

Material Safety Data Sheet

Viamed Series Oxygen Sensors

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

1.1 Product identifier

Oxygen Sensors

Part numbers: 0110018, 0110019, 0110020, 0110021, 0110023, 0110025, 0110039, 0110040, 0110041, 0110042, 0110043, 0110044, 0110045, 0110047, 0110048, 0110049, 0110071, 0110072, 0110073.

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

Relevant identified uses of the substance or mixture

Oxygen measurement

1.3 Details of the supplier of the safety data sheet

Address

Viamed Ltd.

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Cross Hills

Keighley

West Yorkshire BD20 7DT

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification information

This product is in the sense of article 3 of the Regulation (EC) 1907/2006 (REACH) an article and not subject to the labelling obligations according to:

- Art. 1, Regulation (EC) 1272/2008 (CLP).

To provide a safety data sheet is not mandatory for articles and is done on a voluntary basis.

2.2 Label elements

Not relevant

2.3 Other hazards

Contains sensor encapsulated by a housing, lead (Pb), lead oxide (PbO) and concentrated potassium hydroxide solution (between 2 and 5 mol / L). Lead and lead oxide are toxic and dangerous for the environment. Concentrated potassium hydroxide is corrosive (see section 3.2).

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable. The product is not a substance.

3.2 Mixtures

Hazardous ingredients

| No. | Substance name | | | Additional information | |
|---|--------------------------------|------------------------------|--|------------------------|--------|
| | CAS / EC / Index/REACH No. | Classification 67/548/EEC | Classification (EC) 1272/2008 (CLP) | Concentration | % |
| 1 | Lead | | | | |
| | 7439-92-1 | Repr.Cat.1; R60 | Repr. 1A; H360FD | > 30.0 - < 50.00 | % b.w. |
| | 231-100-4 | Repr.Cat.1; R61 | STOT RE 1; H372 | | |
| | | Xn; R48/20/22 | Aquatic Acute 1; H400 | | |
| | | N; R50/53 | Aquatic Chronic 1; H410 | | |
| 2 | Potassium Hydroxide | | | | |
| | 1310-58-3 | Xn; R22 | Acute Tox. 4*; H302 | > 0.50 - < 2.00 | % b.w. |
| | 215-181-3 | C; R35 | Skin Corr. 1A; H314 | | |
| | 019-002-00-8 | | | | |
| Full Text for all R-phrases , H-phrases and EUH-phrases: pls. see section 16 (*, **, ***, ****) Detailed explanation pls. refer to CLP regulation No. 1272/2008, annex VI, 1.2 | | | | | |
| Note | Specific concentration limits | | M-factor (acute) | M-factor (chronic) | |
| - | Skin Irrit. 2; H315: C >= 0.5% | | - | - | |
| | Eye Irrit. 2; H319: C >= 0.5% | | | - | |
| | Skin Corr. 1B; H314: C >= 2% | | | - | |
| | Skin Corr. 1A; H314: C >= 5% | | | - | |

3.3 Other information

Listed in Section 3.2 the % by weight is based on the total mass of the sensor.

Quantity / Sensor:

Lead (CAS No. 7439-92-1.) 10-25 g

KOH (CAS No. 1310-58-3.) 1-2 mL (2 mol / L - 5 mol / l of KOH)

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical attention.

After inhalation

Remove to fresh air, keep patient warm and at rest.

After skin contact

Rinse with plenty of water. Get medical attention if pain still persists.

After eye contact

Separate eyelids, wash the eyes thoroughly with water (15 min.). Seek medical assistance.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Effects

The following applies to lead compounds in general: Due to the poor absorbability via the gastrointestinal tract, only very high doses lead to acute cases of intoxication. After a latency period of several hours, metallic taste, nausea, vomiting and colic occur, in many instances followed by shock. Chronic uptake causes peripheral muscular weakness ("drop-wrist"), anaemia and central-nervous disorders. Women of child-bearing age should not be exposed to the substance over long period of time.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguishing measures to suit surroundings.

Unsuitable extinguishing media

No data available.

5.2 Special hazards arising from the substance or mixture

In case of fires, hazardous combustion gases are formed: Lead fumes; Lead oxide

5.3 Advice for fire fighters

Appropriate breathing apparatus may be required. Wear protective clothing.

DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Collect mechanically (preferably in dry condition). Send in suitable containers for recovery or disposal. When picked up, treat material as prescribed under heading "Disposal considerations".

6.4 Reference to other sections

No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Not mechanically damage the case. Do not use damaged products. Do not misused. See Technical Data Sheet. Do not use liquid disinfectant solution. Remove dirt with a damp disposable cloth.

General protective and hygiene measures

Keep separated from food-stuffs and feed-stocks. Do not eat or drink during work - no smoking. Wash hands before breaks and after work. Avoid contact with eyes and skin. Do not inhale dust/fumes/aerosols.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in a dry place. Store at aired place. Keep under lock and key or accessible only to specialists or people who are authorized.

Recommended storage temperature

Value: -20 °C to 50 °C

Requirements for storage rooms and vessels

Keep the product in the original packing.

7.3 Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

No parameters available for monitoring.

8.2 Exposure controls

Appropriate engineering controls

No data available.

Personal protective equipment

Respiratory protection

No data available.

Eye / face protection

No data available.

Hand protection

No data available.

Other

Protective clothing must be selected according to the type of work and the respective conditions of risk.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form colour

moulded element

Odour

No data available

Odour threshold

No data available

pH value

Value: >= 14

Reference substance: potassium-hydroxide

Boiling point / boiling range

No data available

Decomposition point / decomposition range

No data available

Flash point

Not applicable

Flash point

Not applicable

Flash point

Not applicable

Auto-ignition temperature

Not applicable

Oxidising properties

| |
|---|
| No data available |
| Explosive properties |
| No data available |
| Flammability (solid, gas) |
| No data available |
| Lower flammability or explosive limits |
| No data available |
| Upper flammability or explosive limits |
| No data available |
| Vapour pressure |
| No data available |
| Vapour density |
| No data available |
| Evaporation rate |
| No data available |
| Relative density |
| No data available |
| Density |
| No data available |
| Solubility in water |
| No data available |
| Solubility(ies) |
| No data available |
| Partition coefficient: n-octanol/water |
| No data available |
| Viscosity |
| No data available |

SECTION 10: Stability and reactivity

Reactivity

Dangerous reactions are not expecting handling the product according to its intended use.

10.2 Chemical stability

stable if stored and handled properly.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

None, if handled according to order.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

| |
|--|
| Acute oral toxicity |
| No data available |
| Acute dermal toxicity |
| No data available |
| Acute inhalation toxicity |
| No data available |
| Skin corrosion/irritation |
| No data available |
| Serious eye damage/irritation |
| No data available |
| Respiratory or skin sensitisation |
| No data available |
| Germ cell mutagenicity |
| No data available |
| Reproduction toxicity |
| No data available |
| Carcinogenicity |
| No data available |
| STOT-single exposure |
| No data available |
| STOT-repeated exposure |
| No data available |
| Aspiration hazard |
| No data available |
| Other information |
| No health-damaging effects to be expected if used properly |

SECTION 12: Ecological information

12.1 Toxicity

| |
|--------------------------------------|
| Toxicity to fish (acute) |
| No data available |
| Toxicity to fish (chronic) |
| No data available |
| Toxicity to Daphnia (acute) |
| No data available |
| Toxicity to Daphnia (chronic) |

| |
|------------------------------------|
| No data available |
| Toxicity to algae (acute) |
| No data available |
| |
| Toxicity to algae (chronic) |
| No data available |
| |
| Bacteria toxicity |
| No data available |

12.2 Persistence and degradability

No data available.

12.3 Bio-accumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

No data available.

12.7 Other information

| |
|-----------------------------------|
| Other information |
| Ecological data is not available. |

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. Dispose of in accordance with local regulations.

Alternatively depleted oxygen sensors may be returned to Vandagraph Sensor Technologies for safe disposal, in accordance with Hazardous Waste Regulations 2005 through a fully licensed waste management company. For further details see separate Environmental and Recycling Information, which is available upon request.

Packaging

Dispose of in accordance with federal, state and local regulations.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG

The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA

The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

SECTION 15: Regulatory information

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

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the article does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

Restriction of occupation

Adhere to the national sanitary and occupational safety regulations when using this product.

Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

Remarks: Annex I, part 1 + 2: not mentioned. With regard to possibly appropriate decomposition products see Chapter 10.

15.2 Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Sources of key data used to compile the data sheet:

EC Directive 67/548/EC resp. 1999/45/EC as amended in each case.

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case. EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

National Threshold Limit Values of the corresponding countries as amended in each case. Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of the R-, H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections).

| | |
|-----------|--|
| R22 | Harmful if swallowed. |
| R35 | Causes severe burn. |
| R48/20/22 | Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. |
| R50/53 | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R60 | May impair fertility. |
| R61 | May cause harm to the unborn child. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H360FD | May damage fertility. May damage the unborn child. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Data is based on our present knowledge. However, it shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.