Chemical Safety Data Sheet MSDS / SDS

Resorcinol SDS

Revision Date:2024-04-25 Revision Number:1

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

Product identifier

Product name: Resorcinol

CAS: 108-46-3

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.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Skin irritation, Category 2

Eye irritation, Category 2
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
H400 Very toxic to aquatic life

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P321 Specific treatment (see ... on this label).
P332+P317 If skin irritation occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 Collect spillage.

Storage

none

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Resorcinol
Common names and synonyms:	Resorcinol
CAS number:	108-46-3
EC number:	203-585-2
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give a slurry of activated charcoal in water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Inhalation of vapors or dust causes irritation of respiratory tract. Ingestion causes burns of mucous membranes, severe diarrhea, pallor, sweating, weakness, headache, dizziness, tinnitus, shock, and severe convulsions; may also cause siderosis of the spleen and tubular injury to the kidney. Contact with eyes causes irritation. Can be absorbed from wounds or through unbroken skin, producing severe dermatitis, methemoglobinemia, cyanosis, convulsions, tachycardia, dyspnea, and death. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Phenols and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or involved in fire: Extinguish fire using agent suitable for type of surrounding fire (Material itself does not burn or burns with difficulty). Use water in flooding quantities as fog.

Specific hazards arising from the chemical

Behavior in Fire: Containers may explode. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Environmental consideration: Water spill: Use mechanical dredges or lifts to remove immobilized masses of pollutants and precipitates.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Prevent build-up of electrostatic charges (e.g., by grounding). Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Separated from incompatible materials and food and feedstuffs. See Chemical Dangers.Separated from incompatible materials and food and feedstuffs.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 10 ppm as TWA; 20 ppm as STEL; A4 (not classifiable as a human carcinogen).MAK: sensitization of skin (SH).EU-OEL: 45 mg/m3, 10 ppm as TWA; (skin)

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles, face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Solid. Flakes.
Colour:	White-slightly colored flake.
Odour:	Faint, characteristic odor
Melting point/freezing point:	110 °C.
Boiling point or initial boiling point and boiling range:	277.5 °C. Atm. press.:1 013 hPa.
Flammability:	Class IIIB Combustible Liquid: Fl.P. at or above 200°F., but may be difficult to ignite.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 1.4% at 392 deg F (200 deg C) by volume; Upper flammable limit: 1.28% by volume
Flash point:	127 °C.
Auto-ignition temperature:	>= 605 - <= 608 °C. Remarks:Handbook data/ published data; data on pressure was . Assumed to be 1013 hPa.

Decomposition temperature:	no data available
pH:	4.5. Remarks:10% aqueous solution, temperature not provided.
Kinematic viscosity:	not stated = 31. Temperature:150.0°C.;not stated = 38. Temperature:140.0°C.
Solubility:	Miscible with water
Partition coefficient n-octanol/water:	log Pow = 0.8. Temperature:20 °C. Remarks:Published data, pH is not reported.
Vapour pressure:	0.001 hPa. Temperature:25 °C.
Density and/or relative density:	1.28 g/cm3. Temperature:20 °C.
Relative vapour density:	3.79 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Reacts with strong oxidants, ammonia and amino compounds. This generates fire and explosion hazard.

Chemical stability

Hygroscopic

Possibility of hazardous reactions

Combustible when exposed to heat or flameAs a result of flow, agitation, etc., electrostatic charges can be generated.RESORCINOL is a weak organic acid. Incompatible with acetanilide, albumin, alkalis, antipyrine, camphor, iron salts, menthol, spirit nitrous ether, and urethane. Can react with oxidizing materials (NTP, 1992). Has a potentially explosive reaction with concentrated nitric acid [Lewis]. Turns pink on contact with iron.

Conditions to avoid

no data available

Incompatible materials

Can react with oxidizing materials

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male/female) - 510 mg/kg bw.

Inhalation: LC0 - rat (female) - > 7 800 mg/m3 air.

Dermal: LD50 - rabbit (male) - 2 830 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: No epidemiological data relevant to the carcinogenicity of resorcinol were available. There is inadequate evidence in experimental animals for the carcinogenicity of resorcinol. Overall evaluation: Resorcinol is not classifiable as to its carcinogenicity to humans (Group 3).

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the blood. This may result in the formation of methaemoglobin. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Repeated or prolonged contact may cause skin sensitization in rare cases.

Aspiration hazard

A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Pimephales promelas - 29.5 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: LC50 - Daphnia magna - 1 mg/L - 48 h.

Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - > 97 mg/L - 72 h.

Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - 79 mg/L - 3 h.

Persistence and degradability

AEROBIC: Resorcinol, present at 100 mg/L, reached 100% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(1,-3). Complete degradation of resorcinol occurred in 8 days (as determined by a 100% UV absorbancy loss) in a mineral salts medium using a silt loam soil inocula(4). A 5-day 61% theoretical BOD was measured using a sewage inocula(5). A 95% degradation was observed over a 0.4-day incubation period using a Warburg respirometer and an acclimated activated sludge inocula(6). A 6-day 21% theoretical BOD was observed using a Warburg respirometer and an activated sludge acclimated to aniline(7). A 12-hr theoretical BOD of 33-39% was observed using a Warburg respirometer and activated sludge acclimated to either phenol, catechol, or benzoic acid(8). A 5-day COD removal of 90% was measured in an activated sludge

system(9). The half-life of resorcinol in an aerobic screening test ranged from 0.16 to 0.24 days using activated sludge acclimated to cresols(10). Half-lives of 0.5 and 4.5 hours were determined for initial concentrations of 20 and 120 ppm resorcinol, respectively, in a treatment plant simulation study over a 1-hr incubation period using inoculum from a coke wastewater treatment plant(11). Degradation of 95% in 1 day and 90% in 8 days was observed in a biological treatment simulation using activated sludge and initial concns of 138 and 500 ppm, respectively(12). Using a Warburg respirometer and a mixed-culture of bacteria adapted to phenol, 95% of initial resorcinol was degraded in 1 to 2 days(13). Resorcinol, present at 2 mg/L, reached 68.6% of its theoretical BOD in 5 days, using 150 mL of river water in the river die-away test. The source of river water inoculum was the Songhua River, Jilan Province, China, which is contaminated with substituted benzenes(14).

Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for resorcinol(SRC), using a log Kow of 0.80(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc of resorcinol in a clay loam soil from the Michigan State University Soils Research Farm was measured to be 10.36(1). According to a classification scheme(2), this estimated Koc value suggests that resorcinol is expected to have very high mobility in soil. The pKa1 of resorcinol is 9.30(3), indicating that this compound will exist partially in the anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(4).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2876 (For reference only, please check.)
IMDG: UN2876 (For reference only, please check.)
IATA: UN2876 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: RESORCINOL (For reference only, please check.)
IMDG: RESORCINOL (For reference only, please check.)
IATA: RESORCINOL (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

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

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

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

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

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

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Depending on the degree of exposure, periodic medical examination is indicated.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.Do NOT take working clothes home.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our 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. We as supplier shall not be held liable for any