

Chemical Safety Data Sheet MSDS / SDS

Phenol

Revision Date:2025-02-01 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

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
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.

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

H331 Toxic if inhaled
H332 Harmful if inhaled
H340 May cause genetic defects
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
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

SECTION 3: Composition/information on ingredients

Substance

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

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

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Water Foam Carbon dioxide (CO₂) 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.

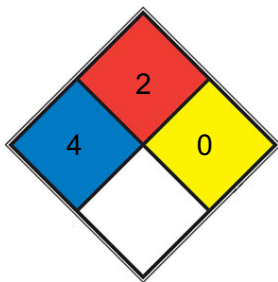
Advice for firefighters

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, hydrofluoric acid) |
| <hr/> | | |
| ■ | 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, sulfur) |
| <hr/> | | |
| ■ | REACT 0 | Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, N₂) |
| <hr/> | | |
| □ | SPEC. | |
| □ | HAZ. | |

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.

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

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).

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).

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).

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 ³ 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)

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

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)

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.

Toxics Screening Level

The initial threshold screening level (ITSL) for phenol is 190 µg/m³ based on an 8-hour averaging time.

Other adverse effects

No data available

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 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 (≥100 kg/mo) must conform with EPA regulations governing storage, transportation, treatment, and waste disposal. Incineration.

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

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

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

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

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

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

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

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

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

EC Inventory:Listed.

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

【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.