

# Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

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## SECTION 1: Identification

### Product identifier

Trade name/designation:	Phenol : Chloroform : iso-Amyl alcohol (25:24:1) BIOTECHNOLOGY GRADE
Product No.:	0883-AMB2
Synonymes:	none/none
CAS No.:	not applicable
Other means of identification:	

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

Recommended Use:	For Further Manufacturing Use Only
Uses advised against:	Not for Human or Animal Drug Use

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

#### Supplier

##### **VWR International LLC**

Street	100 Matsonford Road Radnor Corporate Center, Building One, Suite 200 P. O. Box 6660
Postal code/City	Radnor, PA 19087
Telephone	+1-800-932-5000 toll-free within US/Canada +1-610-386-1700
Telefax:	+1-610-728-2103

## Emergency phone number

Telephone +1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)

## Preparation Information

VWR International - Product Information Compliance

E-mail sds@vwr.com

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

Hazard classes and hazard categories	Hazard statements
Acute toxicity, category 3, oral, dermal and inhalation	H301+H311+H331
Skin corrosion, category 1B	H314
Germ cell mutagenicity, category 2	H341
Carcinogenicity, category 2	H351
Reproductive toxicity, category 2	H361
Specific target organ toxicity (repeated exposure), category 1	H372

### 2.2 Label elements

#### Labelling in accordance with 29 CFR 1910.1200 (OSHA HCS)

#### Hazard pictograms



Signal word: Danger

Hazard statements	
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
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 through prolonged or repeated exposure.

Precautionary statements	
P201	Obtain special instructions before use.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water/...
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P310	IF exposed or concerned: Immediately call a POISON CENTER/doctor.

**Hazards not otherwise classified (HNOC)**

none/none

## SECTION 3: Composition / information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

**Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200**

Substance name	Concentration	Identifier	Hazard classes and hazard categories
Phenol	50 - 60%	CAS No.: 108-95-2	Acute Tox. 3 - H301+H311+H331 Skin Corr. 1B - H314 Muta. 2 - H341 STOT RE 2 - H373
Chloroform	40 - 50%	CAS No.: 67-66-3	Acute Tox. 3 - H331 Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Carc. 2 - H351 Repr. 2 - H361 STOT RE 1 - H372
Isoamyl alcohol	1 - 3%	CAS No.: 123-51-3	Flam. Liq. 3 - H226 Acute Tox. 4 - H332 STOT SE 3 - H335

## SECTION 4: First aid measures

### 4.1 General information

IF exposed: Immediately call a POISON CENTER/doctor. If unconscious but breathing normally, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

#### In case of inhalation

Immediately call a POISON CENTER/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

### **In case of skin contact**

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

### **After eye contact**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

### **In case of ingestion**

Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

### **Self-protection of the first aider**

First aider: Pay attention to self-protection!

## **4.2 Most important symptoms/effects, acute and delayed**

no data available

## **4.3 Indication of any immediate medical attention and special treatment needed**

no data available

## **SECTION 5: Fire fighting measures**

### **5.1 Extinguishing media**

#### **Suitable extinguishing media**

The product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

#### **Extinguishing media which must not be used for safety reasons**

no restriction

### **5.2 Specific hazards arising from the chemical**

In case of fire may be liberated:

Pyrolysis products, toxic

### **5.3 Advice for firefighters**

DO NOT fight fire when fire reaches explosives.

Protective equipment and precautions for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

#### **Additional information**

Do not allow run-off from fire-fighting to enter drains or water courses.

Do not inhale explosion and combustion gases.

Use water spray/stream to protect personnel and to cool endangered containers.

In case of fire: Evacuate area.

## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

In case of major fire and large quantities: Remove persons to safety.

## 6.2 Environmental precautions

Discharge into the environment must be avoided.

## 6.3 Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Collect in closed and suitable containers for disposal.

## 6.4 Additional information

Clear spills immediately.

# SECTION 7: Handling and storage

## 7.1 Precautions for safe handling

All work processes must always be designed so that the following is as low as possible:

Inhalation

skin contact

Eye contact

Use extractor hood (laboratory).

If handled uncovered, arrangements with local exhaust ventilation have to be used.

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

## 7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: Store between 2 °C and 8 °C.

Keep container tightly closed and in a well-ventilated place. Keep/Store only in original container.

## 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

# SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

Ingredient (Designation)	Regulatory information	Country	Limit value type (country of origin)	Limit value
Phenol	NIOSH	US	LTV	19 mg/m <sup>3</sup> - 5 ppm
Phenol	NIOSH	US	STV	60 mg/m <sup>3</sup> (1) - 15,6 ppm (1)
Phenol	OSHA	US	LTV	19 mg/m <sup>3</sup> - 5 ppm
Chloroform	NIOSH	US	STV	9,78 mg/m <sup>3</sup> (1) - 2 ppm (1)
Chloroform	OSHA	US	STV	240 mg/m <sup>3</sup> - 50 ppm
Isoamyl alcohol	NIOSH	US	LTV	360 mg/m <sup>3</sup> - 100 ppm
Isoamyl alcohol	NIOSH	US	STV	450 (1) mg/m <sup>3</sup> - 125 (1) ppm
Isoamyl alcohol	OSHA	US	LTV	360 mg/m <sup>3</sup> - 100 ppm

## 8.2 Engineering controls

### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

### **Personal protection equipment (PPE)**

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

#### *Eye/face protection*

Eye glasses with side protection

#### *Skin protection*

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

#### By short-term hand contact

Suitable material:	Butyl caoutchouc (butyl rubber)/FKM (fluoro rubber)
Thickness of the glove material:	0,70 mm
Breakthrough time::	> 480 min

#### By long-term hand contact

Suitable material:	Butyl caoutchouc (butyl rubber)/FKM (fluoro rubber)
Thickness of the glove material:	0,70 mm
Breakthrough time::	> 480 min

#### *Respiratory protection*

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

#### *Additional information*

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

#### *Environmental exposure controls*

no data available

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Color:	colorless
(b) Odour:	no data available
(c) Odour threshold:	no data available

#### Safety relevant basic data

(d) pH:	6.7
(e) Melting point/freezing point:	no data available
(f) Initial boiling point and boiling range:	no data available
(g) Flash point:	no data available
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	not applicable
(j) Flammability or explosive limits	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
(k) Vapour pressure:	no data available
(l) Vapour density:	no data available
(m) Relative density:	no data available
(n) Solubility(ies)	
Water solubility (g/L):	no data available
Soluble (g/L) in Ethanol:	no data available
(o) Partition coefficient: n-octanol/water:	no data available
(p) Auto-ignition temperature:	no data available
(q) Decomposition temperature:	no data available
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
(s) Explosive properties:	not applicable
(t) Oxidising properties:	not applicable

### 9.2 Other information

Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

## 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

## 10.3 Possibility of hazardous reactions

no data available

## 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

no data available

## 10.6 Hazardous decomposition products

no data available

## 10.7 Additional information

no data available

# SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

### Acute effects

#### Acute oral toxicity:

Phenol - LD50: > 317 mg/kg - Rat - (RTECS)

Phenol - LDLo: > 140 mg/kg - Human - (RTECS)

Chloroform - LD50: > 695 mg/kg - Rat - (RTECS)

Chloroform - LDLo: > 2514 mg/kg - Human - (RTECS)

Isoamyl alcohol - LD50: < 5000 mg/kg - Rat - (Merck KGaA)

#### Acute dermal toxicity:

Phenol - LD50: < 525 mg/kg - Rat - (IUCLID)

Chloroform - LD50: > 20 g/kg - Rabbit - (National Library of Medicine ChemID Plus (NLM CIP))

Isoamyl alcohol - LD50: < 3000 mg/kg - Rabbit - (Merck KGaA)

#### Acute inhalation toxicity:

Chloroform - LC50: 47702 mg/m3 - Rat - (National Library of Medicine ChemID Plus (NLM CIP))



**Irritant and corrosive effects**

*Primary irritation to the skin:*

Causes severe skin burns and eye damage.

*Irritation to eyes:*

Causes serious eye damage.

*Irritation to respiratory tract:*

not applicable

**Respiratory or skin sensitization**

In case of skin contact: not sensitising

In case of inhalation: not sensitising

**STOT-single exposure**

not applicable

**STOT-repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

no data available	ACGIH	IARC	NTP	OSHA

**Germ cell mutagenicity**

Suspected of causing genetic defects.

**Reproductive toxicity**

Suspected of damaging fertility or the unborn child.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available

#### **Additional information**

no data available

## **SECTION 12: Ecological information**

### **12.1 Ecotoxicity**

#### **Fish toxicity:**

Phenol - LC50: 20.5 mg/l (96 h) - Cairns, J.Jr., and A. Scheier 1959. The Relationship of Bluegill Sunfish Body Size to Tolerance for Some Common Chemicals. Proc.13th Ind.Waste Conf., Purdue Univ.Eng.Bull 96:243-252; Smith, S., V.J. Furay, P.J. Layiwola, and J.A. Menezes-Filho 1994. Ev

Chloroform - LC50: 28 mg/l (96 h) - Pearson, C.R., and G. McConnell 1975. Chlorinated C1 and C2 Hydrocarbons in the Marine Environment. Proc.R.Soc.Lond.B Biol.Sci. 189:305-332

#### **Daphnia toxicity:**

Phenol - LC50: 20 mg/l (48 h) - Cowgill, U.M., and D.P. Milazzo 1991. The Sensitivity of Ceriodaphnia dubia and Daphnia magna to Seven Chemicals Utilizing the Three-Brood Test. Arch.Environ.Contam.Toxicol. 20(2):211-217

Phenol - EC50: 12.6 mg/l (48 h) - Holcombe, G.W., G.L. Phipps, A.H. Sulaiman, and A.D. Hoffman 1987. Simultaneous Multiple Species Testing: Acute Toxicity of 13 Chemicals to 12 Diverse Freshwater Amphibian,..Arch.Environ.Contam.Toxicol. 16:697-710 (OECDG Data File)

Chloroform - LC50: 66.8 mg/l (48 h) - Gersich, F.M., F.A. Blanchard, S.L. Applegath, and C.N. Park 1986. The Precision of Daphnid (Daphnia magna Straus, 1820) Static Acute Toxicity Tests. Arch.Environ.Contam.Toxicol. 15(6):741-749

#### **Algae toxicity:**

Phenol - EC50: 229 mg/l (72 h) - Tisler, T., and J. Zagorc-Koncan 1995. Relative Sensitivity of Some Selected Aquatic Organisms to Phenol. Bull.Environ.Contam.Toxicol. 54(5):717-723

Phenol - EC50: 84.5 mg/l (96 h) - Thellen, C., C. Blaise, Y. Roy, and C. Hickey 1989. Round Robin Testing with the Selenastrum capricornutum Microplate Toxicity Assay. Hydrobiologia 188/189:259-268

#### **Bacteria toxicity:**

no data available

### **12.2 Persistence and degradability**

no data available

### **12.3 Bioaccumulative potential**

Partition coefficient: n-octanol/water: no data available

### **12.4 Mobility in soil:**

no data available

### **12.5 Results of PBT/vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### **12.6 Other adverse effects**

no data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

#### Appropriate disposal / Package

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

#### Additional information

no data available

## SECTION 14: Transport information

### Land transport (DOT)

UN-No.:	UN2810
Proper Shipping Name:	TOXIC LIQUIDS, ORGANIC, N.O.S. (PHENOL/CHLOROFORM SOLUTION)
Class(es):	6.1
Hazard label(s):	6.1
Packing group:	II
Environmental hazards:	No
Marine pollutant:	No
Special precautions for user:	

### Sea transport (IMDG)

UN-No.:	2810
Proper Shipping Name:	TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL/CHLOROFORM SOLUTION)
Class(es):	6.1
Classification code:	
Hazard label(s):	6.1
Packing group:	II
Environmental hazards:	No
Marine pollutant:	No
Special precautions for user:	
Segregation group:	-
EmS-No.	F-A S-A
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
not relevant	

### Air transport (ICAO-TI / IATA-DGR)

UN-No.:	2810
Proper Shipping Name:	TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL/CHLOROFORM SOLUTION)
Class(es):	6.1
Classification code:	
Hazard label(s):	6.1
Packing group:	II

Special precautions for user:

## SECTION 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### SARA 313 Components

- Phenol - CAS No.: 108-95-2
- Chloroform - CAS No.: 67-66-3

#### Massachusetts Right To Know Components

- Phenol - CAS No.: 108-95-2
- Chloroform - CAS No.: 67-66-3
- Isoamyl alcohol - CAS No.: 123-51-3

#### Pennsylvania Right To Know Components

- Phenol - CAS No.: 108-95-2
- Chloroform - CAS No.: 67-66-3
- Isoamyl alcohol - CAS No.: 123-51-3

#### New Jersey Right To Know Components

- Phenol - CAS No.: 108-95-2
- Chloroform - CAS No.: 67-66-3
- Isoamyl alcohol - CAS No.: 123-51-3

#### California Prop. 65 Components



#### **WARNING:**

This product can expose you to chemicals including Chloroform which is 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).

## SECTION 16: Other information

### Abbreviations and acronyms

H226 - Flammable liquid and vapor.  
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled.  
H302 - Harmful if swallowed.  
H314 - Causes severe skin burns and eye damage.  
H315 - Causes skin irritation.  
H319 - Causes serious eye 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.  
H361 - Suspected of damaging fertility or the unborn child.  
H372 - Causes damage to organs through prolonged or repeated exposure.  
H373 - May cause damage to organs through prolonged or repeated exposure.

ACGIH - American Conference of Governmental Industrial Hygienists  
DOT - Department of Transportation  
IARC - International Agency for Research on Cancer  
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations  
ICAO-TI - International Civil Aviation Organization-Technical Instructions  
IMDG - International Maritime Code for Dangerous Goods  
LTV - Long Term Value  
NIOSH - National Institute for Occupational Safety and Health  
NTP - National Toxicology Program  
OSHA - Occupational Safety & Health Administration  
PBT - Persistent, Bioaccumulative and Toxic  
PEL - Permissible Exposure Limit  
STV - Short Term Value  
SVHC - Substances of Very High Concern  
TDG - Transport of Dangerous Goods  
TLV - Threshold Limit Value  
vPvB - very Persistent, very Bioaccumulative

Training advice: Provide adequate information, instruction and training for operators.

**Classification according to Regulation (EC) No 1272/2008 [CLP] - Classification procedure**

Hazard statements	Hazard classes and hazard categories	Classification procedure
H301+H311+H331	Acute Tox. 3	Calculation method.
H314	Skin Corr. 1B	Calculation method.
H341	Muta. 2	Calculation method.
H351	Carc. 2	Calculation method.
H361	Repr. 2	Calculation method.
H372	STOT RE 1	Calculation method.

**Additional information**

Indication of changes      general update

If you need an explanation of the change, contact the supplier. (SDS@avantorsciences.com)

*The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.*