

# • SAFETY DATA SHEET

Version 6.17  
Revision Date 09/27/2025  
Print Date 09/28/2025

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Phenol – chloroform – isoamyl alcohol mixture

Product Number : 77617  
Brand : Sigma

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

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## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

#### Hazards for the product as supplied

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 4

Skin corrosion	: Sub-category 1B
Serious eye damage	: Category 1
Germ cell mutagenicity	: Category 2
Carcinogenicity	: Category 2
Reproductive toxicity	: Category 2
Specific target organ toxicity - single exposure	: Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure (Oral)	: Category 1 (Liver, Kidney)
Specific target organ toxicity - repeated exposure	: Category 2 (Nervous system, Kidney, Liver, Skin)
Short-term (acute) aquatic hazard	: Category 2
Long-term (chronic) aquatic hazard	: Category 2

#### Other hazards

None known.

#### GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements :

- H227 Combustible liquid.
- H301 + H331 Toxic if swallowed or if inhaled.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H336 May cause drowsiness or dizziness.
- H341 Suspected of causing genetic defects.
- H351 Suspected of causing cancer.
- H361 Suspected of damaging fertility or the unborn child.
- H372 Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed.
- H373 May cause damage to organs (Nervous system, Kidney, Liver, Skin) through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
P391 Collect spillage.

**Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Phenol	108-95-2*	$\geq 30 - \leq 60$	TSC
Chloroform	67-66-3*	$\geq 30 - \leq 60$	TSC
Isoamyl alcohol	123-51-3*	$\geq 1 - \leq 5$	TSC

\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

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### SECTION 4. FIRST AID MEASURES

- General advice : First aiders need to protect themselves.  
Show this safety data sheet to the doctor in attendance.
- If inhaled : After inhalation: fresh air. Immediately call in physician.  
If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
- In case of skin contact : After contact with skin: rinse out with polyethylene glycol 400 or a mixture of polyethylene glycol 300/ethanol 2:1 and wash with plenty of water. If neither is available wash with plenty of water.  
Immediately take off contaminated clothing.  
Call a physician immediately.
- In case of eye contact : After eye contact: rinse out with plenty of water.  
Immediately call in ophthalmologist.  
Remove contact lenses.
- If swallowed : If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.  
Do not attempt to neutralise.
- Most important : The most important known symptoms and effects are

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symptoms and effects, both acute and delayed	described in the labelling (see section 2.2) and/or in section 11
Protection of first-aiders	: For personal protection see section 8.
Notes to physician	: No data available

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## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Water Foam Carbon dioxide (CO <sub>2</sub> ) Dry powder
	Foam Carbon dioxide (CO <sub>2</sub> ) Dry powder
Unsuitable extinguishing media	: For this substance/mixture no limitations of extinguishing agents are given.
Specific hazards during fire fighting	: Combustible.
	Vapours are heavier than air and may spread along floors.
	Forms explosive mixtures with air on intense heating.
	Development of hazardous combustion gases or vapours possible in the event of fire.
Hazardous combustion products	: Carbon oxides
	Hydrogen chloride gas
Specific extinguishing methods	: No data available
Further information	: Remove container from danger zone and cool with water. Suppress (knock down) gases/vapours/mists with a

water spray jet.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:  
Do not breathe vapours, aerosols.  
Avoid substance contact.  
Ensure adequate ventilation.  
Keep away from heat and sources of ignition.  
Evacuate the danger area, observe emergency procedures, consult an expert.  
Advice for emergency responders:  
For personal protection see section 8.

Environmental precautions : Do not let product enter drains.

Methods and materials for containment and cleaning up : Cover drains. Collect, bind, and pump off spills.  
Observe possible material restrictions (see sections 7 and 10).  
Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.  
Take precautionary measures against static discharge.

Advice on safe handling : Work under hood. Do not inhale substance/mixture.  
Avoid generation of vapours/aerosols.

Further information on storage conditions : Tightly closed.  
Keep in a well-ventilated place.  
Keep locked up or in an area accessible only to qualified or authorised persons.

Storage class : 6.1A, Combustible, acute toxic Cat. 1 and 2 / very

toxic hazardous materials

Recommended storage temperature : 36 - 46 °F / 2 - 8 °C

Further information on storage stability : Air and light sensitive.  
Store under inert gas.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Phenol	108-95-2	TWA	5 ppm	ACGIH
		TWA	5 ppm 19 mg/m <sup>3</sup>	NIOSH REL
		C	15.6 ppm 60 mg/m <sup>3</sup>	NIOSH REL
		TWA	5 ppm 19 mg/m <sup>3</sup>	OSHA Z-1
Chloroform	67-66-3	TWA	10 ppm	ACGIH
		ST	2 ppm 9.78 mg/m <sup>3</sup>	NIOSH REL
		C	50 ppm 240 mg/m <sup>3</sup>	OSHA Z-1
Isoamyl alcohol	123-51-3	TWA	100 ppm	ACGIH
		STEL	125 ppm	ACGIH
		ST	125 ppm 450 mg/m <sup>3</sup>	NIOSH REL
		TWA	100 ppm 360 mg/m <sup>3</sup>	NIOSH REL
		TWA	100 ppm 360 mg/m <sup>3</sup>	OSHA Z-1
		TWA	2 ppm	US WEEL
		STEL	5 ppm	US WEEL

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Phenol	108-95-2	Phenol	Urine	End of shift (As soon as possible after exposure)	250 mg/g creatinine	ACGIH BEI

				e ceases)		
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**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### Hand protection

Material : Fluorinated rubber  
Break through time : 480 min  
Glove thickness : 0.7 mm  
Protective index : Full contact  
Manufacturer : Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Material : Fluorinated rubber  
Break through time : 480 min  
Glove thickness : 0.7 mm  
Protective index : Splash contact  
Manufacturer : Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Manufacturer : data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

Remarks : 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.  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be



evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

- Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Tightly fitting safety goggles
- Skin and body protection : protective clothing
- Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Color : yellow
- Odor : No data available
- Odor Threshold : No data available  
pH : 7.20 - 8.34
- Melting point : No data available
- Boiling point/boiling range : No data available
- Flash point : 174 °F / 79 °C
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Flammability (liquids) : No data available
- Burning rate : No data available
- Upper explosion limit /  
Upper flammability limit : No data available
- Lower explosion limit /  
Lower flammability limit : No data available
- Vapor pressure : No data available

Relative vapour density	: No data available
Relative density	: No data available
Density	: 1.28 g/cm <sup>3</sup> (68 °F / 20 °C)
Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Explosive properties	: Not classified as explosive.
Oxidizing properties	: none
Particle characteristics	
Particle size	: No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Forms explosive mixtures with air on intense heating.  A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Chemical stability	: The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	: Risk of explosion with: Ammonia Amines nitrogen oxides bases Oxygen alkali amides organic nitro compounds strong alkalis Fluorine

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peroxi compounds  
Alkaline earth metals  
Alkali metals  
Powdered metals  
salts of oxyhalogenic acids  
nitrites  
nitrates  
Peroxides  
Methanol  
with  
alcoholates  
Methanol  
with  
strong alkalis  
Iron  
in powder form  
various alloys  
sensitive to shock  
Methanol  
with  
Sodium hydroxide  
magnesium  
in powder form  
Oxygen  
with  
alkali compounds  
Aluminium  
in powder form  
Acetone  
with  
alkali compounds  
Potassium  
sensitive to shock  
sodium  
sensitive to shock  
Violent reactions possible with:  
phosphines  
bis(dimethylamino)dimethyl tin  
nonmetallic hydrogen compounds  
Powdered metals  
Light metals  
Ketones  
mineral acids  
Strong oxidizing agents  
semimetallic hydrogen compounds  
Aluminium  
Aldehydes  
Halogens  
hydrogen peroxide  
iron(III) compounds  
Oxidizing agents  
Strong acids

Strong bases  
formaldehyde

Conditions to avoid : Strong heating.

Incompatible materials : No data available

Hazardous decomposition products : In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Mixture

##### Acute toxicity

Acute toxicity estimate Oral - 181.04 mg/kg

(Calculation method)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute toxicity estimate Inhalation - 4 h - 3 mg/l - vapour (Calculation method)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute toxicity estimate Dermal - 1,320 mg/kg

(Calculation method)

##### Skin corrosion/irritation

No data available

##### Serious eye damage/eye irritation

Remarks: Mixture causes serious eye damage.

Risk of blindness!

##### Respiratory or skin sensitization

No data available

##### Germ cell mutagenicity

No data available

##### Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

NTP: RAHC - 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 on OSHA's list of regulated carcinogens.

##### Reproductive toxicity

No data available

##### Specific target organ toxicity - single exposure

No data available

##### Specific target organ toxicity - repeated exposure

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

**Components****Phenol****Acute toxicity**

Acute toxicity estimate Oral - 100.1 mg/kg

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Acute toxicity estimate Inhalation - 4 h - 0.51 mg/l - dust/mist

(Expert judgement)

Symptoms: Irritation, Lung oedema

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

LD50 Dermal - Rat - female - 660 mg/kg

(OECD Test Guideline 402)

No data available

**Skin corrosion/irritation**

Skin - In vitro study

Result: Causes burns.

(OECD Test Guideline 431)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Corrosive

(OECD Test Guideline 405)

Remarks: Causes serious eye damage.

Risk of blindness!

**Respiratory or skin sensitization**

Sensitisation test: - Guinea pig

Result: negative

Remarks: (IUCLID)

**Germ cell mutagenicity**

Suspected of causing genetic defects.

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Result: positive

Test Type: Mutagenicity (mammal cell test): micronucleus.

Test system: Chinese hamster ovary cells

Result: positive

#### **Carcinogenicity**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

#### **Reproductive toxicity**

No data available

#### **Specific target organ toxicity - single exposure**

Acute inhalation toxicity - Irritation, Lung oedema

#### **Specific target organ toxicity - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

- Nervous system, Kidney, Liver, Skin

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### **Aspiration hazard**

No data available

### **Chloroform**

#### **Acute toxicity**

LD50 Oral - Rat - male - 908 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - 6 h - 9.17 mg/l - vapour

Acute toxicity estimate Inhalation - Expert judgement - 4 h - 3.1 mg/l - vapour

Dermal: No data available

No data available

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: Irritating to skin. - 24 h

Remarks: (ECHA)

Remarks: Drying-out effect resulting in rough and chapped skin.

Skin - Rabbit

Result: slight irritation

Remarks: (IUCLID)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Irritating to eyes.

Remarks: (ECHA)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

#### **Respiratory or skin sensitization**

Maximisation Test - Guinea pig

Result: negative  
(Regulation (EC) No. 440/2008, Annex, B.6)

**Germ cell mutagenicity**

Test Type: Ames test  
Test system: Escherichia coli/Salmonella typhimurium  
Result: negative  
Remarks: (ECHA)  
Test Type: unscheduled DNA synthesis assay  
Test system: Liver  
Result: negative  
Remarks: (ECHA)  
Method: OECD Test Guideline 474  
Species: Rat - male and female - Red blood cells (erythrocytes)  
Result: negative  
Method: OECD Test Guideline 486  
Species: Rat - male - Liver cells  
Result: negative  
Species: Mouse - female  
Result: negative  
Remarks: (ECHA)

**Carcinogenicity**

Suspected of causing cancer.

**Reproductive toxicity**

Suspected of damaging the unborn child.

**Specific target organ toxicity - single exposure**

May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**

Causes damage to organs through prolonged or repeated exposure.  
- Liver, Kidney

**Aspiration hazard**

No data available

**Isoamyl alcohol**

**Acute toxicity**

Oral: No data available  
Acute toxicity estimate Inhalation - 11.1 mg/l - vapour  
(Expert judgement)  
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)  
Inhalation: No data available  
Dermal: No data available  
No data available

**Skin corrosion/irritation**

Skin - Rabbit  
Result: Moderate skin irritation - 24 h  
Remarks: (RTECS)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Risk of serious damage to eyes.

Remarks: (External MSDS)

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

May cause respiratory irritation. - Respiratory system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Specific target organ toxicity - repeated exposure****Aspiration hazard**

No data available

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Phenol:**

Toxicity to fish	: LC50 (Onchorhynchus clarki): 8.9 mg/l Exposure time: 96 h Test Type: flow-through test Analytical monitoring: yes Method: US-EPA
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Ceriodaphnia dubia (water flea)): 3.1 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: US-EPA
Toxicity to algae/aquatic plants	: EC50 (Pseudokirchneriella subcapitata (algae)): 61.1 mg/l Exposure time: 96 h Test Type: static test Method: US-EPA
Toxicity to fish (Chronic	: NOEC (Fish): 0.077 mg/l

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toxicity) Exposure time: 60 d  
Test Type: semi-static test  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.16 mg/l  
End point: Growth inhibition  
Exposure time: 16 d  
Test Type: semi-static test  
Remarks: (ECHA)

Toxicity to microorganisms : IC50 (microorganisms): 21 mg/l  
Exposure time: 24 h  
Test Type: static test  
Remarks: (ECHA)

#### **Chloroform:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Crassostrea gigas): 152.5 mg/l  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Remarks: (ECHA)

Toxicity to algae/aquatic plants : ErC50 (Chlamydomonas reinhardtii (green algae)): 13.3 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 6.3 mg/l  
End point: reproduction rate  
Exposure time: 21 d  
Test Type: semi-static test  
Analytical monitoring: yes  
Remarks: (ECHA)

#### **Ecotoxicology Assessment**

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

#### **Isoamyl alcohol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 700 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
Remarks: (IUCLID)

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 260 mg/l  
Exposure time: 48 h  
Remarks: (IUCLID)

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Toxicity to microorganisms : EC50 (*Pseudomonas putida*): 2,500 mg/l  
Exposure time: 17 h  
Remarks: (IUCLID)

## **Persistence and degradability**

### **Components:**

#### **Phenol:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Concentration: 100 mg/l  
Result: Readily biodegradable.  
Biodegradation: 62 %  
Exposure time: 100 h  
Method: OECD Test Guideline 301C

#### **Chloroform:**

Biodegradability : Remarks: No data available

#### **Isoamyl alcohol:**

Biodegradability : Remarks: No data available

BOD/COD : BOD/COD: 63 %  
Remarks: (IUCLID)

ThOD : 2,740 mg/g  
Remarks: (Lit.)

BOD/ThOD : 55 %  
Remarks: (Lit.)

## **Bioaccumulative potential**

### **Components:**

#### **Phenol:**

Bioaccumulation : Species: *Danio rerio* (zebra fish)  
Bioconcentration factor (BCF): 17.5  
Exposure time: 5 h  
Temperature: 77 °F / 25 °C  
Concentration: 2 mg/l  
Method: OECD Test Guideline 305  
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 1.47 (86 °F / 30 °C)  
pH: 3 - 8  
Remarks: (ECHA)  
Bioaccumulation is not expected.

**Chloroform:**

Bioaccumulation : Remarks: No data available

**Isoamyl alcohol:**

Partition coefficient: n-octanol/water : log Pow: 1.35 (73 °F / 23 °C)  
pH: 6.5  
Method: OECD Test Guideline 107  
Remarks: Bioaccumulation is not expected.

**Mobility in soil****Components:****Chloroform:**

Distribution among environmental compartments : Adsorption/Soil  
Koc: 52.5, log Koc: 1.72  
Method: (experimental)  
Remarks: Mobile in soils

**Other adverse effects****Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

**Components:****Phenol:**

Results of PBT and vPvB assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

**Chloroform:**

Results of PBT and vPvB assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

**Isoamyl alcohol:**

Results of PBT and vPvB assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

UN/ID No. : UN 2922  
Proper shipping name : Corrosive liquid, toxic, n.o.s.  
(Isoamyl alcohol, Phenol, Chloroform)  
Class : 8  
Subsidiary risk : 6.1  
Packing group : II  
Labels : Class 8 - Corrosive substances, Division 6.1 - Toxic substances  
Packing instruction (cargo aircraft) : 855  
Packing instruction (passenger aircraft) : 851

#### IMDG-Code

UN number : UN 2922  
Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Isoamyl alcohol, Phenol, Chloroform)  
Class : 8  
Subsidiary risk : 6.1  
Packing group : II  
Labels : 8 (6.1)  
EmS Code : F-A, S-B  
Marine pollutant : yes

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR Road

UN/ID/NA number : UN 2922  
Proper shipping name : Corrosive liquids, toxic, n.o.s.  
(Chloroform, Isoamyl alcohol, Phenol)  
Class : 8  
Subsidiary risk : 6.1  
Packing group : II  
Labels : Class 8 - Corrosive substances, Division 6.1 - Toxic substances

ERG Code : 154  
Marine pollutant : no

Poison Inhalation Hazard : No

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Chloroform	67-66-3	10	20
Chloroform	67-66-3	10	10 (D022)

### SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Chloroform	67-66-3	10	20

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
Phenol	108-95-2	10000
Phenol	108-95-2	500*
Chloroform	67-66-3	10000

\*: Solid in the molten or powdered form (particles < 100 microns), in solution, or meeting the NFPA reactivity criteria

**SARA 311/312 Hazards** : Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

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

Phenol	108-95-2	>= 50 - < 70 %
Chloroform	67-66-3	>= 30 - < 50 %

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Phenol	108-95-2	>= 50 - < 70 %
Chloroform	67-66-3	>= 30 - < 50 %

The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

Chloroform	67-66-3	>= 30 - < 50 %
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The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMII Intermediate or Final VOC's (40 CFR 60.489):

Phenol	108-95-2	>= 50 - < 70 %
Chloroform	67-66-3	>= 30 - < 50 %
Isoamyl alcohol	123-51-3	>= 1 - < 5 %

### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Phenol	108-95-2	>= 50 - < 70 %
Chloroform	67-66-3	>= 30 - < 50 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Phenol	108-95-2	>= 50 - < 70 %
Chloroform	67-66-3	>= 30 - < 50 %

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Phenol	108-95-2	>= 50 - < 70 %
Chloroform	67-66-3	>= 30 - < 50 %

This product contains the following priority pollutants related to the U.S. Clean Water Act:

Phenol	108-95-2	>= 50 - < 70 %
Chloroform	67-66-3	>= 30 - < 50 %

### US State Regulations

#### Massachusetts Right To Know

Phenol	108-95-2
Chloroform	67-66-3
Isoamyl alcohol	123-51-3

#### Pennsylvania Right To Know

Phenol	108-95-2
Chloroform	67-66-3
Isoamyl alcohol	123-51-3

#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

#### Vermont Chemicals of High Concern

Phenol	108-95-2
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#### Washington Chemicals of High Concern

Phenol	108-95-2
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#### California Prop. 65

WARNING: This product can expose you to chemicals including Chloroform, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

## TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	: USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
NIOSH REL / C	: Ceiling value not be exceeded at any time.
OSHA Z-1 / TWA	: 8-hour time weighted average
OSHA Z-1 / C	: Ceiling
US WEEL / TWA	: 8-hr TWA
US WEEL / STEL	: Short-Term TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No

Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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