

## Chemical Safety Data Sheet MSDS / SDS

## Phenol

Revision Date:2024-12-21 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Phenol  
CBnumber : CB4362168  
CAS : 108-95-2  
EINECS Number : 203-632-7  
Synonyms : Phenol,PhOH

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P501 Dispose of contents/container to....  
P405 Store locked up.  
P311 Call a POISON CENTER or doctor/physician.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P307+P311 IF exposed: call a POISON CENTER or doctor/physician.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.  
P270 Do not eat, drink or smoke when using this product.  
P264 Wash skin thoroughly after handling.  
P264 Wash hands thoroughly after handling.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P202 Do not handle until all safety precautions have been read and understood.  
P201 Obtain special instructions before use.

#### **Hazard statements**

H411 Toxic to aquatic life with long lasting effects  
H401 Toxic to aquatic life  
H373 May cause damage to organs through prolonged or repeated exposure  
H372 Causes damage to organs through prolonged or repeated exposure  
H370 Causes damage to organs  
H360 May damage fertility or the unborn child  
H341 Suspected of causing genetic defects  
H340 May cause genetic defects  
H332 Harmful if inhaled  
H331 Toxic if inhaled  
H319 Causes serious eye irritation  
H318 Causes serious eye damage  
H314 Causes severe skin burns and eye damage  
H312 Harmful in contact with skin  
H311 Toxic in contact with skin  
H302 Harmful if swallowed  
H301 Toxic if swallowed  
H227 Combustible liquid  
H225 Highly Flammable liquid and vapour

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Phenol
Synonyms	: Phenol, PhOH
CAS	: 108-95-2
EC number	: 203-632-7
MF	: C <sub>6</sub> H <sub>6</sub> O
MW	: 94.11

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## SECTION 4: First aid measures

## Description of first aid measures

### General advice

First aider needs to protect himself. Show this material 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 symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given. For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Carbon oxides Combustible.

Vapors 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.

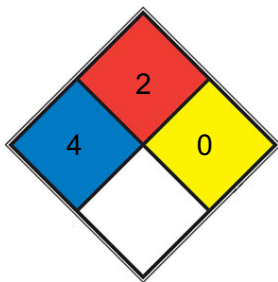
### Advice for firefighters

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

### Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



■	HEALTH	4	Very short exposure could cause death or major residual injury (e.g. hydrogen cyanide, phosgene, methyl isocyanate, <a href="#">hydrofluoric acid</a> )
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■	FIRE	2	Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, <a href="#">sulfur</a> )
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■	REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, <a href="#">N<sub>2</sub></a> )
<hr/>			
□	SPEC.		
□	HAZ.		

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Keep away from

heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

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. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

Work under hood. Do not inhale substance/mixture.

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

For precautions see section 2.2.

## Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.  
Handle and store under inert gas. Light sensitive.

## Specific end use(s)

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

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# SECTION 8: Exposure controls/personal protection

## control parameter

### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

## Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face 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 protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact Material: Viton?

Minimum layer thickness: 0,7 mm Break through time: 480 min

Material tested: Vitoject? (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Viton?

Minimum layer thickness: 0,7 mm Break through time: 480 min

Material tested: Vitoject? (KCL 890 / Aldrich Z677698, Size M)

#### Body Protection

Flame retardant antistatic protective clothing.

#### Respiratory protection

required when dusts/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.

#### Control of environmental exposure

Do not let product enter drains.

### Exposure limits

TLV-TWA skin 5 ppm ( $\sim 19 \text{ mg/m}^3$ ) (ACGIH, MSHA, and OSHA); 10-hour TWA 5.2 ppm ( $\sim 20 \text{ mg/m}^3$ ) (NIOSH); ceiling 60 mg (15 minutes) (NIOSH); IDLH 250 ppm (NIOSH).

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	solid
Odour	stinging
Odour Threshold	0,005 ppm
pH	ca.5 at 50 g/l at 20 °C
Melting point/freezing point	Melting point/range: 40 - 42 °C - lit.
Initial boiling point and boiling range	182 °C - lit.
Flash point	79,0 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 9,5 %(V) Lower explosion limit: 1,3 %(V)
Vapour pressure	0,53 hPa at 20,0 °C
Vapour density	3,2 at 20 °C - (Air = 1.0)
Relative density	1,071 g/cm <sup>3</sup> at 25 °C
Water solubility	87 g/l at 25 °C
Partition coefficient: n-octanol/water	log Pow: 1,47 at 30 °C - (ECHA), Bioaccumulation is not expected.
Autoignition temperature	715 °C at 1.013 hPa
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Henry's Law Constant	1.09 at 5 °C (average derived from six field experiments, Lüttke and Levsen, 1997)

### Other safety information

Surface tension 38,2 mN/m at 50,0 °C

Relative vapor density

3,2 at 20 °C - (Air = 1.0)

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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.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

## Chemical stability

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

## Possibility of hazardous reactions

No data available

## Conditions to avoid

Strong heating.

## Incompatible materials

rubber, various plastics, various alloys, various metals, Strong oxidizing agents

## Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available

In the event of fire: see section 5

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# SECTION 11: Toxicological information

## Information on toxicological effects

### Acute toxicity

No data available

LD50 Dermal - Rat - female - 660 mg/kg (OECD Test Guideline 402)

### Skin corrosion/irritation

### Serious eye damage/eye irritation

Eyes - Rabbit Result: Corrosive

(OECD Test Guideline 405)

Causes serious eye damage. Risk of blindness!

### Respiratory or skin sensitization

Remarks: (IUCLID)

### Germ cell mutagenicity

Suspected of causing genetic defects.

Mutagenicity (mammal cell test): chromosome aberration. Chinese hamster ovary cells

Result: positive

Mutagenicity (mammal cell test): micronucleus. 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.

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

### Reproductive toxicity

No data available

### Specific target organ toxicity - single exposure

No data available

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

May cause damage to organs through prolonged or repeated exposure. - Nervous system, Kidney, Liver, Skin

### **Aspiration hazard**

No data available

### **Additional Information**

RTECS: SJ3325000

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, Vomiting, Circulatory collapse, tachypnea, paralysis, Convulsions, Coma., necrosis of mouth and G.I. Tract, Jaundice, respiratory failure, cardiac arrest

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

### **Toxicity**

LD50 orally in rats: 530 mg/kg (Deichmann, Witherup)

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## **SECTION 12: Ecological information**

### **Toxicity**

#### **Toxicity to fish**

flow-through test LC50 - *Onchorhynchus clarki* - 8,9 mg/l - 96 h (US-EPA)

#### **Toxicity to daphnia and other aquatic invertebrates**

static test EC50 - *Ceriodaphnia dubia* (water flea) - 3,1 mg/l - 48 h (US-EPA)

#### **Toxicity to algae**

static test EC50 - *Pseudokirchneriella subcapitata* (algae) - 61,1 mg/l  
- 96 h (US-EPA)

#### **Toxicity to bacteria**

static test IC50 - microorganisms - 21 mg/l - 24 h

Remarks: (ECHA)

### **Persistence and degradability**

Biodegradability aerobic - Exposure time 100 h

Result: 62 % - Readily biodegradable. (OECD Test Guideline 301C)

### **Bioaccumulative potential**

Bioaccumulation *Danio rerio* (zebra fish) - 5 h

at 25 °C - 2 mg/l(Phenol)

Bioconcentration factor (BCF): 17,5 (OECD Test Guideline 305)

Remarks: Does not bioaccumulate.

### **Mobility in soil**

No data available

### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and  
Chemical Book



very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### **Other adverse effects**

No data available

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## SECTION 13: Disposal considerations

#### **Waste treatment methods**

##### **Incompatibilities**

Phenol is incompatible with strong oxidizing agents, calcium hypochlorite, halogens, halogenated compounds, aluminum chloride, and nitrobenzene. Hot phenol can attack aluminum, lead, magnesium and zinc.

##### **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

##### **Waste Disposal**

Consult with environmental regulatory agencies for guidance on acceptable disposal practices. Generators of waste containing this contaminant ( $\geq 100$  kg/mo) must conform with EPA regulations governing storage, transportation, treatment, and waste disposal. Incineration.

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## SECTION 14: Transport information

#### **UN number**

ADR/RID: 1671 IMDG: 1671

#### **UN proper shipping name**

ADR/RID: PHENOL, SOLID IMDG: PHENOL, SOLID IATA: Phenol, solid

#### **Transport hazard class(es)**

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

#### **Packaging group**

ADR/RID: II IMDG: II IATA: II

#### **Environmental hazards**

ADR/RID: yes IMDG Marine pollutant: yes IATA: no

#### **Special precautions for user**

No data available

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## SECTION 15: Regulatory information

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

##### **Regulations on the Safety Management of Hazardous Chemicals**

China Catalog of Hazardous chemicals 2015:Listed. website: <https://www.mem.gov.cn/>

### **Measures for Environmental Management of New Chemical Substances**

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

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## SECTION 16: Other information

### **Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### **References**

【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### **Other Information**

Other UN numbers: 2312 (molten); 2821 (solution). Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.