

MSDS# 91625

Section 1 - Chemical Product and Company Identification

MSDS Name: Phenol/Chloroform/Isoamyl Alcohol, pH 6.7/8.0
Catalog Numbers: BP1752I-100, BP1752I-400
Synonyms: Phenol Chloroform Mixture II (25:24:1)
Company Identification: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
For information in the US, call: 201-796-7100
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

Risk Phrases:

CAS#: 67-66-3
Chemical Name: Chloroform
%: 45-50%
EINECS#: 200-663-8
Hazard Symbols:

Risk Phrases: 24/25 34

CAS#: 108-95-2
Chemical Name: Phenol
%: 45-55%
EINECS#: 203-632-7
Hazard Symbols: T

Risk Phrases:

CAS#: 123-51-3
Chemical Name: Isoamyl alcohol
%: 1.5-2.5%
EINECS#: 204-633-5
Hazard Symbols:

Text for R-phrases: see Section 16

Hazard Symbols:



Risk Phrases:

T C



23/24/25 34 40 48/20/21/22 68

EMERGENCY OVERVIEW

Danger! Corrosive. May cause central nervous system depression. May cause fetal effects based upon animal studies. May cause methemoglobinemia. May cause liver and kidney damage. Potential cancer hazard. May be harmful if inhaled. Harmful if swallowed or absorbed through the skin. Causes irritation and possible burns by all routes of exposure. Keep refrigerated. (Store below 4°C/39°F.) Target Organs: Blood, kidneys, central nervous system, liver, respiratory system, eyes, skin.

Potential Health Effects

- Eye: Causes eye irritation and possible burns. May cause chemical conjunctivitis and corneal damage.
- Skin: Harmful if absorbed through the skin.
- Ingestion: Harmful if swallowed. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Overexposure may cause methemoglobinemia. May cause systemic effects. Causes digestive tract irritation with possible burns.
- Inhalation: May be fatal if exposed to high concentrations. May cause severe respiratory tract irritation and possible burns. Aspiration may lead to pulmonary edema. May also cause pallor, loss of appetite, nausea, vomiting, diarrhea, weakness, darkened urine, headache, sweating, convulsions, cyanosis (bluish skin due to deficient oxygenation of the blood), unconsciousness, fatigue, pulmonary edema & coma. May cause systemic effects. Inhalation at high concentrations may cause CNS depression and asphyxiation.
- Chronic: May cause liver and kidney damage. May cause fetal effects. Effects may be delayed. Repeated skin contact may cause dermatitis with dark pigmentation of the skin. Chronic exposure has been associated with an increased incidence of kidney, liver, rectal, bladder, colon, brain, and lymph node cancer.

Section 4 - First Aid Measures

- Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
- Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. SPEEDY ACTION IS CRITICAL! Destroy contaminated shoes.
- Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
- Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
- Notes to Physician: Persons with liver or kidney disease should not be exposed to phenol for any length of time.

Section 5 - Fire Fighting Measures

- General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.
- Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Do NOT get water inside containers. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.
- Autoignition Temperature: Not applicable.
- Flash Point: Not applicable.
- Explosion Limits: Lower: Not available
- Explosion Limits: Upper: Not available
- NFPA Rating: health: 4; flammability: 1; instability: 0;

Section 6 - Accidental Release Measures

- General Information: Use proper personal protective equipment as indicated in Section 8.
- Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up

Spills/Leaks: spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes.

Keep container closed when not in use. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep refrigerated. (Store below 4°C/39°F.)

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Chloroform	10 ppm	500 ppm IDLH	50 ppm Ceiling; 240 mg/m3 Ceiling
Phenol	5 ppm; Skin - potential significant contribution to overall exposure by the cutaneous route	5 ppm TWA; 19 mg/m3 TWA 250 ppm IDLH	5 ppm TWA; 19 mg/m3 TWA
Isoamyl alcohol	100 ppm; 125 ppm STEL	100 ppm TWA; 360 mg/m3 TWA 500 ppm IDLH	100 ppm TWA; 360 mg/m3 TWA

OSHA Vacated PELs: Chloroform: 2 ppm TWA; 9.78 mg/m3 TWA Phenol: 5 ppm TWA; 19 mg/m3 TWA Isoamyl alcohol: 100 ppm TWA; 360 mg/m3 TWA

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Personal Protective Equipment

Eyes: 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.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: 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 respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: clear, colorless

Odor: none reported

pH: 6.7-8.0

Vapor Pressure: Not available

Vapor Density: 5.59

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: 96 - 97 deg C @ 8.30 mmHg

Freezing/Melting Point: 11 - 12 deg C

Decomposition Temperature: Not available

Solubility in water: Not available

Specific Gravity/Density: 1.1800g/cm³

Molecular Formula: C₆H₁₀O₅

Molecular Weight: 162.14

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Excess heat.

Incompatibilities with Other Materials: Metals, strong oxidizing agents, reducing agents, acids, acid chlorides, aluminum, fluorine, magnesium, isocyanates, potassium, acetaldehyde, lithium, sodium, nitrides (e.g. potassium nitride, sodium nitride), acid anhydrides, calcium hypochlorite, dinitrogen tetroxide, sodium + methanol, peroxomonosulfuric acid, potassium tert-butoxide, nitrobenzene, sodium nitrite, aluminum chloride, peroxydisulfuric acid, acetone + alkali, disilane, sodium methylate, triisopropylphosphine, sodium methoxide + methanol, hydrogen trisulfide, 1,3-butadiene, boron trifluoride diethyl ether.

Hazardous Decomposition Products: Hydrogen chloride, phosgene, carbon monoxide, carbon monoxide, carbon dioxide, chlorine.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 67-66-3: FS9100000
CAS# 108-95-2: SJ3325000
CAS# 123-51-3: EL5425000

RTECS:

CAS# 67-66-3: Draize test, rabbit, eye: 148 mg;

Draize test, rabbit, eye: 20 mg/24H Moderate;

Draize test, rabbit, skin: 500 mg/24H Mild;

Inhalation, mouse: LC₅₀ = 17200 mg/m³/2H;

Inhalation, mouse: LC₅₀ = 6000 mg/m³/6H;

Inhalation, rat: LC₅₀ = 47702 mg/m³/4H;

Inhalation, rat: LC₅₀ = 6000 mg/m³/6H;

Oral, mouse: LD₅₀ = 36 mg/kg;

Oral, rat: LD₅₀ = 695 mg/kg;

Oral, rat: LD₅₀ = 1250 mg/kg;

Skin, rabbit: LD₅₀ = >20 gm/kg;

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RTECS:

CAS# 108-95-2: Draize test, rabbit, eye: 5 mg Severe;

Draize test, rabbit, skin: 500 mg/24H Severe;

Draize test, rabbit, skin: 100 mg Mild;

LD₅₀/LC₅₀: Inhalation, mouse: LC₅₀ = 177 mg/m³;

Inhalation, mouse: LC₅₀ = 177 mg/m³/4H;

Inhalation, rat: LC₅₀ = 316 mg/m³;

Inhalation, rat: LC₅₀ = 316 mg/m³/4H;

Oral, mouse: LD₅₀ = 270 mg/kg;

Oral, rat: LD₅₀ = 317 mg/kg;

Oral, rat: LD₅₀ = 512 mg/kg;

Skin, rabbit: LD₅₀ = 630 mg/kg;

Skin, rat: LD₅₀ = 669 mg/kg;

Skin, rat: LD₅₀ = 1500 mg/kg;

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RTECS:

CAS# 123-51-3: Draize test, rabbit, eye: 20 mg/24H Moderate;

Draize test, rabbit, skin: 20 mg/24H Moderate;

Oral, rabbit: LD₅₀ = 3438 mg/kg;

Oral, rat: LD₅₀ = 1300 mg/kg;

Oral, rat: LD₅₀ = 4300 mg/kg;

Skin, rabbit: LD₅₀ = 3970 uL/kg;

Carcinogenicity: Chloroform - ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
California: carcinogen, initial date 10/1/87 NTP: Suspect carcinogen IARC: Group 2B carcinogen
Phenol - IARC: Group 3 (not classifiable)
Isoamyl alcohol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Water flea Daphnia: EC50=12 mg/l; 48-hour; CAS# 108-95-2: Unspecified
Water flea Daphnia: EC50=4.0 mg/l; 96-hour; CAS# 108-95-2: Unspecified
Ecotoxicity: Fish: Fathead Minnow: LC50 > 50 mg/l; 1 Hr; CAS# 108-95-2 Static @ 18-22°C
Fish: Fathead Minnow: TLm = 41 mg/L; 48-hour; CAS# 108-95-2: Flow-through @ 15°C
Fish: Bluegill/Sunfish: TLm = 19 / 5.7 mg/L; 96 Hr; CAS# 108-95-2: Flow-through

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: TOXIC LIQUIDS, ORGANIC, N.O.S.

Hazard Class: 6.1

UN Number: UN2810

Packing Group: II

Canada TDG

Shipping Name: TOXIC LIQUIDS, ORGANIC, N.O.S. (Phenol, Chloroform)

Hazard Class: 6.1

UN Number: UN2810

Packing Group: II

USA RQ: CAS# 67-66-3: 10 lb final RQ; 4.54 kg final RQ

USA RQ: CAS# 108-95-2: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T C

Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

R 40 Limited evidence of a carcinogenic effect.

R 48/20/21/22 Harmful : danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

R 68 Possible risk of irreversible effects.

Safety Phrases:

S 28A After contact with skin, wash immediately with plenty of water.

S 36/37 Wear suitable protective clothing and gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 67-66-3: 3

CAS# 108-95-2: 2

CAS# 123-51-3: 1

Canada

CAS# 67-66-3 is listed on Canada's DSL List

CAS# 108-95-2 is listed on Canada's DSL List

CAS# 123-51-3 is listed on Canada's DSL List

Canadian WHMIS Classifications: D1A, D2A, E

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 67-66-3 is listed on Canada's Ingredient Disclosure List

CAS# 108-95-2 is listed on Canada's Ingredient Disclosure List

CAS# 123-51-3 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 67-66-3 is listed on the TSCA Inventory.

CAS# 108-95-2 is listed on the TSCA Inventory.

CAS# 123-51-3 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 8/03/2000

Revision #6 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.
