

Classified as hazardous in accordance with the criteria of EPA New Zealand

## Section 1 - Identification

### Product Identifier

|                             |  |
|-----------------------------|--|
| <b>Product Name</b>         | <u>2,3-Butanedione monoxime</u>                |
| <b>CAS No</b>               | 57-71-6  |
| <b>Synonyms</b>             | DAM; 2,3-Butanedione 2-oxime; Biacetylmonoxime |
| <b>Molecular Formula</b>    | C4H7NO2  |
| <b>Molecular Weight</b>     | 101.10   |
| <b>Recommended Use</b>      | Laboratory chemicals.                          |
| <b>Uses advised against</b> | No Information available                       |

|                                |   |
|--------------------------------|---|
| <b>Product Code</b>            | <b>L01891</b>   |
| <b>Address</b>                 | Thermo Fisher Scientific New Zealand Ltd<br>244 Bush Road, Albany,<br>Auckland, New Zealand |
| <b>Emergency Tel.</b>          | <b>CHEMTREC®</b><br><b>09 980 6780 or +64 9 980 6780</b>                                    |
| <b>Telephone / Fax Numbers</b> | Tel: 09 980 6700<br>Fax: 09 980 6788  |
| <b>E-mail address</b>          | <u>ANZinfo@thermofisher.com</u>   |

## Section 2 - Hazard(s) Identification

### Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

**HSNO Approval Number**      **HSR002503**

### GHS Classification

#### Physical hazards

Based on available data, the classification criteria are not met

#### Health hazards

Germ Cell Mutagenicity

Category 2

#### Environmental hazards

Based on available data, the classification criteria are not met

### Label Elements

None required

**Signal Word****Warning****Hazard Statements**

H341 - Suspected of causing genetic defects if inhaled

**Precautionary Statements****Storage**

P403 - Store in a well-ventilated place

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards which do not result in classification**

## Section 3 - Composition and Information on Ingredients

| Component                  | CAS No  | Weight % |
|----------------------------|---------|----------|
| 2,3-Butanedione, monooxime | 57-71-6 | 100      |

## Section 4 - First Aid Measures

**Description of first aid measures**

|  |   |
|--|---|
| <b>New Zealand Emergency Tel.</b>          | CHEMTREC®<br>09 980 6780 or +64 9 980 6780  |
| <b>Inhalation</b>                          | Remove to fresh air. Get medical attention immediately if symptoms occur.   |
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.         |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur. |
| <b>Ingestion</b>                           | Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.                   |
| <b>Self-Protection of the First Aider</b>  | No special precautions required.  |
| <b>First Aid Facilities</b>                | Eyewash, safety shower and washroom.  |
| <b>Most important symptoms and effects</b> | None reasonably foreseeable.  |
| <b>Notes to Physician</b>                  | Treat symptomatically.  |

## Section 5 - Fire Fighting Measures

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Combustion Products**

None under normal use conditions.

**Special protective equipment and precautions for fire fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## **Section 6 - Accidental Release Measures**

**Personal Precautions, Protective Equipment and Emergency Procedures****Emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

**Environmental Precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

**Precautions to prevent secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations

**Reference to Other Sections**

Refer to protective measures listed in Sections 8 and 13.

## **Section 7 - Handling and Storage**

**Precautions for Safe Handling****Advice on safe handling**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

**Conditions for Safe Storage, Including any Incompatibilities****Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place.

**Incompatible Materials**

None known.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

## **Section 8 - Exposure Controls and Personal Protection**

**Control parameters**

**Exposure limits**

The product does not contain any hazardous materials with occupational exposure limits established.

**Biological limit values**

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

**Appropriate engineering controls****Engineering Measures**

None under normal use conditions.

**Individual protection measures, such as personal protective equipment****Eye Protection**

Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

**Hand Protection**

Protective gloves

| Glove material     | Breakthrough time                 | Glove thickness | AUS/NZ Standard | Glove comments        |
|--------------------|-----------------------------------|-----------------|-----------------|-----------------------|
| Disposable gloves. | See manufacturers recommendations | -               | AS/NZS 2161     | (minimum requirement) |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Skin and body protection**

Long sleeved clothing

**Respiratory Protection**

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices

**Recommended Filter type:**

Particle filter (or AUS/NZ equivalent)

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No information available.

## Section 9 - Physical and Chemical Properties

**Information on basic physical and chemical properties****Physical State**

Powder Solid

**Appearance**

White

**Odor**

Odorless

**Odor Threshold**

No data available

**pH****Melting Point/Range**

75 - 78 °C / 167 - 172.4 °F

**Softening Point**

No data available

**Boiling Point/Range**

185 - 186 °C / 365 - 366.8 °F @ 760 mmHg

**Flammability (liquid)**

Not applicable

Solid

**Flammability (solid,gas)**

No information available

**Explosion Limits**

No data available

**Flash Point**

No information available

**Method** - No information available

|  |                          |       |
|--|--------------------------|-------|
| <b>Autoignition Temperature</b>                | Not applicable           |       |
| <b>Decomposition Temperature</b>               | No data available        |       |
| <b>Viscosity</b>                               | Not applicable           | Solid |
| <b>Water Solubility</b>                        | Slightly soluble         |       |
| <b>Solubility in other solvents</b>            | No information available |       |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |       |
| <b>Component</b>                               | <b>log Pow</b>           |       |
| 2,3-Butanedione, monooxime                     | 1.74                     |       |
| <b>Vapor Pressure</b>                          | No information available |       |
| <b>Density / Specific Gravity</b>              | No data available        |       |
| <b>Bulk Density</b>                            | No data available        |       |
| <b>Vapor Density</b>                           | Not applicable           | Solid |
| <b>Particle characteristics</b>                | No data available        |       |

**Other information**

|                          |                        |
|--------------------------|------------------------|
| <b>Molecular Formula</b> | C4H7NO2                |
| <b>Molecular Weight</b>  | 101.10                 |
| <b>Evaporation Rate</b>  | Not applicable - Solid |

**Section 10 - Stability and Reactivity**

|   |  |
|---|--|
| <b>Reactivity</b>                       | None known, based on information available |
| <b>Stability</b>                        | Stable under normal conditions.            |
| <b>Sensitivity to Mechanical Impact</b> | No information available                   |
| <b>Sensitivity to Static Discharge</b>  | No information available                   |
| <b>Hazardous Polymerization</b>         | No information available.                  |
| <b>Hazardous Reactions</b>              | None under normal processing.              |
| <b>Conditions to Avoid</b>              | Heat, flames and sparks.                   |
| <b>Incompatible Materials</b>           | None known.                                |
| <b>Hazardous Decomposition Products</b> | None under normal use conditions.          |

**Section 11 - Toxicological Information****Acute Effects****Information on likely routes of exposure****Product Information**

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | Avoid breathing dust or spray mist.            |
| <b>Eyes</b>       | Not an expected route of exposure.             |
| <b>Skin</b>       | No known effect based on information supplied. |
| <b>Ingestion</b>  | No known effect based on information supplied. |

**Numerical measures of toxicity**

|                            |                   |
|----------------------------|-------------------|
| <b>(a) acute toxicity;</b> |                   |
| <b>Oral</b>                | No data available |
| <b>Dermal</b>              | No data available |
| <b>Inhalation</b>          | No data available |

- (b) skin corrosion/irritation; No data available
- (c) serious eye damage/irritation; No data available
- (d) respiratory or skin sensitization;  
Respiratory No data available  
Skin No data available
- (e) germ cell mutagenicity; No data available
- (f) carcinogenicity; No data available  
There are no known carcinogenic chemicals in this product
- (g) reproductive toxicity; No data available
- (h) STOT-single exposure; No data available
- (i) STOT-repeated exposure; No data available  
Target Organs No information available.
- (j) aspiration hazard; Not applicable  
Solid

**Symptoms / effects, both acute and delayed**

No information available.

## Section 12 - Ecological Information

**Ecotoxicity**

**Aquatic ecotoxicity** Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

**Terrestrial ecotoxicity** There is no data for this product

**Persistence and Degradability** No information available

**Persistence** Persistence is unlikely.

**Bioaccumulative Potential** Bioaccumulation is unlikely

| Component                  | log Pow | Bioconcentration factor (BCF) |
|----------------------------|---------|-------------------------------|
| 2,3-Butanedione, monooxime | 1.74    | No data available             |

**Mobility** No information available.

**Other adverse effects**

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

**Persistent Organic Pollutant**  
**Ozone Depletion Potential**

This product does not contain any known or suspected substance  
This product does not contain any known or suspected substance

## Section 13 - Disposal Considerations

### Waste treatment methods

**Waste from Residues/Unused Products**

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

**Contaminated Packaging**

Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.

**Other Information**

Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations .

## Section 14 - Transport Information

**NZS 5433:2020**

Not regulated

**IATA**

Not regulated

**IMDG/IMO**

Not regulated

**Environmental hazards**

No hazards identified

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

Not applicable, packaged goods

**Special Precautions**

No special precautions required. Please refer to the applicable dangerous goods regulations for additional information.

**Additional information**

None known

## Section 15 - Regulatory Information

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

|                             |           |
|-----------------------------|-----------|
| <b>HSNO Approval Number</b> | HSR002503 |
|-----------------------------|-----------|

**National Regulations**

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

**Certified handlers, tracking and controlled substance license requirements**

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

**Prohibition or notification/licensing requirements**

Shown below are details of specific prohibition/notifications or licensing requirements when they apply.

**International Regulations**

**Ozone Depletion Potential** This product does not contain any known or suspected substance

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Rotterdam Convention (PIC)** Not applicable

**Authorisation/Restrictions according to EU REACH** Not applicable

**International Inventories**

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component                  | CAS No  | NZIoC | AICS | EINECS | ELINCS | NLP | KECL     | IECSC | TCSI |
|----------------------------|---------|-------|------|--------|--------|-----|----------|-------|------|
| 2,3-Butanedione, monooxime | 57-71-6 | X     | X    | -      | -      | -   | KE-03825 | X     | X    |

| Component                  | CAS No  | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | PICCS | ISHL | ENCS |
|----------------------------|---------|------|---|-----|------|-------|------|------|
| 2,3-Butanedione, monooxime | 57-71-6 | X    | ACTIVE  | X   | -    | X     | X    | X    |

**Legend:** X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**Section 16 - Other Information**

**This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations**

**Legend**

**NZIoC** - New Zealand Inventory of Chemicals

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**IECSC** - Chinese Inventory of Existing Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**NZS 5433:2020** - Transport of Dangerous Goods on Land

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**WEL** - Workplace Exposure Limit

**DNEL** - Derived No Effect Level

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**VOC** - (Volatile Organic Compound)

**AICS** - Australian Inventory of Chemical Substances

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**CAS** - Chemical Abstracts Service

**ACGIH** - American Conference of Governmental Industrial Hygienists

**PNEC** - Predicted No Effect Concentration

**OECD** - Organisation for Economic Co-operation and Development

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**ADG** - Australian Code for the Transport of Dangerous Goods by Road and Rail

**LC50** - Lethal Concentration 50%

**ATE** - Acute Toxicity Estimate

**RPE** - Respiratory Protective Equipment

**NOEC** - No Observed Effect Concentration

**BCF** - Bioconcentration factor

**PBT** - Persistent, Bioaccumulative, Toxic



**Key literature references and sources for data**

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

|                         |                |
|-------------------------|----------------|
| <b>Revision Date</b>    | 15-Mar-2023    |
| <b>Revision Summary</b> | Not applicable |

**Disclaimer**

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## End of Safety Data Sheet