# Safety Data Sheet

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According to REACH Regulations (EC) 1907/2006 and (EU) 2020/878

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

### 1.1 Product identifier

| | | |
|---|---|---|
| Product code | : | GX4559 |
| Product name | : | Hexacarbonylmolybdenum |
| CAS number | : | 13939-06-5 |
| EINECS | : | 237-713-3 |
| Physical form | : | solid, substance |
| REACH | : | A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline. |

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

PC21: Laboratory chemicals.

### 1.3 Details of the supplier of the safety data sheet

| | | | | | |
|---|---|---|---|---|---|
| Company name | : | Glentham Life Sciences Ltd | Telephone | : | +44 (0) 1225 667 798 |
| | | Unit 5 Leafield Way | Fax | : | +44 (0) 2033 978 909 |
| | | Corsham SN13 9SW | Email | : | info@glentham.com |
| | | United Kingdom | Web | : | www.glentham.com |

### 1.4 Emergency telephone number

Emergency telephone number : NHS Direct 111 (UK, 24 hours), 112 (EU, 24 Hours), +44 (0) 1225 667 798 (09.00 – 17.00 GMT)

## 2. Hazards identification

### 2.1 Classification of the substance or mixture

**Classification under CLP according to (EC) 1272/2008**

| | |
|---|---|
| H300 | Acute Tox. 2 |
| H310 | Acute Tox. 2 |
| H330 | Acute Tox. 2 |

### 2.2 Label elements

**Label elements under CLP according to (EC) 1272/2008**

**Pictograms**

GHS06

**Signal words** Danger

**Hazard statements**

| | |
|---|---|
| H300 | Fatal if swallowed |
| H310 | Fatal in contact with skin |
| H330 | Fatal if inhaled |

**Precautionary statements**

| | |
|---|---|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| P262 | Do not get in eyes, on skin, or on clothing. |
| P284 | [In case of inadequate ventilation] Wear respiratory protection. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P361 | Take off immediately all contaminated clothing. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P264 | Do not breathe fume. |

### 2.3 Other hazards

**PBT**

This substance is not identified as a PBT substance.

## 3.0 Composition/information on ingredients

### 3.1 Substances

| Name | Identifier | % | Classification |
|---|---|---|---|
| Hexacarbonylmolybdenum | CAS: 13939-06-5<br>EC: 237-713-3<br>REACH: Not applicable | | H300, Acute Tox. 2<br>H310, Acute Tox. 2<br>H330, Acute Tox. 2 |

## 4. First aid measures

### 4.1 Description of first aid measures

| | |
|---|---|
| **Skin contact** | Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Remove all contaminated clothes and footwear immediately unless stuck to skin. Transfer to hospital if there are burns or symptoms of poisoning. |
| **Eye contact** | Transfer to hospital for specialist examination. Bathe the eye with running water for 15 minutes. |
| **Ingestion** | Do not induce vomiting. If conscious, give half a litre of water to drink immediately. If unconscious and breathing is OK, place in the recovery position. If unconscious, check for breathing and apply artificial respiration if necessary. Transfer to hospital as soon as possible. Wash out mouth with water. |
| **Inhalation** | If breathing becomes bubbly, have the casualty sit and provide oxygen if available. If conscious, ensure the casualty sits or lies down. If unconscious and breathing is OK, place in the recovery position. If unconscious, check for breathing and apply artificial respiration if necessary. Remove casualty from exposure ensuring one's own safety whilst doing so. Transfer to hospital as soon as possible. |

### 4.2 Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **Skin contact** | Absorption through the skin may be fatal. Irritation or pain may occur at the site of contact. There may be redness or whiteness of the skin in the area of exposure. |
| **Eye contact** | The eyes may water profusely. There may be severe pain. |
| **Ingestion** | Convulsions may occur. There may be loss of consciousness. There may be soreness and redness of the mouth and throat. There may be vomiting. |
| **Inhalation** | Absorption through the lungs can occur causing symptoms similar to those of ingestion. Convulsions may occur. There may be loss of consciousness. There may be shortness of breath with a burning sensation in the throat. There may be vomiting. |
| **Delayed / immediate effects** | Convulsions may occur. Immediate effects can be expected after short-term exposure. There may be loss of consciousness. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Immediate / special treatment**

Do not induce vomiting. Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

## 5. Fire-fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

### 5.2 Special hazards arising from the substance or mixture

**Exposure hazards**

In combustion emits toxic fumes. Toxic.

### 5.3 Advice for fire-fighters

Wear protective clothing to prevent contact with skin and eyes. Wear self-contained breathing apparatus.

## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**Personal precautions**

Do not attempt to take action without suitable protective clothing - see section 8 of SDS. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Notify the police and fire brigade immediately.

**6.2 Environmental precautions**

Do not discharge into drains or rivers.

**6.3 Methods and material for containment and cleaning up**

**Clean-up procedures**

Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Transfer to a closable, labelled salvage container for disposal by an appropriate method. Absorb into dry earth or sand.

**6.4 Reference to other sections**

Refer to section 8 of SDS.

## 7. Handling and storage

**7.1 Precautions for safe handling**

**Handling requirements**

Avoid direct contact with the substance. Avoid the formation or spread of dust in the air. Ensure there is exhaust ventilation of the area.

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage conditions**

Avoid contact with water or humidity. Keep container tightly closed. Store in cool, well ventilated area.

**7.3 Specific end use(s)**

No data available.

## 8. Exposure controls/personal protection

**8.1 Control parameters**

**Workplace exposure limits**

No workplace exposure limit control parameters set

**8.2 Exposure controls**

| | |
|---|---|
| **Engineering measures** | Ensure there is exhaust ventilation of the area. |
| **Respiratory protection** | Particle filter class P1 (EN143). Respiratory protective device with particle filter. Self- contained breathing apparatus must be available in case of emergency. |
| **Hand protection** | Impermeable gloves. |
| **Eye protection** | Ensure eye bath is to hand. Safety glasses with side-shields. |
| **Skin protection** | Protective clothing. |

## 9. Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| Physical state | Solid |
| Colour | White |
| Odour | No data available. |
| Melting point/Freezing point | 150-151 °C (decomp) |
| Boiling point/initial boiling point/boiling range | 155 °C @ Press: 754 Torr |
| Flammability | No data available. |
| Lower/Upper explosion limit | No data available. |
| Flash Point | No data available. |
| Auto-ignition temperature | No data available. |
| Decomposition temperature | No data available. |
| pH | No data available. |
| Kinematic viscosity | No data available. |
| Solubility | No data available. |
| Partition coefficient n-octanol/water | No data available. |
| Vapour pressure | No data available. |

| | |
|---|---|
| Density/relative density | 1.960 |
| Relative vapour pressure | No data available. |
| Particle characteristics | No data available. |

**9.2 Other information**

No data available.

## 10. Stability and reactivity

**10.1 Reactivity**

Stable under recommended transport or storage conditions.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

**Hazardous reactions**

Decomposition may occur on exposure to conditions or materials listed below. Hazardous reactions will not occur under normal transport or storage conditions.

**10.4 Conditions to avoid**

Heat.

**10.5 Incompatible materials**

**Materials to avoid**

Strong acids. Strong oxidising agents.

## 11. Toxicological information

**11.1 Information on toxicological effects**

**a) Acute toxicity**

No data available.

**b) Skin corrosion/irritation**

No data available.

**c) Serious eye damage/irritation**

No data available.

**d) Respiratory or skin sensitisation**

No data available.

**e) Germ cell mutagenicity**

No data available.

**f) Carcinogenicity**

No data available.

**g) Reproductive toxicity**

No data available.

**h) STOT-single exposure**

No data available.

**i) STOT-repeated exposure**

No data available.

**j) Aspiration hazard**

No data available.

**11.2 Symptoms / routes of exposure**

| | |
|---|---|
| **Skin contact** | Absorption through the skin may be fatal. Irritation or pain may occur at the site of contact. There may be redness or whiteness of the skin in the area of exposure. |
| **Eye contact** | The eyes may water profusely. There may be severe pain. |

| | |
|---|---|
| **Ingestion** | Convulsions may occur. There may be loss of consciousness. There may be soreness and redness of the mouth and throat. There may be vomiting. |
| **Inhalation** | Absorption through the lungs can occur causing symptoms similar to those of ingestion. Convulsions may occur. There may be loss of consciousness. There may be shortness of breath with a burning sensation in the throat. There may be vomiting. |
| **Delayed / immediate effects** | Convulsions may occur. Immediate effects can be expected after short-term exposure. There may be loss of consciousness. |
| **Other information** | No data available. |

## 12. Ecological information

**12.1 Toxicity**

No data available.

**12.2 Persistence and degradability**

Biodegradable.

**12.3 Bioaccumulative potential**

No bioaccumulation potential.

**12.4 Mobility in soil**

Readily absorbed into soil.

**12.5 Results of PBT and vPvB assessment**

This substance is not identified as a PBT substance.

**12.6 Endocrine disrupting properties**

This substance is not identified as having endocrine disrupting properties

**12.7 Other adverse effects**

No data available.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Disposal operations**

Transfer to a suitable container and arrange for collection by specialised disposal company.

**NB**

The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

## 14. Transport information

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| **14.1. UN number** | | | | |
| UN3466 | UN3466 | UN3466 | UN3466 | UN3466 |
| **14.2. UN proper shipping name** | | | | |
| METAL CARBONYLS, SOLID, N.O.S. | METAL CARBONYLS, SOLID, N.O.S. | Metal carbonyls, solid, n.o.s. | METAL CARBONYLS, SOLID, N.O.S. | METAL CARBONYLS, SOLID, N.O.S. |
| **Transport document description** | | | | |
| UN3466 METAL CARBONYLS, SOLID, N.O.S. (HEX ACARBONYLMOLYB DENUM), 6.1, II | UN3466 METAL CARBONYLS, SOLID, N.O.S. (HEX ACARBONYLMOLYB DENUM), 6.1, II | UN3466 Metal carbonyls, solid, n.o.s. (Hexacarbonyl molybdenum), 6.1, II | UN3466 METAL CARBONYLS, SOLID, N.O.S. (HEX ACARBONYLMOLYB DENUM), 6.1, II | UN3466 METAL CARBONYLS, SOLID, N.O.S. (HEX ACARBONYLMOLYB DENUM), 6.1, II |

| 14.3. Transport hazard class(es) | | | | |
|---|---|---|---|---|
| 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
|  |  |  |  |  |
| **14.4. Packing group** | | | | |
| II | II | II | II | II |
| **14.5. Environmental hazards** | | | | |
| **No** | **No** | **No** | **No** | **No** |

## 15. Regulatory information

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

This Safety Data Sheet is prepared in accordance with Commission Regulation (EC) 1907/2006, amended by Commission Regulation (EU) 2020/787.

**Authorisations/Restrictions**

| | |
|---|---|
| Regulation (EC) 1907/2006, REACH, Annex XIV list of substances subject to authorisation: | No data available. |
| Regulation (EC) 1907/2006, REACH, Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances: | No data available. |
| Regulation (EC) 1005/2009 on substances that deplete the ozone layer: | No data available. |
| Regulation (EC) 850/2004 on persistent organic pollutants, amended by (EU) No 2019/1021: | No data available. |

**15.2 Chemical safety assessment**

A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

## 16. Other information

**H-Statement Full Texts**

| | |
|---|---|
| H300 | Fatal if swallowed |
| H310 | Fatal in contact with skin |
| H330 | Fatal if inhaled |

**Abbreviations Full Texts**

| | |
|---|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ALARP | As low as is reasonably practicable |
| CAS | Chemical Abstracts Service |
| CLP | Classification, Labelling and Packaging Regulations |
| COSHH | Control of Substances Hazardous to Health |
| EC Number | European Community Number |
| EC50 | Effective Concentration 50% |
| EILINCS | European List of Notified Chemical Substances |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| GHS | Globally Harmonised System |
| HSE | Health & Safety Executive UK |
| IATA | International Air Transport Association |
| IM | Intramuscular |
| IMDG | The International Maritime Dangerous Goods Code |
| IP | Intraperitoneal |
| IV | Intravascular |
| LD50 | Lethal Dose 50% |
| LOEC | Lowest Observable Effective Concentration |
| LTEL | Long Term Exposure Limit |
| NOEC | No Observable Effective Concentration |
| OECD | Organisation for Economic Cooperations and Development |
| PBT | Persistent Bioaccumulative Toxic |
| PPE | Personal Protective Equipment |

| | |
|---|---|
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Regulations Concerning the International Carriage of Dangerous Goods by Rail |
| SC | Subcutaneous |
| SDS | Safety Data Sheet |
| STEL | Short Term Exposure Limit |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and Very Bioaccumulative |
| WEL | Workplace Exposure Limits |

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