

Safety Data Sheet

according to 1907/2006/EC, Article 31

Revision: 24.08.2010

Printing date 24.08.2010

1 Identification of substance

Product details

Trade name

4-Bromo-3,3,4,4-tetrafluoro-1-butene

Stock number:

L18492

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240

2 Hazards identification

Hazard designation:



Xi Irritant

Information pertaining to particular dangers
for man and environment
GHS label elements

R 36/37 Irritating to eyes and respiratory system.



Warning

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

Prevention:

Response:

3 Composition/information on ingredients

Chemical characterization:

4-Bromo-3,3,4,4-tetrafluoro-1-butene (CAS# 18599-22-9)

Designation: (CAS#)

Identification number(s):

242-440-8

EINECS Number:

4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.

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

After swallowing

Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Special hazards caused by the material, its
products of combustion or flue gases:

Can be released in case of fire:

Carbon monoxide and carbon dioxide

Hydrogen bromide (HBr)

Hydrogen fluoride (HF)

Wear self-contained breathing apparatus.

Wear full protective suit.

Protective equipment:

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

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

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Keep away from ignition sources.

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Additional information:

7 Handling and storage

Handling

Information for safe handling:

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against
explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and
containers:

Store in cool location.

Information about storage in one common

storage facility:

Store away from oxidizing agents.

Further information about storage
conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and 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.

Components with critical values that require
monitoring at the workplace:

Not required.

Additional information:

No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

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Breathing equipment:**Protection of hands:****Material of gloves****Penetration time of glove material****Eye protection:****Body protection:**

Wash hands during breaks and at the end of the work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Use breathing protection in case of insufficient ventilation.

Use breathing protection with high concentrations.

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Impervious gloves

Not determined

Safety glasses

Face protection

Protective work clothing.

9 Physical and chemical properties:**General Information****Form:**

Liquid

Colour:

Colourless

Smell:

Not determined

Change in condition**Melting point/Melting range:**

Not determined

Boiling point/Boiling range:

55-57°C

Sublimation temperature / start:

Not determined

Flash point:

Not applicable

Ignition temperature:

Not determined

Decomposition temperature:

Not determined

Danger of explosion:

Product is not explosive.

Critical values for explosion:**Lower:**

Not determined

Upper:

Not determined

Steam pressure:

Not determined

Density at 20°C1.627 g/cm³**Solubility in / Miscibility with****Water:**

Not miscible or difficult to mix

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Alkali metals

Alkaline earth metals

No dangerous reactions known

Carbon monoxide and carbon dioxide

Hydrogen bromide

Hydrogen fluoride

Dangerous reactions:**Dangerous products of decomposition:****11 Toxicological information****Acute toxicity:****Primary irritant effect:****on the skin:**

May cause irritation

on the eye:

Irritant effect.

Sensitization:

No sensitizing effect known.

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:**Additional ecological information:****General notes:**

Generally not hazardous for water.

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

13 Disposal considerations**Product:****Recommendation**

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

Consult state, local or national regulations for proper disposal.

Uncleaned packagings:**Recommendation:**

Disposal must be made according to official regulations.

14 Transport information**Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)****ADR/RID-GGVS/E Class:**

None

Maritime transport IMDG/GGVSea:**IMDG/GGVSea Class:**

None

Marine pollutant:

No

Air transport ICAO-TI and IATA-DGR:**ICAO/IATA Class:**

None

Transport/Additional information:

Not dangerous according to the above specifications.

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15 Regulatory information**Designation according to EC guidelines:****Code letter and hazard designation of product:**

Xi Irritant

Risk phrases:

36/37 Irritating to eyes and respiratory system.

Safety phrases:

23 Do not breathe fumes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

National regulations**Information about limitation of use:**Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.**Water hazard class:**

Generally not hazardous for water.

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.

Department issuing data specification sheet: Health, Safety and Environmental Department.**Contact:** Zachariah Holt**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
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)

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