

# SAFETY DATA SHEET

Revision Date 19-Dec-2025

## Revision Number 6

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

|                             |  |
|-----------------------------|--|
| <b>Product Name</b>         | 2,2-Dimethyl-1,3-dioxane-4,6-dione                       |
| <b>Cat No. :</b>            | AC198450000; AC198450250; AC198451000                    |
| <b>CAS No</b>               | 2033-24-1  |
| <b>Synonyms</b>             | Meldrum's acid; Malonic acid cyclic isopropylidene ester |
| <b>Recommended Use</b>      | Laboratory chemicals.                                    |
| <b>Uses advised against</b> | Food, drug, pesticide or biocidal product use.           |

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

## Company

## **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

## Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024).

### Skin Corrosion/Irritation

## Category 2

## Label Elements

## Signal Word

## Warning

## Hazard Statements

#### **Hazard statements**

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life  
Toxic to aquatic life with long lasting effects

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

**3. Composition/information on Ingredients**

| Component                            | CAS No    | Weight % |
|--------------------------------------|-----------|----------|
| 1,3-Dioxane-4,6-dione, 2,2-dimethyl- | 2033-24-1 | <= 100   |

**4. First-aid measures****General Advice**

If symptoms persist, call a physician.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects**

None reasonably foreseeable.

**Notes to Physician**

Treat symptomatically

**5. Fire-fighting measures**

**Suitable Extinguishing Media** Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

**Unsuitable Extinguishing Media** No information available

|   |                          |
|---|--------------------------|
| <b>Flash Point</b>                      | > 365 °C                 |
| <b>Method -</b>                         | No information available |
| <b>Autoignition Temperature</b>         | No information available |
| <b>Explosion Limits</b>                 |                          |
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

#### **Specific Hazards Arising from the Chemical**

Do not allow run-off from fire-fighting to enter drains or water courses.

#### **Hazardous Combustion Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

#### **Protective Equipment and Precautions for Firefighters**

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

#### **NFPA**

| Health | Flammability | Instability | Physical hazards |
|--------|--------------|-------------|------------------|
| 2      | 1            | 1           | N/A              |

### **6. Accidental release measures**

|                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.   |
| <b>Environmental Precautions</b> | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. |

|   |  |
|---|--|
| <b>Methods for Containment and Clean Up</b> | Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. |
|---|--|

### **7. Handling and Storage**

|                 |   |
|-----------------|---|
| <b>Handling</b> | Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.   |
| <b>Storage.</b> | Keep in a dry place. Keep container tightly closed. To maintain product quality: Store under an inert atmosphere. Keep refrigerated. Incompatible Materials. Strong oxidizing agents. |

### **8. Exposure controls / personal protection**

|                            |   |
|----------------------------|---|
| <b>Exposure Guidelines</b> | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
|----------------------------|---|

|                             |                                   |
|-----------------------------|-----------------------------------|
| <b>Engineering Measures</b> | None under normal use conditions. |
|-----------------------------|-----------------------------------|

#### **Personal Protective Equipment**

|                                 |   |
|---------------------------------|---|
| <b>Eye/face Protection</b>      | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.   |
| <b>Respiratory Protection</b>   | No protective equipment is needed under normal use conditions.  |

**Recommended Filter type:** Particle filter.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

**Physical State** Solid  
**Color** Beige  
**Odor** Odorless  
**Odor Threshold** No information available  
**Property**  
**Melting Point/Range** 92 - 96 °C / 197.6 - 204.8 °F  
**Softening Point** No data available  
**Boiling Point/Range** No information available  
**Flash Point** > 365 °C  
**Flammability (liquid)** Not applicable  
**Flammability (solid,gas)** No information available  
**Explosion Limits** No data available

**Autoignition Temperature** No data available

**Decomposition Temperature** > 94 °C

**pH** 2.5

**Viscosity** Not applicable

**Water Solubility** 2.5 g/100 ml (20°C)

**Solubility in other solvents** No information available

**Partition Coefficient (n-octanol/water)** No data available

**Vapor Pressure** No data available

**Density / Specific Gravity** No data available

**Bulk Density** No data available

**Vapor Density** Not applicable

**Particle characteristics** No data available

### Other Information

**Molecular Formula** C6 H8 O4

**Molecular Weight** 144.13

**Evaporation Rate** Not applicable - Solid

### Remarks

### • Method

**Method** - No information available

Solid

saturated solution

Solid

Solid

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Moisture sensitive.

**Conditions to Avoid** Incompatible products. Exposure to moist air or water. Excess heat.

**Incompatible Materials** Strong oxidizing agents

**Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

**Hazardous Polymerization** No information available.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

Information on expected route of exposure

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | Not an expected route of exposure.             |
| <b>Ingestion</b>  | May be harmful if swallowed.                   |
| <b>Eyes</b>       | Avoid contact with eyes. May cause irritation. |
| <b>Skin</b>       | Avoid contact with skin. May cause irritation. |

Toxicology data for the components

| Component                            | LD50 Oral         | LD50 Dermal | LC50 Inhalation |
|--------------------------------------|-------------------|-------------|-----------------|
| 1,3-Dioxane-4,6-dione, 2,2-dimethyl- | >5000 mg/kg (Rat) | -           | -               |

**Toxicologically Synergistic Products** No information available

**(b) skin corrosion/irritation;** Category 2

**(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;**

The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component                            | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|--------------------------------------|-----------|------------|------------|------------|------------|------------|
| 1,3-Dioxane-4,6-dione, 2,2-dimethyl- | 2033-24-1 | Not listed |

**(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

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed** No information available.

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

### DOT

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Technical Shipping Name** 2,2-Dimethyl-1,3-dioxane-4,6-dione  
**Hazard Class** 9  
**Packing Group** III

### TDG

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Technical Shipping Name** 2,2-Dimethyl-1,3-dioxane-4,6-dione  
**Hazard Class** 9  
**Packing Group** III

### IATA

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Technical Shipping Name** 2,2-Dimethyl-1,3-dioxane-4,6-dione  
**Hazard Class** 9  
**Packing Group** III

### IMDG/IMO

**UN-No** UN3077  
**Proper Shipping Name** Environmentally hazardous substances, solid, n.o.s.  
**Technical Shipping Name** 2,2-Dimethyl-1,3-dioxane-4,6-dione  
**Hazard Class** 9  
**Packing Group** III

## 15. Regulatory Information

### United States of America Inventory

| Component                            | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|--------------------------------------|-----------|------|---|-----------------------------|
| 1,3-Dioxane-4,6-dione, 2,2-dimethyl- | 2033-24-1 | X    | ACTIVE  | -                           |

### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)** Not applicable

**TSCA 12(b) - Notices of Export** Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component                               | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|---|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| 1,3-Dioxane-4,6-dione,<br>2,2-dimethyl- | 2033-24-1 | -   | X    | 217-992-8 | X     | X    | X    | X    | X     | KE-11336 |

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

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations** Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

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

| Component | CAS No | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous | REACH Regulation (EC 1907/2006) article 59 - Candidate List of |
|-----------|--------|---|--|--|
|           |        |   |  |  |

|                                      |           |   | Substances | Substances of Very High Concern (SVHC) |
|--------------------------------------|-----------|---|------------|--|
| 1,3-Dioxane-4,6-dione, 2,2-dimethyl- | 2033-24-1 | - | -          | -                                      |

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

| Component                            | CAS No    | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|--------------------------------------|-----------|----------------|------------------------------|---------------------------|--|
| 1,3-Dioxane-4,6-dione, 2,2-dimethyl- | 2033-24-1 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

| Component                            | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|--------------------------------------|-----------|---|--|----------------------------|------------------------------------|
| 1,3-Dioxane-4,6-dione, 2,2-dimethyl- | 2033-24-1 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

**16. Other Information****Prepared By**

Product stewardship (Regulatory Affairs)  
 Thermo Fisher Scientific  
 email - begel.sdsdesk@thermofisher.com

**Revision Date**

19-Dec-2025

**Print Date**

19-Dec-2025

**Revision Summary**

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**