

SAFETY DATA SHEET

Creation Date 07-Mar-2012

Revision Date 07-Feb-2024

Revision Number 2

1. Identification

Product Name Benzenesulfonyl chloride, AR

Cat No. : W00147

CAS No 98-09-9
Synonyms Benzene sulphonyl chloride; benzenesulfonic acid chloride.

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|--------------|
| Acute oral toxicity | Category 4 |
| Skin Corrosion/Irritation | Category 1 A |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |

Label Elements

Signal Word

Danger

Hazard Statements

Harmful if swallowed

Causes severe skin burns and eye damage
May cause respiratory irritation

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes

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

Ingestion

Rinse mouth
Do NOT induce vomiting

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

3. Composition/Information on Ingredients

| Component | CAS No | Weight % |
|--------------------------|---------|----------|
| Benzenesulfonyl chloride | 98-09-9 | <100 |

4. First-aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

Inhalation

If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration

| | |
|--|---|
| | with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately. |
| Ingestion | Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately. |
| Most important symptoms and effects | Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|--|
| Suitable Extinguishing Media | Water spray. Carbon dioxide (CO ₂). Dry chemical. Chemical foam. CO ₂ , dry chemical, dry sand, alcohol-resistant foam. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | 128 °C / 262.4 °F |
| Method - | No information available |
| Autoignition Temperature | 450 °C / 842 °F |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Contact with water liberates toxic gas.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Sulfur oxides. Hydrogen chloride gas.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health
3

Flammability
0

Instability
0

Physical hazards
W

6. Accidental release measures

| | |
|---|---|
| Personal Precautions | Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Environmental Precautions | Should not be released into the environment. |
| Methods for Containment and Clean Up | Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Do not expose spill to water. |

7. Handling and storage

| | |
|-----------------|--|
| Handling | Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. Handle under an inert atmosphere. |
|-----------------|--|

Storage. Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Corrosives area. Keep under nitrogen. Keep away from water or moist air. Protect from moisture. Incompatible Materials. Strong oxidizing agents. Strong bases.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Particulates filter conforming to EN 143. Acid gases filter. Type E. Yellow. conforming to EN14387.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

| | |
|--|---------------------------------|
| Physical State | Liquid |
| Appearance | Colorless |
| Odor | pungent |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | 14.5 °C / 58.1 °F |
| Boiling Point/Range | 251 - 252 °C / 483.8 - 485.6 °F |
| Flash Point | 128 °C / 262.4 °F |
| Evaporation Rate | No information available |
| Flammability (solid,gas) | Not applicable |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | 6 mbar @ 20 °C |
| Vapor Density | 6.1 |
| Specific Gravity | 1.384 |
| Solubility | Reacts violently with water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | 450 °C / 842 °F |
| Decomposition Temperature | > 251°C |
| Viscosity | No information available |
| Molecular Formula | C6 H5 Cl O2 S |
| Molecular Weight | 176.62 |

10. Stability and reactivity

| | |
|---|---|
| Reactive Hazard | Yes |
| Stability | Moisture sensitive. |
| Conditions to Avoid | Incompatible products. Exposure to moist air or water. Exposure to moisture. |
| Incompatible Materials | Strong oxidizing agents, Strong bases |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂), Sulfur oxides, Hydrogen chloride gas |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--------------------------|---------------------------|-------------|-----------------|
| Benzenesulfonyl chloride | LD50 = 1960 mg/kg (Rat) | Not listed | Not listed |

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|--------------------------|---------|------------|------------|------------|------------|------------|
| Benzenesulfonyl chloride | 98-09-9 | Not listed | Not listed | Not listed | Not listed | Not listed |

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Reacts with water so no ecotoxicity data for the substance is available.

| | |
|--------------------------------------|--|
| Persistence and Degradability | Persistence is unlikely |
| Bioaccumulation/ Accumulation | No information available. |
| Mobility | Is not likely mobile in the environment. |

| Component | log Pow |
|--------------------------|---------|
| Benzenesulfonyl chloride | 3.39 |

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

| Component | RCRA - U Series Wastes | RCRA - P Series Wastes |
|------------------------------------|------------------------|------------------------|
| Benzenesulfonyl chloride - 98-09-9 | U020 | - |

14. Transport information

DOT

| | |
|---------------|--------|
| UN-No | UN2225 |
| Hazard Class | 8 |
| Packing Group | III |

TDG

| | |
|---------------|--------|
| UN-No | UN2225 |
| Hazard Class | 8 |
| Packing Group | III |

IATA

| | |
|----------------------|---------------------------|
| UN-No | UN2225 |
| Proper Shipping Name | BENZENESULPHONYL CHLORIDE |
| Hazard Class | 8 |
| Packing Group | III |

IMDG/IMO

| | |
|----------------------|---------------------------|
| UN-No | UN2225 |
| Proper Shipping Name | BENZENESULPHONYL CHLORIDE |
| Hazard Class | 8 |
| Packing Group | III |

15. Regulatory information

United States of America Inventory

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|--------------------------|---------|------|---|-----------------------------|
| Benzenesulfonyl chloride | 98-09-9 | X | ACTIVE | - |

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)

Not applicable

TSCA 12(b) - Notices of Export

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|--------------------------|---------|-----|------|-----------|-------|------|------|------|-------|----------|
| Benzenesulfonyl chloride | 98-09-9 | X | - | 202-636-6 | X | X | X | X | X | KE-02638 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

| Component | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|--------------------------|--------------------------|---|-------------------------------|
| Benzenesulfonyl chloride | 100 lb | - | 100 lb 45.4 kg |

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|--------------------------|---------------|------------|--------------|----------|--------------|
| Benzenesulfonyl chloride | X | X | X | - | - |

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH Not applicable

| Component | CAS No | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous | REACH Regulation (EC 1907/2006) article 59 - Candidate List of |
|-----------|--------|---|--|--|
|-----------|--------|---|--|--|

| | | | Substances | Substances of Very High Concern (SVHC) |
|--------------------------|---------|---|------------|--|
| Benzenesulfonyl chloride | 98-09-9 | - | - | - |

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

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|--------------------------|---------|----------|------------------------------|---------------------------|--|
| Benzenesulfonyl chloride | 98-09-9 | Listed | Not applicable | Not applicable | Not applicable |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|--------------------------|---------|---|--|----------------------------|------------------------------------|
| Benzenesulfonyl chloride | 98-09-9 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other information

Prepared By

Health, Safety and Environmental Department
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 www.thermofisher.com

Creation Date

07-Mar-2012

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07-Feb-2024

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07-Feb-2024

Revision Summary

New emergency telephone response service provider.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS