HEBEI YANXI CHEMICAL CO.,LTD
NO.113 SOUTH PINGAN STREET,SHIJIAZHUANG, HEBEI PROVINCE

MATERIAL SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0
Creation Date: Aug 10, 2017
Revision Date: Aug 10, 2017

1.Identification

1.1GHS Product identifier

Product name	resorcinol

1.2Other means of identification

Product number	-
Other names	1,3-diethynylenebenzene

1.3Recommended use of the chemical and restrictions on use

Identified uses	For industry use only. Food additives -> Flavoring Agents
Uses advised against	no data available

1.4Supplier's details

Company	XiXisys.com
Address	XiXisys.com
Telephone	XiXisys.com
Fax	XiXisys.com

1.5Emergency phone number

Emergency phone number	-
Service hours	Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2.Hazard identification

2.1Classification of the substance or mixture

Acute toxicity - Oral, Category 4

Skin irritation, Category 2

Eye irritation, Category 2

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

2.2GHS 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.
	P273 Avoid release to the environment.
Response	P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/…if you feel unwell.
	P330 Rinse mouth.
	P302+P352 IF ON SKIN: Wash with plenty of water/...
	P321 Specific treatment (see ... on this label).
	P332+P313 If skin irritation occurs: Get medical advice/attention.
	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.
	P337+P313 If eye irritation persists: Get medical advice/attention.
	P391 Collect spillage.
Storage	none
Disposal	P501 Dispose of contents/container to ...

2.3Other hazards which do not result in classification

none

3.Composition/information on ingredients

3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
resorcinol	resorcinol	108-46-3	none	100%

4.First-aid measures

4.1Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

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

In case of skin contact

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

In case of eye contact

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

If swallowed

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

4.2Most 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)

4.3Indication 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/

5.Fire-fighting measures

5.1Extinguishing media

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.

5.2Specific hazards arising from the chemical

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

5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures

6.1Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2Environmental 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.

6.3Methods and materials for containment and cleaning up

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

7.Handling and storage

7.1Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2Conditions 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.

8.Exposure controls/personal protection

8.1Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hour Time-Weighted Average: 10 ppm (45 mg/cu m).

Recommended Exposure Limit: Short-Term Exposure Limit: 20 ppm (90 mg/cu m).

Biological limit values

no data available

8.2Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9.Physical and chemical properties

Physical state	crystals or powder
Colour	White needle-like crystals
Odour	Faint, characteristic odor
Melting point/ freezing point	285° C(lit.)
Boiling point or initial boiling point and boiling range	115° C/14mmHg(lit.)
Flammability	Class IIIB Combustible Liquid: Fl.P. at or above

	93.33° C., but may be difficult to ignite.Combustible.
Lower and upper explosion limit / flammability limit	Lower flammable limit: 1.4% at 392 deg F (200° C) by volume; Upper flammable limit: 1.28% by volume
Flash point	88° C(lit.)
Auto-ignition temperature	607.22° C (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water:140 g/100 mLSolubility:Water solubility: 140 g/100 m
Partition coefficient n-octanol/water (log value)	log Kow = 0.80
Vapour pressure	0.00229mmHg at 25° C
Density and/or relative density	1.27
Relative vapour density	3.79 (Relative to Air)
Particle characteristics	no data available

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

Hygroscopic

10.3Possibility 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 . Has a potentially explosive reaction with concentrated nitric acid [Lewis]. Turns pink on contact with iron.

10.4Conditions to avoid

no data available

10.5Incompatible materials

Can react with oxidizing materials

10.6Hazardous decomposition products

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

11.Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 301 mg/kg
- Inhalation: no data available
- Dermal: no data available

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

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12.Ecological information

12.1Toxicity

- Toxicity to fish: LC50; Species: Pimephales promelas (fathead minnow); Concentration: 88.6 mg/L for 24 hr /Conditions of bioassay not specified

- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2Persistence 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).

12.3Bioaccumulative 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).

12.4Mobility 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).

12.5Other adverse effects

no data available

13.Disposal considerations

13.1Disposal 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.

14.Transport information

14.1UN Number

ADR/RID: UN2876 IMDG: UN2876 IATA: UN2876

14.2UN Proper Shipping Name

ADR/RID: RESORCINOL
IMDG: RESORCINOL
IATA: RESORCINOL

14.3Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4Packing group, if applicable

ADR/RID: III IMDG: III IATA: III

14.5Environmental hazards

ADR/RID: yes IMDG: yes IATA: yes

14.6Special precautions for user

no data available

14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15.Regulatory information

15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number

resorcinol	resorcinol	108-46-3	none
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

16.Other information

Information on revision

Creation Date Aug 10, 2017
Revision Date Aug 10, 2017

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/

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 damage resulting from handling or from contact with the above product.