency actions. All phenol operations should be enclosed to eliminate any potential exposure routes. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Storage Requirements	Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. All phenol workers should be properly trained on its hazards and the proper protective measures required. This training should also include emergency actions. All phenol operations should be enclosed to eliminate any potential exposure routes. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Section 8-Exposure Control/Personal Protection

Exposure Limits	
ACGIH TLV	Phenol- 5 ppm
OSHA PEL	Phenol - TWA 5 ppm (19 mg/m ³)[skin] Tris / EDTA – none listed
Other (specify)	Phenol - NIOSH REL: TWA 5 ppm (19 mg/m ³) 250 ppm IDLH

Engineering Controls (specific)

General	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Local Exhaust	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, <i>Industrial Ventilation, A Manual of Recommended Practices</i> , most recent edition, for details
Other	N.A.

Personal Protective Equipment (specific)

Gloves	Neoprene gloves
Respirator	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Eye	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Maintain eye wash fountain and quick-drench facilities in work area.
Footwear	Closed toe shoes
Clothing	Wear appropriate protective clothing to prevent skin exposure.
Other	N.A.

Section 9-Physical and Chemical Properties

Physical State	Liquid
Odor and Appearance	Strong odor sweet, tarry / Colorless
Odor Threshold (ppm)	Not tested
Specific Gravity	Not tested
Vapor Density (Air=1)	Not tested
Vapor Pressure (mmHg)	Not tested
Evaporation Rate	Not tested
Boiling Point (°C)	Not tested
Freezing Point (°C)	Not tested
pH	6.6
Coefficient of Water/Oil Distribution	Not tested
[Solubility in Water]	Soluble

Section 10-Stability and Reactivity

Chemical Stability	Stable
Incompatible with other substances	Oxidizers, aluminum chloride and nitrobenzene, calcium hypochlorite, butadiene, halogens, formaldehyde, mineral oxidizing acids, isocyanates, sodium nitrite and many other materials. Hot liquid phenol will attack aluminum, magnesium, lead, and zinc metals.
Reactivity	Not tested
Hazardous Decomposition Products	Toxic fumes of carbon monoxide, carbon dioxide

Section 11-Toxicological Information

Acute Effects	Harmful if swallowed, inhaled or absorbed through skin
Chronic Effects	Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin; target organs include central nervous system, kidneys, liver, pancreas, spleen
Irritancy of Product	Eyes, skin, respiratory
Skin Sensitization	Yes
Respiratory Sensitization	Yes

Carcinogenicity

IARC (1,2A, or 2B)	CAS# 108-95-2: IARC Group 3
ACGIH (A1, A2, or A3)	A4 - Not Classifiable as a Human Carcinogen A3 - Animal Carcinogen
Reproductive Toxicity	CAS# 108-95-2: Oral, rat: TDLo = 300 mg/kg (female 6-15 day(s) after conception) Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)
Teratogenicity	CAS# 108 -95-2: Oral, rat: TDLo = 1200 mg/kg (female 6-15 day(s) after conception) Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).; Oral, mouse: TDLo = 4 gm/kg (female 6-15 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system.
Embryotoxicity	Investigated
Mutagenicity	CAS# 108-95-2: Mutation Test Systems - not otherwise specified: Human, HeLa cell = 17 mg/L.; DNA Inhibition: Human, HeLa cell = 1 mmol/L.; Mutation Test Systems – not otherwise specified: Human, Lymphocyte = 5 umol/L.; Sister Chromatid Exchange: Human, Lymphocyte = 5 umol/L.
Name of Synergistic Products/Effects	Not listed

Section 12-Ecological Information

Aquatic Toxicity	This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.
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Section 13-Disposal Considerations

Waste Disposal Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

Section 14-Transport Information

Special Shipping Information

PIN	Phenol Solution
TDG	Packing Group: III
[DOT]	Hazard Class: 6.1 UN/NA: UN2821
[IMO]	Not regulated
[ICAO]	Not regulated

Section 15-Regulatory Information

[WHMIS Classification]	Not listed
[OSHA]	Listed
[SARA]	302 / 313 CAS# 108-95-2 Listed SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No Reactivity: No
[TSCA]	CAS# 108-95-2 Listed

Section 16-Other Information

This bulletin is for your guidance and is based upon information and tests believed to be reliable. Ambion makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.