

Safety Data Sheet

according to UK REACH Regulation

Copper tetraMIBI tetrafluoroborate [Cu(MIBI)4]BF4

Revision date: 20.06.2022

Product code: 7211

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Copper tetraMIBI tetrafluoroborate [Cu(MIBI)4]BF4

Further trade names

Copper(1+),tetrakis[1-[isocyano-kappaC)-2-methoxy-2-methylpropane]-,(T-4),tetrafluoroborate(1-)

Synonyms:

Tetrakis (2-methoxy isobutyl isonitrile) Copper (I) tetrafluoroborate; Propane. 1-isocyano-2-methoxy-2-methyl-, copper complex; Cardio-Spect; [Cu(MIBI)4]BF4; Copper tetraMIBI tetrafluoroborate

CAS No: 103694-84-4

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Ligand for labelling with 99m Tc or 188 Re

1.3. Details of the supplier of the safety data sheet

| | | |
|-----------------|---|-------------------------------|
| Company name: | ABX advanced biochemical compounds | |
| | Biomedizinische Forschungsreagenzien GmbH | |
| Street: | Heinrich-Gläser-Straße 10-14 | |
| Place: | 01454 Radeberg | |
| Telephone: | +49 3528 4041 60 | Telefax: +49 3528 4041 65 |
| e-mail: | info@abx.de | |
| Contact person: | Dr. Christoph Meyer | Telephone: +49 3528 4041 8732 |
| e-mail: | meyer@abx.de | |
| Internet: | http://www.abx.de | |

1.4. Emergency telephone number:

+49 3528 4041 60

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Acute Tox. 3; H331

Acute Tox. 3; H311

Acute Tox. 3; H301

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation****Signal word:** Danger**Pictograms:****Hazard statements**

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

Precautionary statements

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

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

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P302+P352

IF ON SKIN: Wash with plenty of water.

P261

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

SECTION 3: Composition/information on ingredients**3.1. Substances****Chemical characterization**

Copper(1+),tetrakis[1-[isocyano-kappaC)-2-methoxy-2-methylpropane]-,(T-4),tetrafluoroborate(1-)

Sum formula:

C₂₄H₄₄CuN₄O₄ x BF₄

Molecular weight:

602.98

Hazardous components

| CAS No | Chemical name | | | Quantity |
|-------------|--|----------|----------|--------------|
| | EC No | Index No | REACH No | |
| | Classification (GB CLP Regulation) | | | |
| 103694-84-4 | Copper tetraMIBI tetrafluoroborate | | | 95 - < 100 % |
| | Acute Tox. 3, Acute Tox. 3, Acute Tox. 3; H331 H311 H301 | | | |

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity |
|-------------|-------|--|--------------|
| | | Specific Conc. Limits, M-factors and ATE | |
| 103694-84-4 | | Copper tetraMIBI tetrafluoroborate | 95 - < 100 % |
| | | inhalation: ATE = 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: ATE = 300 mg/kg; oral: LD50 = 123 mg/kg | |

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

First aider: Pay attention to self-protection!

After inhalation

Provide fresh air. In case of breathing difficulties administer oxygen. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

After contact with skin

After contact with skin, wash immediately with: Polyethylene glykol 400. Subsequently wash off with: Water. Remove contaminated clothing immediately and dispose off safely. Call a physician immediately.

After contact with eyes

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

After ingestion

Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Call a physician immediately.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**Foam. Extinguishing powder. Carbon dioxide (CO₂). Atomized water.**5.2. Special hazards arising from the substance or mixture**

In case of fire and/or explosion do not breathe fumes.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

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Additional information

Suppress gases/vapours/mists with water spray jet. Contaminated fire-fighting water must be collected separately. Do not allow to enter into surface water or drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Other information

Avoid dust formation. Wear personal protection equipment. Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear personal protection equipment. When using do not eat, drink, smoke, sniff. If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container dry. Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Keep container in a well-ventilated place.

storage temperature:

of °C: 2

up to °C: 8

Further information on storage conditions

Protect against: moisture. Light.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

Individual protection measures, such as personal protective equipment

Eye/face protection

Eye protection: Tightly sealed safety glasses.

Hand protection

Tested protective gloves are to be worn: Single-use gloves. NBR (Nitrile rubber).

Skin protection

Body protection: Lab apron. Chemical resistant safety shoes.

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SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state: solid
 Colour: whitish

Changes in the physical state

Melting point/freezing point: 102 °C

Water solubility: The study does not need to be conducted because the substance is known to be insoluble in water.

SECTION 10: Stability and reactivity**10.4. Conditions to avoid**

Light.

10.5. Incompatible materials

Water. Oxidizing agents, strong.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx). Toxic metal oxide smoke.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

Toxic. Acute toxicity, oral. Acute toxicity, inhalant. Acute toxicity, dermal.

| CAS No | Chemical name | | | | |
|-------------|------------------------------------|----------------|---------|--------|--------|
| | Exposure route | Dose | Species | Source | Method |
| 103694-84-4 | Copper tetraMIBI tetrafluoroborate | | | | |
| | oral | LD50 123 mg/kg | Rat | | |
| | dermal | ATE 300 mg/kg | | | |
| | inhalation vapour | ATE 3 mg/l | | | |
| | inhalation dust/mist | ATE 0,5 mg/l | | | |

Additional information on tests

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

SECTION 12: Ecological information**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of UK REACH.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

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Disposal recommendations

Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

160508 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded organic chemicals consisting of or containing hazardous substances; hazardous waste

List of Wastes Code - used product

160508 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded organic chemicals consisting of or containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number or ID number: UN 3467
14.2. UN proper shipping name: Organometallic compound, toxic, solid, n.o.s. (Copper tetra MIBI tetrafluoroborate)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 3467
14.2. UN proper shipping name: Organometallic compound, toxic, solid, n.o.s. (Copper tetra MIBI tetrafluoroborate)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II

Marine transport (IMDG)

14.1. UN number or ID number: UN 3467
14.2. UN proper shipping name: Organometallic compound, toxic, solid, n.o.s. (Copper tetra MIBI tetrafluoroborate)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3467
14.2. UN proper shipping name: Organometallic compound, toxic, solid, n.o.s. (Copper tetra MIBI tetrafluoroborate)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulatory information**

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Water hazard class (D):

3 - highly hazardous to water

SECTION 16: Other information**Relevant H and EUH statements (number and full text)**

| | |
|------|-----------------------------|
| H301 | Toxic if swallowed. |
| H311 | Toxic in contact with skin. |
| H331 | Toxic if inhaled. |