Printing date 02.11.2014

Revision: 02.11.2014



Revision: 02.11.2014

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0 (Contd. of page 1) · Classification according to Directive 67/548/EEC or Directive 1999/45/EC T; Toxic Toxic by inhalation, in contact with skin and if swallowed. R23/24/25: C: Corrosive R34: Causes burns. Xn; Harmful R40-48/20/21/22-68: Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Possible risk of irreversible effects. · Information concerning particular hazards for human and environment: The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version. **Classification system:** The classification is according to the latest editions of the EU-lists, and extended by company and literature data. · 2.2 Label elements · Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation. · Hazard pictograms GHS05, GHS06, GHS08 · Signal word Danger · Hazard-determining components of labelling: phenol Chloroform · Hazard statements H302+H312 Harmful if swallowed or in contact with skin. H331 Toxic if inhaled. H314 Causes severe skin burns and eye damage. H341 Suspected of causing genetic defects. H351 Suspected of causing cancer. H361d Suspected of damaging the unborn child. Causes damage to organs through prolonged or repeated exposure. H372 · Precautionary statements P260 Do not breathe mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. P280 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P308+P313 IF exposed or concerned: Get medical advice/attention. · Additional information: For use in industrial installations only. · 2.3 Other hazards · Results of PBT and vPvB assessment · **PBT:** Not applicable. • vPvB: Not applicable.

(Contd. on page 3)

Printing date 02.11.2014

Revision: 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

(Contd. of page 2)

	per(s) 32-7	
Dangerous compon		
CAS: 108-95-2 EINECS: 203-632-7	phenol T R23/24/25; C R34; Xn R48/20/21/22-68 Muta. Cat. 3 ♦ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ♦ Muta. 2, H341; STOT RE 2, H373; ♦ Skin Corr. 1B, H314	25-50%
CAS: 67-66-3 EINECS: 200-663-8	Chloroform Xn R22-40-48/20/22; Xi R38 Carc. Cat. 3 ♦ Acute Tox. 3, H331; ♦ Carc. 2, H351; Repr. 2, H361d; STOT RE 1, H372; ↑ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	25-50%

· 4.1 Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.

Remove breathing equipment only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

First-aider to wear safety gloves and other PPE as required for self protection.

Keep polyethylene glycol (Lutrol) and Ambubag available for first aider use.

In all cases of significant exposure the patient should be transferred to a hospital as soon as possible.

· After inhalation:

DO NOT DELAY!

Use a respiratory bag or breathing device.

Do not use mouth to mouth or mouth to nose resuscitation.

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:

DO NOT DELAY!

Immediately wash with water and soap and rinse thoroughly.

Immediately remove wetted clothing, shoes and stockings. Continuously rinse the affected parts of the body with polyethylene glycol (e.g. Lutrol) or with plenty of water, followed by washing with olive oil or edible oil (to remove the phenol component). If large areas of the skin have been wetted, IMMEDIATELY call a doctor to the site of the accident, otherwise in every case immediately take the patient to the nearest accident and emergency unit and provide a copy of this safety data sheet.

· After eye contact:

DO NOT DELAY! Check for and remove any contact lenses. Seek immediate medical advice. Rinse opened eye for several minutes under running water. Then consult a doctor. • After swallowing: DO NOT DELAY!

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

(Contd. on page 4)

__(

Printing date 02.11.2014

Revision: 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

(Contd. of page 3)

Drink plenty of water and provide fresh air. Call for a doctor immediately. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

- · 4.2 Most important symptoms and effects, both acute and delayed
- No further relevant information available.
- · Information for doctor: **Contains PHENOL:**

No specific antidote therapy for phenol poisoning is known. Therefore it is important to remove the phenol completely from the body surface and out of the body as quickly as possible, and in the case of inhalation prophylactic treatment to prevent pulmonal oedema is of great importance.

Phenol causes strong caustic burns of the skin and mucous membranes due to its protein degenerating action. The skin initially discolours white, later red. After initial pain, local anaesthesia appears. Absorptive poisoning by large amounts of phenol is possible also through small affected skin regions and quickly leads to paralysis of the central nervous system as well as strong depression of the body temperature.

Inhaling phenol vapours can lead to damage of the bronchial system and pulmonal oedema. Systemic damage to kidneys, liver and heart as well as neuropsychiatric disturbances are produced.

TREATMENT: Thoroughly clean the wetted skin areas, if possible with polyethylene glycol (e.g. Lutrol). In the case of eye contact, rinse copiously with water, in the case of burns rinse continuously with water as far as possible and take to an eye specialist or eye clinic. In the case of inhalation, to prevent pulmonal oedemia, initiate inhalative cortisone therapy as early as possible (e.g. every 10 minutes 5 strokes of a cortisone containing aerosol dosing spray such as Auxiloson, Thomae); administer codeine against dry coughing. In the case of commencing or manifested pulmonary oedemia, systemic administration of cortisone (e.g. Solu Decortin 1000 or Fortecortin 100). Caution: A low symptom or symptom-free interval is possible. If swallowed, gastric lavage after intubation, activated charcoal, saline laxative.

Contains CHLOROFORM:

Do not administer catecholamines (because of the cardiac effect caused by the product).

• 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

- · 5.1 Extinguishing media
- · Suitable extinguishing agents:

CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· 5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

In a fire situation explosive vapour/air mixtures may be formed.

- 5.3 Advice for firefighters
- · Protective equipment:

Wear fully protective suit.

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Mouth respiratory protective device.

Tightly closing chemical protection clothing with respirator equipment independent of the ambient air is required for protection against pyrotic phenol vapours.

· Additional information

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and containers with sprayed water and, if possible, remove them out of the danger zone.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation

Wear protective equipment. Keep unprotected persons away.

Remove persons from danger area.

· 6.2 Environmental precautions:

Do not allow to penetrate the ground/soil.

GB

Printing date 02.11.2014

Revision: 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

(Contd. of page 4)

Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system.

· 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Send for recovery or disposal in suitable receptacles.

Ensure adequate ventilation.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Restrict the quantity stored at the work place.

Avoid direct contact (skin contact, ingestion and/or inhalation of fume/mist/dust) with the product. Safety showers and eye wash facilities should be available at the work area.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Welding and other hot work operations in the work area must only be permitted under supervision.

The product must only be handled by authorised, trained and experienced professionals under strictly controlled conditions.

A trained first-aider must be available whilst this product is being handled.

Risk of phosgene generation:

- Keep ignition sources away, do NOT smoke in the work area.
- Welding operations must only permitted only under supervision.
- No naked flames or uv light sources allowed in the work area.

• Information about fire - and explosion protection: Keep respiratory protective device available.

• 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

- Prevent any seepage into the ground.
- Store only in the original receptacle.

Use only steel or stainless steel containers. Various plastics are attacked (e.g. soft PVC). Hose connections must be made of special rubber

Information about storage in one common storage facility:

Store away from oxidising agents.

Store away from foodstuffs.

Store away from metals.

Do not store together with textiles.

- · Further information about storage conditions:
- Protect from frost.

Keep container tightly sealed.

Store in a bunded area.

Store locked up with keys available only to trained and authorised persons.

• 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

• Additional information about design of technical facilities: No further data; see item 7.

(Contd. on page 6)

Printing date 02.11.2014

Revision: 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

 Ingre 	edients with limit values that require monitoring at the workplace:
108-9	95-2 phenol
WEL	Short-term value: 16 mg/m ³ , 4 ppm
	Long-term value: 7.8 mg/m ³ , 2 ppm
	Sk
67-66	5-3 Chloroform
WEL	Long-term value: 9.9 mg/m ³ , 2 ppm
	Sk
· Addi	tional information: The lists valid during the making were used as basis.
82E	xposure controls
	onal protective equipment:
	t PPE appropriate for the operations taking place taking into account the product properties.
	ral protective and hygienic measures:
	ant women should strictly avoid inhalation or skin contact.
	ot eat, drink, smoke or sniff while working.
	ing food in the working area is prohibited.
	re that washing facilities are available at the work place.
	e system of work must be formulated and followed to ensure that workers who may be pregnant
	tfeeding do not come into direct contact with the product.
	e system of work must be formulated and followed to ensure safe working with this product. Relev
	ers must receive suitable and sufficient training and supervision.
	re that eyewash stations and safety showers are close to the workstation location.
	note of assigned Workplace Exposure Limits.
	nding on the degree of exposure, periodic medical examination is suggested.
	away from foodstuffs, beverages and feed.
	diately remove all soiled and contaminated clothing
Wash	hands before breaks and at the end of work.
Store	protective clothing separately.
Avoi	d contact with the eyes and skin.
Do no	ot inhale gases / fumes / aerosols.
· Resp	iratory protection:
Use s	uitable respiratory protective device in case of insufficient ventilation.
Respi	rator selection must be based on known or anticipated exposure levels, the hazards of the product and
safe v	vorking limits of the selected respirator.
If res	piratory protection is required, institute a complete respiratory protection program including selection
testin	g, training, maintenance and inspection.
Not r	equired if the product is handled in a fume cupboard.



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Wear chemically resistant protective gloves (tested according to DIN EN 374) Material of gloves: Neoprene, PVC

Penetration time of glove material:

- 140 min. (Neoprene)

- 75 min. (PVC)

Printing date 02.11.2014

Revision: 02.11.2014

(Contd. of page 6)

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye protection:

Face protection



Tightly sealed goggles

Chemical goggles (DIN EN 58211, code number 3) or face protection shield. If a splashing of the product is possible wear full face protection.

Body protection:

Impervious protective clothing

Body protection must be chosen depending on product properties, activity and possible exposure. PVC jacket, PVC trousers with bib, robust closed shoes if handled in significant quantities..

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical an	nd chemical properties	
· General Information		
· Appearance:		
Form:	Fluid	
Colour:	Light yellow	
· Odour:	Characteristic	
· Odour threshold:	0.04ppm (phenol)	
· pH-value:	Not determined.	
· Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	Undetermined.	
· Flash point:	82 °C	
· Flammability (solid, gaseous):	Not applicable.	
· Ignition temperature:		
Decomposition temperature:	Not determined.	
· Self-igniting:	Product is not selfigniting.	
· Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	1.3 Vol %	
Upper:	9.5 Vol %	
· Vapour pressure at 20 °C:	210 hPa	
· Density at 20 °C:	1.25 g/cm ³	
Relative density	Not determined.	
· Vapour density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
water:	Slightly soluble.	
· Partition coefficient (n-octanol/wate	r): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
		(Contd. on page 8)

Printing date 02.11.2014

Revision: 02.11.2014

(Contd. of page 7)

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

• 9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity

· 10.2 Chemical stability

\cdot Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Residue upon evaporation decomposes on heating. This produces toxic fumes.

· 10.3 Possibility of hazardous reactions

PHENOL

Phenol is sensitive to oxidizing agents. This generates fire and explosion hazard.

Reacts with aldehydes, isocyanates, nitrites, nitrides and Friedel-Craft catalysts (sometimes violently or explosively). It may react to form catechol, hydroquinone, etc. as a result of radical formation. The solution is a weak acid.

CHLOROFORM

At high temperature, chloroform thermaly decomposes giving toxic and corrosive products : Hydrogen chloride gas, Phosgene

- 10.4 Conditions to avoid No further relevant information available.
- · 10.5 Incompatible materials:

Strong acids and oxidising agents Strong bases.

Finely divided metals.

Aldehydes, isocyanates, nitrites, nitrides, Friedel-Craft catalysts, catechol, hydroquinone.

Aluminium, Magnesium, Zinc, Titanium (risk of explosion).

Oxygen.

• **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide Hydrogen chloride (HCl) Phosgene

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

- · Acute toxicity:
- · LD/LC50 values relevant for classification:

108-95-2 phenol

Oral LD50 340 mg/kg (rat)

Dermal LD50 660 mg/kg (rat)

67-66-3 Chloroform

Oral LD50 1100 mg/kg (rat)

Dermal LD50 >4000 mg/kg (rat)

· Primary irritant effect:

 \cdot on the skin: Caustic effect on skin and mucous membranes.

- \cdot on the eye: Strong caustic effect.
- Sensitisation: No sensitising effects known.
- · Subacute to chronic toxicity:

Effects of long-term or repeated exposure: Repeated or prolonged contact with skin may cause dermatitis. Phenol may have effects on the liver and kidneys.

· Additional toxicological information:

Depending on the degree of exposure, periodic medical examination is suggested.

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

(Contd. on page 9)

⁻ GB

Printing date 02.11.2014

Revision: 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

(Contd. of page 8)

Toxic Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

ROUTES OF ENTRY: Phenol can be absorbed into the body by inhalation of its vapour/mist, through the skin and by ingestion.

Phenol exerts a marked corrosive action on any tissue of contact when ingested, inhaled or after skin exposure. Its cellular uptake is both rapid and passive due to its lipophilic character, and signs of systemic toxicity develop soon after exposure. Phenol's main target organs are the liver and kidney. It may also effect the respiratory and cardiovascular systems.

Effects of short-term exposure: Phenol and its vapour are corrosive to the eyes, skin and respiratory tract. Inhalation of of the vapour may cause lung oedema. It may cause effects on the central nervous system, heart and kidneys. This may result in convulsions, coma, cardiac disorders, respiratory failure and collapse. Exposure could cause death. The effects may be delayed. Medical observation is indicated.

ROUTES OF ENTRY: The main route of exposure of chloroform is inhalation but in some cases poisoning is due to ingestion; skin absorption is limited.

NO smoking in or near the work area - breakdown products such as phosgene may be produced in the burning area of the tobacco.

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)

Muta. 2, Carc. 2, Repr. 2

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

- 108-95-2 phenol
- EC50 3.1 mg/kg (daphnia)
- 67-66-3 Chloroform
- EC50 353 mg/kg (daphnia)
- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential Product is not expected to bioaccumulate.
- 12.4 Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water Do not allow product to reach ground water, water course or sewage system, even in small quantities. Must not reach sewage water or drainage ditch undiluted or unneutralised.

Danger to drinking water if even extremely small quantities leak into the ground.

· 12.5 Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

- Recommended Hierarchy of Controls:
- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Contact waste processors for recycling information.

(Contd. on page 10)

Printing date 02.11.2014

Revision: 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

(Contd. of page 9)

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· European waste catalogue

Waste key numbers in accordance with the European Waste Catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

· Uncleaned packaging:

· Recommendation:

Container remains hazardous when empty. Continue to observe all precuations.

Do not mix with other waste streams.

Containers, even those that are "empty," may contain residues that can develop flammable vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

14.1 UN-Number	11112010
ADR, IMDG, IATA	UN2810
14.2 UN proper shipping name	
ADR	2810 TOXIC LIQUID, ORGANIC, N.O.S. (PHENO
	CHLOROFORM)
IMDG, IATA	TOXIC LIQUID, ORGANIC, N.O.S. (PHENO CHLOROFORM)
	CHLOROFORM)
14.3 Transport hazard class(es)	
ADR, IMDG, IATA	
, _,	
- A Contraction of the second s	
6	
Class	6.1 Toxic substances.
Label	6.1
14.4 Packing group	
ADR, IMDG, IATA	П
, ,	11
14.5 Environmental hazards:	
Marine pollutant:	No
14.6 Special precautions for user	Warning: Toxic substances.
Danger code (Kemler):	60
EMS Number:	F-A,S-A
Segregation groups	Liquid halogenated hydrocarbons
14.7 Transport in bulk according to Ann	nex II of
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	100 ml
Transport category	2
Tunnel restriction code	D/E
	UN2810 TOYIC LIQUID OBCANIC NO
UN "Model Regulation":	UN2810, TOXIC LIQUID, ORGANIC, N.O. (PHENOL, CHLOROFORM), 6.1, II

(Contd. on page 11)

Printing date 02.11.2014

Revision: 02.11.2014

Trade name: Phenol:Chloroform 1:1 pH6.7-8.0

(Contd. of page 10)

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

· Relevant ph	rases
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.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
R22	Harmful if swallowed.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R38	Irritating to skin.
R40	Limited evidence of a carcinogenic effect.
	2 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in
	contact with skin and if swallowed.
R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if
	swallowed.
R68	Possible risk of irreversible effects.
· Abbreviatio	ns and acronyms:
	cute toxicity, Hazard Category 3
	cute toxicity, Hazard Category 4
	Skin corrosion/irritation, Hazard Category 1B in corrosion/irritation, Hazard Category 2
	ious eye damage/eye irritation, Hazard Category 2
	cell mutagenicity, Hazard Category 2
	ogenicity, Hazard Category 2
	luctive toxicity, Hazard Category 2 ecific target organ toxicity - Repeated exposure, Hazard Category 1
	ecific target organ toxicity - Repeated exposure, Hazard Category 2
1	GB-