Material Safety Data Sheet
According to OSHA and ANSI

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

Product identifier

Product name: tert-Butyl bromide (stabilized with potassium carbonate)
Stock number: A13727, L07791
CAS Number: 507-19-7
EINECS Number: 208-065-9

Relevant identified uses of the substance or mixture and uses advised against.
Sector of use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alpha.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2Hazards identification

Classification of the substance or mixture

GHS02 Flame

H225 Highly flammable liquid and vapour.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

F; Highly flammable

R11: Highly flammable.

Label elements

Labelling according to EU guidelines:

Code letter and hazard designation of product:
F Highly flammable

Risk phrases:
11 Highly flammable.

Safety phrases:
9 Keep container in a well-ventilated place.
16 Keep away from sources of ignition - No smoking.
31 Take precautionary measures against static discharges.

Hazard description:

WINLIS classification

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances
(CAS#) Description:
tert-Butyl bromide (CAS# 507-19-7), 100%

Identification number(s):
EINECS Number: 208-065-9

Impurities and stabilising additives: Potassium carbonate (CAS# 584-08-7)

(Contd. on page 2)
4 First aid measures

Description of first aid measures
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact
Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Firefighting measures

Extinguishing media
Suitable extinguishing agents
Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used
for cooling exposed containers.

Special hazardous properties of the substance or mixture
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Hydrogen bromide (HBr)

Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources

Environmental precautions
Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleanup
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders,
sawdust).
Ensure adequate ventilation.
Keep away from ignition sources.

Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

Information about protection against explosions and fires
Keep ignition sources away.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Conditions for safe storage, including any incompatible materials
Storage
Requirements to be met by storesrooms and receptacles: Store in a cool location.
Information about storage in one common storage facility:
Store away from oxidizing agents.
Store away from strong bases.

Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
 Keep away from foodstuffs, beverages and feed.
 Remove all soiled and contaminated clothing immediately.
 Wash hands before breaks and at the end of work.
 Breathing equipment: Use suitable respirator when high concentrations are present.
 Protection of hands: Impervious gloves
 Eye protection: Safety glasses
 Full face protection
 Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information
Appearance:
Form: Liquid
Color: Colorless
Odor: Not determined
Odour threshold: Not determined.

pH-value: Not determined.

Change in condition
Melting point/Melting range: Not determined
Boiling point/Boiling range: 74-76°C (165-169 °F)
Sublimation temperature / start: Not determined

Flash point: 18°C (64 °F)

Flammability (solid, gaseous) Not applicable.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto igniting: Not determined.

Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure: Not determined

Density at 20°C (68 °F): 1.2125 g/cm³ (10.118 lbs/gal)
Relative density: Not determined.
Vapour density: Not determined.
Evaporation rate: Not determined.

Solubility in / Miscibility with
Water: Not miscible or difficult to mix

Segregation coefficient (n-octanol/water): Not determined.

Viscosity:
dynamic: Not determined.
kinematic: Not determined.

Other information: No further relevant information available.

10 Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
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Possibility of hazardous reactions: No dangerous reactions known.
Incompatible materials:
Oxidizing agents
Bases
Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Hydrogen bromide

11 Toxicological information
Information on toxicological effects
Acute toxicity:
Primary irritant effect:
On the skin: Irritant to skin and mucous membranes.
On the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Subacute to chronic toxicity:
Other than potential irritation (see above), no information on illness or injury to humans from acute or chronic exposure to this product is available.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information
Toxicity
Acute aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Results of PBT and vPvB assessment:
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects: No further relevant information available.

13 Disposal considerations
Waste treatment methods
Recommendation: Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information
DOT regulations:

| Hazard class: | 3 |
| Identification number: | UN2342 |
| Packing group: | II |
| Proper shipping name (technical name): | BROMOMETHYLPROPANES |
| Label: | 3 |
Material Safety Data Sheet  
According to OSHA and ANSI

Product name: tert-Butyl bromide (stabilized with potassium carbonate)

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<tr>
<th>Land transport ADR/RID (cross-border)</th>
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<tr>
<td><strong>ADR/RID class:</strong></td>
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<tr>
<td><strong>Danger code (Kemler):</strong></td>
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<td><strong>UN-Number:</strong></td>
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<td><strong>Packaging group:</strong></td>
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<td><strong>UN proper shipping name:</strong></td>
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<td><strong>Marine pollutant:</strong></td>
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<td><strong>Segregation groups:</strong></td>
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<th>Air transport ICAO-TI and IATA-DGR:</th>
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**UN *Model Regulation*: UN2342, BROMOMETHYLPROPANES, 3, II

**Special precautions for user: Warning:** Flammable liquids

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.**

### 15 Regulatory information

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

**Product related hazard informations:**

**Hazard symbols:**

F Highly flammable

**Risk phrases:**

11 Highly flammable.

**Safety phrases:**

9 Keep container in a well-ventilated place.
16 Keep away from sources of ignition - No smoking.
33 Take precautionary measures against static discharges.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical sub stance inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

**Information about limitation of use:** For use only by technically qualified individuals.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.
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Product name: tert-Butyl bromide (stabilized with potassium carbonate)

Department issuing MSDS: Health, Safety and Environmental Department.
Contact:
Zachariah C. Holt
Global EHS Manager
Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (Division of the American Chemical Society)
WHMIS: Workplace Hazardous Materials Information System (Canada)

USA