

**Safety Data Sheet**

according to UK REACH Regulation

**DFO\*-Mal**

Revision date: 05.04.2023

Product code: 7273

Page 1 of 5

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

DFO\*-Mal

**Further trade names**

N1-(1-(2,5-dioxo-2,5-dihydro-1H-pyrrol-1-yl)  
-10,21-dihydroxy-3,11,14,22,25-pentaoxo-4,10,15,21,26-pentaazahentriacontan-31-yl)-N1-hydroxy-N4-(5-  
(N-hydroxyacetamido)pentyl)succinamide;  
DFO\*-Maleimide

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

Chelator for 89Zr-DFO\* based precursors for molecular imaging

**1.3. Details of the supplier of the safety data sheet**

|                 |   |            |                    |
|-----------------|---|------------|--------------------|
| Company name:   | ABX advanced biochemical compounds<br>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**

This substance is not classified as hazardous in accordance with GB CLP Regulation.

**2.2. Label elements****GB CLP Regulation****Precautionary statements**

|      |  |
|------|--|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P301 | IF SWALLOWED:  |
| P310 | Immediately call a POISON CENTER/doctor.                                   |
| P310 | Immediately call a doctor.   |
| P273 | Avoid release to the environment.  |

**2.3. Other hazards**

Warning - substance not yet tested completely.

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

N1-(1-(2,5-dioxo-2,5-dihydro-1H-pyrrol-1-yl)  
-10,21-dihydroxy-3,11,14,22,25-pentaoxo-4,10,15,21,26-pentaazahentriacontan-31-yl)-N1-hydroxy-N4-(5-  
(N-hydroxyacetamido)pentyl)succinamide

Sum formula: C41H69N9O14

Molecular weight: 912.04

**Safety Data Sheet**

according to UK REACH Regulation

Revision date: 05.04.2023

**DFO\*-Mal**  
Product code: 7273

Page 2 of 5

**Hazardous components**

none (according to UK REACH Regulation)

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

Avoid contact with skin, eyes and clothes.

**After inhalation**

Inhalation of dust may cause irritation of the respiratory system. Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

**After contact with skin**

After contact with skin, wash immediately with: Water. Change contaminated clothing. May cause an allergic skin reaction. If skin irritation or rash occurs: Get medical advice/attention.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water.

**After ingestion**

If swallowed, immediately drink: Water. Medical treatment necessary.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**Water spray. Foam. Extinguishing powder. Carbon dioxide (CO<sub>2</sub>). ABC powder.**5.2. Special hazards arising from the substance or mixture**In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide Nitrogen oxides (NO<sub>x</sub>).**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

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**

Wear personal protection equipment. Provide adequate ventilation. Avoid dust formation.

**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**

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**

Avoid contact with skin, eyes and clothes. Do not breathe dust. If handled uncovered, arrangements with local exhaust ventilation have to be used.

**Safety Data Sheet**

according to UK REACH Regulation

**DFO\*-Mal**

Revision date: 05.04.2023

Product code: 7273

Page 3 of 5

**Advice on general occupational hygiene**

Change contaminated clothing. Wash hands before breaks and after work. When using do not eat or drink.  
Protect skin by using skin protective cream.

**Further information on handling**

When using do not eat, drink, smoke, sniff.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container dry. Keep container tightly closed.

**Further information on storage conditions**

storage temperature:

at °C: 20 ± 5

Protect against: Light.

Store under (Gas): argon. Nitrogen.

**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****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.

**Respiratory protection**

With correct and proper use, and under normal conditions, breathing protection is not required.

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

|                 |                    |
|-----------------|--------------------|
| Physical state: | solid              |
| Colour:         | colourless whitish |

Auto-ignition temperature:  
Decomposition temperature:

Water solubility:  
Solubility in other solvents  
DMSO

|                    |
|--------------------|
| <b>Test method</b> |
| ASTM D 1929        |
| EC: 440/2008 A.4.  |
| partially soluble  |

**SECTION 10: Stability and reactivity****10.2. Chemical stability**

Thermal decomposition can lead to the escape of irritating gases and vapours.

**10.3. Possibility of hazardous reactions**

Decomposition under formation of: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide Nitrogen oxides (NO<sub>x</sub>).

**10.4. Conditions to avoid**

May cause decomposition by long-term light influence.

# Safety Data Sheet

according to UK REACH Regulation

**DFO\*-Mal**

Revision date: 05.04.2023

Product code: 7273

Page 4 of 5

**10.5. Incompatible materials**

Oxidizing agents, strong. Light.

**10.6. Hazardous decomposition products**

Thermal decomposition can lead to the escape of irritating gases and vapours.

**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in GB CLP Regulation****Toxicokinetics, metabolism and distribution**

No information available.

**Acute toxicity**

Toxicological data are not available.

**Irritation and corrosivity**

No information available.

**Sensitising effects**

No information available.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Due to missing data no statement can be made whether the substance fulfills the criteria of CMR categories 1 or 2.

**STOT-repeated exposure**

Toxicological data are not available.

**Specific effects in experiment on an animal**

No information available.

**11.2. Information on other hazards****Further information**

Toxicological data are not available.

**SECTION 12: Ecological information****12.1. Toxicity**

Toxicological data are not available.

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

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

**Safety Data Sheet**

according to UK REACH Regulation

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Revision date: 05.04.2023

Product code: 7273

Page 5 of 5

**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

**SECTION 14: Transport information****Other applicable information**

No dangerous good in sense of these transport regulations.

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

Water hazard class (D): 3 - highly hazardous to water

**SECTION 16: Other information**