Material Safety Data Sheet

Version 5.2
Revision Date 02/07/2012
Print Date 12/24/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Phenol:Chloroform:Isoamyl Alcohol 25:24:1
Product Number	:	P3803
Brand	:	Sigma
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Corrosive, Carcinogen, Mutagen

Target Organs

Central nervous system, Kidney, Liver, Pancreas, Spleen., Cardiovascular system., Blood

GHS Classification
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 4)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 2)
Carcinogenicity (Category 2)
Specific target organ toxicity - single exposure (Category 2)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H302 + H312	Harmful if swallowed or in contact with skin
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H371	May cause damage to organs.

H373	May cause damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.

Precautionary statement(s)

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	3
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Toxic if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component		Classification	Concentration
Phenol			
CAS-No. EC-No. Index-No.	108-95-2 203-632-7 604-001-00-2	Muta. 2; Acute Tox. 3; STOT RE 2; Skin Corr. 1B; H301, H311, H314, H331, H341, H373	30 - 60 %
Chloroform			
CAS-No. EC-No. Index-No.	67-66-3 200-663-8 602-006-00-4	Carc. 2; Acute Tox. 4; STOT RE 2; Skin Irrit. 2; H302, H315, H351, H373	30 - 60 %
3-Methylbutan-1-ol			
CAS-No. EC-No. Index-No.	123-51-3 204-633-5 603-006-00-7	Flam. Liq. 3; Acute Tox. 4; STOT SE 3; H226, H332, H335, EUH066	1 - 5 %

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Phenol	108-95-2	TWA	5 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment Upper Respiratory Tract irritation Lung damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen Danger of cutaneous absorption			
		TWA	5 ppm 19 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		TWA	5 ppm 19 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

	Skin designation The value in mg/m3 is approximate.			
		TWA	5 ppm 19 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption 15 minute ceiling value			
		C	15.6 ppm 60 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption 15 minute ceiling value			
Chloroform	67-66-3	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment Liver damage Embryo/fetal damage Confirmed animal carcinogen with unknown relevance to humans			
		TWA	2 ppm 9.78 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	50 ppm 240 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.			
		ST	2 ppm 9.78 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A			
3-Methylbutan-1-ol	123-51-3	TWA	100 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye & Upper Respiratory Tract irritation			
		STEL	125 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation			
		TWA	100 ppm 360 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.			
		TWA	100 ppm 360 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	125 ppm 450 mg/m3	USA. NIOSH Recommended Exposure Limits

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the

concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents, Strong bases, Strong acids, Lithium, Magnesium, Sodium/sodium oxides, Acid chlorides, Acid anhydrides, Reducing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

Contains the following stabiliser(s):
Edetic acid (0.03 %)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
no data available

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
Eyes: no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Chloroform)
IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Phenol)
NTP:	Reasonably anticipated to be a human carcinogen (Chloroform)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Synergistic effects
no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2810 Class: 6.1 Packing group: III
Proper shipping name: Toxic, liquids, organic, n.o.s. (Phenol)
Reportable Quantity (RQ): 21 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2810 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S. (Phenol)
Marine pollutant: No

IATA
UN number: 2810 Class: 6.1 Packing group: III
Proper shipping name: Toxic liquid, organic, n.o.s. (Phenol)

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Corrosive, Carcinogen, Mutagen

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Phenol	108-95-2	2007-07-01
Chloroform	67-66-3	2007-07-01

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date

Phenol	108-95-2	2007-07-01
Chloroform	67-66-3	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Phenol	108-95-2	2007-07-01
Chloroform	67-66-3	2007-07-01
3-Methylbutan-1-ol	123-51-3	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Phenol	108-95-2	2007-07-01
Chloroform	67-66-3	2007-07-01
3-Methylbutan-1-ol	123-51-3	2007-03-01
Edetic acid	60-00-4	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Phenol	108-95-2	2007-07-01
Chloroform	67-66-3	2007-07-01
3-Methylbutan-1-ol	123-51-3	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Chloroform	67-66-3	2008-10-10

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No.	Revision Date
Chloroform	67-66-3	2008-10-10

16. OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 3

Acute Tox.	Acute toxicity
Carc.	Carcinogenicity
EUH066	Repeated exposure may cause skin dryness or cracking.
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
Muta.	Germ cell mutagenicity
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

Further information