



MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification

1.1 Product identifiers

Product Name : Tert-Butyl bromoacetate
Cat No.: AC154340000; AC154340100; AC154340500; AC154342500
CAS No. : 5292-43-3

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

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

1.3 Details of the supplier of the safety data sheet

Company : Krishna Solvechem Limited.
B/503, Shayog, S. V. Road,
Kandivali (West), Mumbai – 400067. India.
Telephone : +91-22-6123 0222
Email : exports@kscl.co.in

1.4 Emergency telephone number

Emergency Phone : +91-8657457330

SECTION 2: Hazards identification

2.1 Classification

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

| | |
|--|--------------|
| Flammable liquids | (Category 3) |
| Skin Corrosion/Irritation | (Category 2) |
| Serious Eye Damage/Eye Irritation | (Category 2) |
| Specific target organ toxicity (single exposure) | (Category 3) |
| Target Organs - Respiratory system. | |

2.2 Label elements

Pictogram :

Signal word warning

Hazard statement (s) Flammable liquid and vapor



Precautionary statement (s)

Prevention

Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation

Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces – no smoking
Keep container tightly closed.
Ground/bond container and receiving equipment
Use only non-sparking tools.
Take precautionary measures against static discharge
Keep cool.

Inhalation :

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician if you feel unwell

IF ON SKIN (or hair):

If skin irritation occurs: Get medical advice/attention
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 If eye irritation persists: Get medical advice/attention

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

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 |

SECTION 3: Composition / information on ingredients

3.1

| Component | CAS-No | Weight % |
|--|-----------|----------|
| Acitic acid, bromo-, 1,1-dimethylethyl ester | 5292-43-3 | >95 |

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|--|---|
| If inhalation : | Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. |
| In case of skin contact : | Wash off immediately with soap and plenty of water while Removing all contaminated clothes and shoes. Get medical attention |
| In case of eye contact : | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention. |
| Ingestion : | Clean mouth with water. Get medical attention. |
| 4.2 Most important symptoms and effects : | Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. |
| 4.3 Notes to Physician : | Treat symptomatically |

SECTION 5: Firefighting effects

5.1 Extinguishing media

| | |
|--|--|
| Suitable extinguishing media : | Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers |
| Unsuitable Extinguishing Media: : | No information available |
| 5.2 Flash Point : | 49 °C / 120.2 °F |
| Method : | No information available |



| | |
|---|--|
| Autoignition Temperature: | No information available |
| 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 : | Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back |
| Hazardous Combustion Products : | Carbon monoxide (CO). Carbon dioxide (CO ₂). Hydrogen halides. |

| | | | | |
|---|--|---------------------|--------------------|-------------------------|
| 5.4 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. | | | |
| <u>NFPA:</u> | Health | Flammability | Instability | Physical hazards |
| | 2 | 2 | 0 | N/A |

SECTION 6: Accidental release measures

| |
|---|
| 6.1 Personal precautions, protective equipment and emergency procedures |
| Remove all sources of ignition. Take precautionary measures against static discharges |
| 6.2 Environmental precautions |
| See Section 12 for additional Ecological information. |
| 6.3 Methods and materials for containment and cleaning up |
| Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not let this chemical enter the environment. |

SECTION 7: Handling and storage

| |
|---|
| 7.1 Precautions for safe handling |
| Avoid contact with skin and eyes. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. |



7.2 Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame. Flammables area. Keep container tightly closed in a dry and well-ventilated place. Stable at Ambient temperature.

SECTION 8: Exposure controls/personal protection

8.1 Exposure Guidelines

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

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion proof electrical/ventilating/lighting equipment.

8.2 Exposure controls

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 protection and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

No protective equipment is needed under normal use conditions

Hygiene Measures

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|-----------------------------------|--------------------------|
| a) Appearance | Form: liquid, yellow |
| b) Odour | pungent |
| c) Odour Threshold | No information available |
| d) pH | No information available |
| e) Melting point / freezing point | No data available |
| f) Initial boiling point and | 50 °C / 122 °F @ 10 mmHg |



| | |
|--|--|
| boiling range | |
| g) Flash point | 49 °C / 120.2 °F |
| h) Evaporation rate | Not applicable |
| i) Flammability (solid, gas) | Not applicable |
| j) Upper/lower flammability or explosive limits | No data available No data available |
| k) Vapour pressure | No information available |
| l) Vapour density | 6.73 |
| m) Specific Gravity | 1.338 |
| n) Solubility | No information available |
| o) Partition coefficient: n octanol/water | No data available |
| p) Auto-ignition temperature | No information available |
| q) Decomposition temperature | No information available |
| r) Viscosity | No information available |
| s) Molecular formula | C6 H11 Br O2 |
| t) Molecular Weight | 195.06 |

SECTION 10: Stability and Reactivity

| | |
|--|--|
| 10.1 Reactive Hazard : | None known, based on information available |
| 10.2 Chemical stability : | Stable under normal conditions. |
| 10.3 Possibility of hazardous reactions : | None under normal processing. |
| 10.4 Conditions to avoid : | keep away from open flames, hot surfaces and sources of ignition. Incompatible products. |
| 10.5 Incompatible materials: | Strong oxidizing agents, Strong bases |
| 10.6 Hazardous decomposition products : | Carbon monoxide (CO), Carbon dioxide (CO ₂), hydrogen halides |
| 10.7 Hazardous Polymerization | Hazardous polymerization does not occur |



SECTION 11: Toxicological information

11.1

Information on toxicological effects

Acute toxicity:

Product Information:

Toxicologically Synergistic

No information available

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--|------------|---------------------------|-----------------|
| Acetic acid, bromo-, 1,1-dimethylethyl ester | Not listed | LD50 > 2000 mg/kg (Rat) | Not listed |

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 |
|--|-----------|------------|------------|------------|------------|------------|
| Acetic acid, bromo-, 1,1-dimethylethyl ester | 5292-43-3 | 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: symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Endocrine Disruptor Information : No information available

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



SECTION 12: Ecological information

| | |
|--|---|
| 12.1 Ecotoxicity: | Do not empty into drains |
| 12.2 Persistence and degradability: | Persistence is unlikely based on information available |
| Bioaccumulation/ Accumulation | No information available |
| 12.3 Mobility: | Will likely be mobile in the environment due to its volatility. |

SECTION 13: Disposal considerations

13.1 Waste treatment 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.

SECTION 14: Transport information

| | | | | |
|--|--------------------------|----------|-----------|-----------|
| 14.1 UN number : | | | | |
| DOT: UN1933 | TDG: UN1933 | | | |
| IATA: UN1933 | IMDG: UN1933 | | | |
| 14.2 UN proper shipping name | | | | |
| DOT : | Flammable liquid, n.o.s. | | | |
| TDG : | Flammable liquid, n.o.s. | | | |
| IMDG : | Flammable liquid, n.o.s. | | | |
| IATA : | FLAMMABLE LIQUID, N.O.S. | | | |
| 14.3 Transport hazard class(es) | DOT: 3 | TDG: 3 | IMDG: 3 | IATA: 3 |
| 14.4 Packaging group: | DOT: III | TDG: III | IMDG: III | IATA: III |

SECTION 15: Regulatory information

15.1 United states of America Inventory:

| Component | CAS-No | TSCA | TSCA Inventory notification Active/Inactive | TSCA - EPA Regulatory Flags |
|---|-----------|------|---|-----------------------------|
| Acetic acid, bromo-,1,1-dimethylethyl ester | 5292-43-2 | X | ACTIVE | - |

Legend:



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

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories:

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

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|--|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Acetic acid, bromo-, 1,1-dimethylethyl ester | 5292-43-3 | - | X | 226-133-6 | X | - | X | - | - | KE-03612 |

U.S. Federal Regulations

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

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

15.2 U.S. State Right-to-Know Regulations:

Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N



U.S. Department of Homeland Security - This product does not contain the any DHS Chemicals.

Other International Regulations

Mexico – Grade No information available

Authorization/Restrictions according to EU REACH

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) |
|--|-----------|---|--|----------------------------|--|
| Acetic acid, bromo-, 1,1-dimethylethyl ester | 5292-43-3 | Not applicable | Not applicable | Not applicable | Not applicable |
| 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) |
| Acetic acid, bromo-, 1,1-dimethylethyl ester | 5292-43-3 | Not applicable | Not applicable | Not applicable | Not applicable |

SECTION 16: Other information

16.1 Prepared By: Regulatory affairs
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Revision Summary: This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 C FR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

16.2 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 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.