

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product information

Trade name : Phenol

Use of the Substance/Mixture : Raw material in chemical industry

Manufacturer : Borealis Polymers Oy
P.O.Box 330, FI-06101 Porvoo, Finland
Telephone: +358 9 394900
Emergency telephone:
+358 9 39493622 Shift supervisor, Phenol (24h)
+358 10 4582267 Fire department, Kilpilahti industrial area (24h)
+358 9 471977 & +358 9 4711 Poison Information Center, Finland (24h)

Supplier : Borealis AG
Wagramerstrasse 17-19, 1220 Vienna, Austria
Telephone: +43 1 22400 0
E-mail address: SDS@borealisgroup.com

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment

Possible risk of irreversible effects.

Toxic by inhalation, in contact with skin and if swallowed.

Causes burns.

Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

Other hazards which do not result in classification

May be fatal if absorbed through skin.

May cause irreversible eye damage.

Symptoms may be delayed.

See chapter 4.

Vapours may form explosive mixtures with air.

Readily degradable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No. : 108-95-2

Index-No. : 604-001-00-2

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

EINECS-No. : 203-632-7

Hazardous components

Chemical Name	CAS-No.	EC-No. / Registration number	Classification	Concentration [%]
carbolic acid	108-95-2	203-632-7	Mut.Cat.3; R68 T; R23/24/25 C; R34 Xn; R48/20/21/22	<= 100

For the full text of the R-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

- General advice : Plan first aid action before beginning work with this product.
Keep available:
Eye wash bottle with pure water and disposable cloths in polyethylene glycol at the workplace and in vehicles.
In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- Inhalation : Remove from exposure.
Keep warm and at rest and provide fresh air.
In case of breathing difficulties, apply mouth to mouth respiration.
Seek medical advice immediately.
- Skin contact : Take off all contaminated clothing immediately.
Wash off with polyethylene glycol (in disposable cloths) and with plenty of water.
Keep on washing until medical assistance is obtained and skin is not white.
- Eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Continue rinsing eyes during transport to hospital.
- Ingestion : Rinse mouth.
Immediately give large quantities of water to drink.
Do NOT induce vomiting.
Seek medical advice immediately.

Notes to physician

- Symptoms : Inhalation:
Irritation

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

Shortness of breath
Lung oedema

Symptoms of poisoning:
Vomiting
Convulsions
Irregular cardiac activity
Unconsciousness
Breathing difficulties
Fatality

Skin contact:
Skin disorders
Corrosion
Dermatitis
Necrosis
Fatality

Risks : Symptoms may be delayed.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry powder, carbon dioxide, foam and water mist.

Specific hazards during fire fighting : Observe the risk of explosion.
Vapours may form explosive mixtures with air.
Burning produces noxious and toxic fumes.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.

Further information : Keep people away from and upwind of spill/leak.
Remove all sources of ignition.
Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Avoid all contact with the product.
Use personal protective equipment.
See chapter 8.

Environmental precautions : Prevent product from entering environment and drains.
If major spillage occurs, contact the proper local authorities.

Methods for cleaning up : Large molten masses:
Dam up.
Collect mechanically and dispose in suitable container for

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

disposal.
Small amounts:
Soak up with inert absorbent material.
Alternatively:
Allow to solidify, use mechanical handling equipment.
Shovel into suitable container for disposal.
Dispose of as hazardous waste.
See chapter 13.

Additional advice : Keep people away from and upwind of spill/leak.
Attempt to stop leakage without personal risk.

7. HANDLING AND STORAGE

Handling

Advice on safe handling : To be handled by trained personnel only.
Ensure adequate ventilation.
The following actions are recommended: Closed systems for handling, process and storage.
Keep away from sources of ignition - No smoking.
Avoid contact with skin, eyes and clothing.
Avoid inhalation of vapour or mist.

Storage

Requirements for storage areas and containers : Suitable container:
Stainless steel
Unsuitable container:
Aluminium
Lead
Copper
Copper alloys
Zinc
Unlined steel
May attack many plastics, rubbers and coatings.
Keep away from incompatible materials.
See chapter 10.
Keep container tightly closed and in a well-ventilated place.
Keep under nitrogen.

Further information on storage conditions : Take precautionary measures against static discharges.
To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded.
Keep away from food, drink and animal feedingstuffs.
Easy access to emergency shower and eye wash facility is required.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
carbolic acid	108-95-2	TWA	2 ppm 7,8 mg/m ³	2000-06-16	2000/39/EC
Further information	:	skin: Identifies the possibility of significant uptake through the skin Indicative			
		HTP-arvot 8h	2 ppm 8 mg/m ³	2007-08-09	FI OEL
Further information	:	The health risk of absorbed amounts of compounds which can pass through the skin to the body cannot be evaluated from their atmospheric concentration. Therefore these compounds have the notification "skin" in the list. Many compounds can be irritating or coorsive when in contact with the skin, especially strong acids and bases.			
		HTP-arvot 15 min	5 ppm 20 mg/m ³	2007-08-09	FI OEL
Further information	:	The health risk of absorbed amounts of compounds which can pass through the skin to the body cannot be evaluated from their atmospheric concentration. Therefore these compounds have the notification "skin" in the list. Many compounds can be irritating or coorsive when in contact with the skin, especially strong acids and bases.			

Engineering measures

The following actions are recommended: Closed systems for handling, process and storage.

Personal protective equipment

Respiratory protection : In case of insufficient ventilation: Respirator with ABEK-P3 filter or self-contained breathing apparatus.

Hand protection : Wear suitable gloves:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

: thick PVC
Break through time: > 480 min

: neoprene
Break through time: > 480 min

: polyvinylchloride (PVC)
Break through time: > 60 min

Eye protection : Wear goggles and if needed face-shield.

Skin and body protection : Wear suitable protective clothing and rubber boots.
If splashes are likely to occur:
Complete suit protecting against chemicals

Protective measures : Avoid and prevent all spillage, contact and exposure.
Smoking, eating and drinking should be prohibited in the application area.
Wash hands before breaks and immediately after handling the product.

Environmental exposure controls

General advice : Prevent product from entering environment and drains.
If major spillage occurs, contact the proper local authorities.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form : clear liquid or white crystalline

Colour : Change in colour if exposed to air and light:
pink
red

Odour : characteristic

Safety data

Flash point : 79 °C

Lower explosion limit : 1,3 %(V)

Upper explosion limit : 9,0 %(V)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

Autoignition temperature	: 605 °C
Melting point/range	: 41 °C
Boiling point/boiling range	: 182 °C
Vapour pressure	: 0,47 hPa at 20 °C
Density	: 1,071 g/cm ³ at 25 °C
Water solubility	: 86 g/l at 20 °C
Partition coefficient: n-octanol/water	: log Pow: 1,5
Solubility in other solvents	: Medium: Fat solubility Note: Soluble in most organic solvents.
Relative vapour density	: 3,2

10. STABILITY AND REACTIVITY

Conditions to avoid	: Exposure to air. Exposure to sunlight. Keep away from heat and sources of ignition.
Materials to avoid	: Strong oxidizing agents sulphuric acid Nitric acid aluminium chloride Aldehydes sodium hypochlorite sodium hydroxide Strong bases Aluminium Zinc Lead Copper Copper alloys Unlined steel
Hazardous decomposition products	: Heating or fire can release toxic and corrosive gases.
Hazardous reactions	: May attack many plastics, rubbers and coatings.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

11. TOXICOLOGICAL INFORMATION

- Acute oral toxicity : LD50: 317 mg/kg
Species: rat
- Acute inhalation toxicity : LC50: 0,316 mg/l
Exposure time: 4 h
Species: rat
- Acute dermal toxicity : LD50: 669 mg/kg
Species: rat
- Skin irritation : Remarks: Causes burns.
Exposure quickly causes a strong corrosive action upon all body tissue.
Possible risk of irreversible effects.
- Sensitisation : Remarks: Did not cause sensitization on laboratory animals.
- Repeated dose toxicity : Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
Prolonged exposure may cause chronic effects:
disorder of nervous system,
injuries to liver and kidneys.
Repeated skin contact:
dermatitis,
disorder of pigmentation.
- : IARC evaluation:
(1999)
Group 3; Unclassifiable as to carcinogenicity to humans (because of inadequate or limited evidence).
EC:
Mutagenic Category 3
- Further information : Inhalation
Irritation
sore throat
burning sensation

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

Cough
Dizziness
Headache
Nausea
Vomiting
Shortness of breath
Symptoms may be delayed.

: Eye contact
May cause irreversible eye damage.

: Skin contact
white skin surface
Corrosion
Necrosis
death.
Symptoms may be delayed.

: Ingestion
Severe irritation
corrosive effects
acute lethal effects

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish : LC50: 7 - 36 mg/l
Exposure time: 96 h

Species: fish
Test substance: phenol

Elimination information (persistence and degradability)

Bioaccumulation : Bioconcentration factor (BCF): 2
Test substance: phenol
Remarks:
Bioaccumulation not expected.

Mobility : Medium: Air
Remarks:
1%
: Medium: Water
Remarks:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

98.5%
The product evaporates slowly.
The product is soluble in water.

: Medium: Soil
Remarks:
0.5%
High mobility

Biodegradability : Remarks:
Degradation in water:
completely
1 - 4 days
Readily biodegradable.

Physico-chemical
removability : Remarks:
Degradation in soil:
completely
2 - 5 days
Readily degradable.

Additional ecological
information : Not classified as dangerous.

13. DISPOSAL CONSIDERATIONS

Product : Dispose of as hazardous waste in compliance with local and national regulations.

14. TRANSPORT INFORMATION

ADR

UN-Number : 2312
Description of the goods : PHENOL, MOLTEN
Class : 6.1
Packing group : II
Labels : 6.1

IMDG

UN-Number : 2312
Description of the goods : PHENOL, MOLTEN
Class : 6.1
Packing group : II
EmS Number 1 : F-A

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

EmS Number 2 : S-A
Marine pollutant : no
Other UN-Number: 1671 (PHENOL, SOLID)

15. REGULATORY INFORMATION

Labelling according to EC Directives

Symbol(s)

:



Toxic



Corrosive

R-phrase(s)

: R23/24/25
R34
R48/20/21/22

Toxic by inhalation, in contact with skin and if swallowed.

Causes burns.

Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

Possible risk of irreversible effects.

S-phrase(s)

: S24/25
S26
S28
S36/37/39
S45

Avoid contact with skin and eyes.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After contact with skin, wash immediately with plenty of polyethylene glycol (in disposable cloths) and with plenty of water. Wear suitable protective clothing, gloves and eye/face protection.

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

Hazardous components which must be listed on the label:

- 108-95-2 carbolic acid

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Phenol

Version 12

Revision Date 04.01.2010

Print Date 04.01.2010

16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3

R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R68	Possible risk of irreversible effects.

Further information

Issuer: : Borealis Group Product Stewardship / Andreas Ekholm & Arvo Kulo

Sources of key data used to compile the Safety Data Sheet : IPCS Environmental Health Criteria 161, WHO, 1994 (www.inchem.org/documents/ehc/ehc/ehc161.htm)
IUCLID Dataset 2000 Phenol (<http://ecb.jrc.ec.europa.eu/IUCLID-DataSheets/108952.pdf>)
Environment Guide 71; Environmental properties of chemicals, Finnish Environment Institute, Helsinki 2000
International Chemical Safety Card, Phenol, October 2001 (<http://www.inchem.org/documents/icsc/icsc/eics0070.htm>)

Disclaimer

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however we do not assume any liability whatsoever for the accuracy and completeness of such information.

Borealis makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.

It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.

No liability can be accepted in respect of the use of Borealis' products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials.