

## Chemical Safety Data Sheet MSDS / SDS

## Benzenesulphonic acid SDS

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

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

Product name: Benzenesulphonic acid

CAS: 98-11-3

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

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**SECTION 2: Hazards identification****Classification of the substance or mixture**Acute toxicity - Category 4, Oral  
Skin corrosion, Sub-category 1B

## GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

### Precautionary statement(s)

#### Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

#### Response

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### Storage

P405 Store locked up.

#### 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:	Benzenesulphonic acid
Common names and synonyms:	Benzenesulphonic acid
CAS number:	98-11-3
EC number:	202-638-7
Concentration:	100%

### SECTION 4: First aid measures

#### Description of necessary first-aid measures

##### If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

##### Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. 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. Give one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention .

#### Most important symptoms/effects, acute and delayed

SYMPTOMS: This material causes corrosion of tissues on contact. Coughing burning of eyes and nose and red sores may result.

ACUTE/CHRONIC HAZARDS: This chemical is a strong irritant and is corrosive to skin, eyes and mucous membranes. (NTP, 1992)

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

**Absorption, Distribution and Excretion**

Probably excreted as benzenesulfonic acid. from table

**SECTION 5: Firefighting measures**

**Suitable extinguishing media**

If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use dry chemical, dry sand, or carbon dioxide. Do not use water on material itself. If large quantities of combustible are involved, use water in flooding quantities as spray and fog.

**Specific hazards arising from the chemical**

Flash point data for this chemical are not available, however it is probably combustible. (NTP, 1992)

**Special protective actions for fire-fighters**

Use water in large amounts, powder, alcohol-resistant foam, carbon dioxide.

**SECTION 6: Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Personal protection: face shield, chemical protection suit and particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered plastic containers. Wash away remainder with plenty of water.

**Environmental precautions**

Personal protection: face shield, chemical protection suit and particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered plastic containers. Wash away remainder with plenty of water.

**Methods and materials for containment and cleaning up**

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

NO open flames. 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 oxidants, bases, metals and food and feedstuffs. Dry. Well closed. Ventilation along the floor.

## **SECTION 8: Exposure controls/personal protection**

### **Control parameters**

#### **Occupational Exposure limit values**

no data available

#### **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 face shield or eye protection in combination with breathing protection.

#### **Skin protection**

Protective gloves. Protective clothing.

#### **Respiratory protection**

Use ventilation (not if powder), local exhaust or breathing protection.

## Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid. Paste.
Colour:	Brownish.
Odour:	no data available
Melting point/freezing point:	28 °C. Remarks: +/- 1 C.
Boiling point or initial boiling point and boiling range:	188.2 °C. Remarks: +/- 1.0%.
Flammability:	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	Ca. 127 °C.
Auto-ignition temperature:	> 467 °C. Atm. press.:Ca. 1 atm.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	kinematic viscosity (in mm <sup>2</sup> /s) = Ca. 13.91. Temperature:50.0°C. Remarks: +/- 0.5%.
Solubility:	5 to 10 mg/mL at 72° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = -0.4. Temperature:25 °C.
Vapour pressure:	Ca. 16.7 Pa. Temperature:>= 20 °C.

Density and/or relative density:	1.372.
Relative vapour density:	(air = 1): 5.5
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating. This produces toxic and corrosive fumes. The solution in water is a strong acid. It reacts violently with bases and is corrosive. Reacts violently with oxidants. Attacks many metals. This produces flammable/explosive gas (hydrogen - see ICSC 0001).

### Chemical stability

no data available

### Possibility of hazardous reactions

BENZENESULFONIC ACID reacts with bases and many organic compounds. (NTP, 1992)

### Conditions to avoid

no data available

### Incompatible materials

no data available

### Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

**Acute toxicity**

Oral: LD50 - rat (male/female) - ca. 1 410 mg/kg bw.

Inhalation: LC50 - rat - >= 50 - ca. 100 mg.

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**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion.

**STOT-repeated exposure**

no data available

**Aspiration hazard**



A harmful concentration of airborne particles can be reached quickly on spraying.

## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: LC50 - *Leuciscus idus melanotus* - > 500 mg/L - 96 h. Remarks:>325 mg/L based on active ingredient.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - > 103 mg/L - 48 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 70 mg/L - 72 h.

Toxicity to microorganisms: EC10 - activated sludge of a predominantly domestic sewage - 240 mg/L - 3 h. Remarks:Respiration rate.

### Persistence and degradability

Decomposition of benzenesulfonic acid took 16 days by a soil microflora inoculum in mineral salts medium(1). Sodium benzenesulfonate had a 5-day theoretical BOD (at 20 deg C) of 2.6, 74.5, and 38.8% in sewage seed, acclimated activated sludge seed, and by the Warburg technique with acclimated activated sludge, respectively(2). A biodegradation study using 100 mg/l benzenesulfonic acid, consumed 62, 58, and 344 ul oxygen in an endogenous control, benzenesulfonic acid adapted cells, and benzenesulfonic acid and phenol adapted cells, respectively, in 230 minutes(3). In a 2 week closed bottle study, with 100 mg/l benzenesulfonic acid and 30 mg/l sludge, benzenesulfonic acid gave a theoretical BOD of 87%(4). Benzenesulfonic acid utilized 10.7 mg of TOC/g of mixed liquor volatile suspended solids per hour in acclimated activated sludge, indicating that the activated sludge possessed the necessary catabolic enzymes required for degradation(5).

### Bioaccumulative potential

Based upon an estimated a Log Kow of -2.25(1), the BCF of benzenesulfonic acid can be estimated to be approximately 1.15 from a regression-derived equation(2). This estimated BCF value suggests that bioconcentration of benzenesulfonic acid in aquatic organisms is not expected to be an important fate process(SRC).

### Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1,SRC), the Koc for benzenesulfonic acid can be estimated to be about 12(SRC). The Koc for benzenesulfonic acid can also be estimated to be about 1.4 based on an estimated log Kow of -2.25(3) and a regression derived equation(2). According to a suggested classification scheme(4), these estimated Koc values suggest that benzenesulfonic acid has very high soil mobility.

### 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: UN2583 (For reference only, please check.)

IMDG: UN2583 (For reference only, please check.)

IATA: UN2583 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: ALKYLsulphonic acids, solid or Arylsulphonic acids, solid with more than 5% free sulphuric acid (For reference only, please check.)

IMDG: ALKYLsulphonic acids, solid or Arylsulphonic acids, solid with more than 5% free sulphuric acid (For reference only, please check.)

IATA: ALKYLsulphonic acids, solid or Arylsulphonic acids, solid with more than 5% free sulphuric acid (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.)

IMDG: 8 (For reference only, please check.)

IATA: 8 (For reference only, please check.)

**Packing group, if applicable**

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

**Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

**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**

Not 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](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/>

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