

BIMAX® DIAM

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
 Issue date: 6/16/2023 Revision date: 2/18/2025 Supersedes version of: 6/16/2023 Version: 2.0

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

1.1. Product identifier

| | |
|------------------------|--|
| Product form | : Substance |
| Substance name | : BIMAX® DIAM |
| Chemical name | : (Z)-2-BUTENEDIOIC ACID DI-2-PROPENYL ESTER |
| CAS-No. | : 999-21-3 |
| REACH registration No. | : 01-2120868048-46-XXXX |
| Product code | : 9009 |
| Synonyms | : DIALLYL MALEATE |
| Product group | : Trade product |

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

1.2.1. Relevant identified uses

| | |
|------------------------------|---|
| Use of the substance/mixture | : Intermediates Laboratory chemicals |
|------------------------------|---|

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
 158 Industrial Road
 17327 Glen Rock, PA
 USA
 T 717-227-1774, F 717-227-1775 (M-F): 8:00 AM - 5:30 PM EST
CS-Gelest@m-chem.com, www.gelest.com

1.4. Emergency telephone number

| | |
|------------------|---|
| Emergency number | : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International) |
|------------------|---|

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

| | |
|--|------|
| Acute toxicity (oral), Category 3 | H301 |
| Acute toxicity (dermal), Category 4 | H312 |
| Skin corrosion/irritation, Category 2 | H315 |
| Serious eye damage/eye irritation, Category 2 | H319 |
| Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation | H335 |
| Full text of H- and EUH-statements: see section 16 | |

Adverse physicochemical, human health and environmental effects

Toxic if swallowed. Harmful in contact with skin. May cause respiratory irritation. Causes skin irritation. Causes serious eye irritation.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

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| | |
|--------------------------------|---|
| Hazard statements (CLP) | : H301 - Toxic if swallowed. H312 - Harmful in contact with skin. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. |
| Precautionary statements (CLP) | : P261 - Avoid breathing fume, mist, vapours, spray. P280 - Wear protective gloves, protective clothing, eye protection, face protection. P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P405 - Store locked up. |

2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

| | |
|---------|---------------|
| Name | : BIMAX® DIAM |
| CAS-No. | : 999-21-3 |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|-----------------|--|------|--|
| Diallyl maleate | CAS-No.: 999-21-3 EC-No.: 213-658-0 | > 98 | Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 |

Full text of H- and EUH-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Call a physician immediately. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell. |
| First-aid measures after skin contact | : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention. |
| First-aid measures after eye contact | : 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. |
| First-aid measures after ingestion | : Rinse mouth. Call a physician immediately. |

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

| | |
|-------------------------------------|-------------------------------------|
| Symptoms/effects after inhalation | : May cause respiratory irritation. |
| Symptoms/effects after skin contact | : Irritation. |
| Symptoms/effects after eye contact | : Eye irritation. |
| Symptoms/effects after ingestion | : Toxic if swallowed. |

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

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin, eyes and clothing. Avoid breathing fume, mist, vapours, spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing fume, mist, vapours, spray.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

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8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

| Hand protection | | | | | |
|-----------------|---|------------|----------------|-------------|----------|
| Type | Material | Permeation | Thickness (mm) | Penetration | Standard |
| Reusable gloves | Neoprene rubber (HNBR), Nitrile rubber (NBR) | | | | |

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---------------------------|---|
| Physical state | : Liquid |
| Colour | : Light yellow. |
| Molecular mass | : 196.22 g/mol Source: Registry of Toxic Effects of Chemical Substances |
| Odour | : Not available |
| Odour threshold | : Not available |
| Melting point | : -47 °C Source: National Emergency Management Agency |
| Freezing point | : Not available |
| Boiling point | : 110 °C Source: National Emergency Management Agency |
| Flammability | : Not applicable |
| Explosive limits | : Not available |
| Lower explosion limit | : Not available |
| Upper explosion limit | : Not available |
| Flash point | : 121 °C Source: National Emergency Management Agency |
| Auto-ignition temperature | : Not available |
| Decomposition temperature | : Not available |

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| | |
|---|--|
| pH | : Not available |
| Viscosity, kinematic | : Not available |
| Solubility | : Water: 151 mg/l at 25 deg C Source: National Library of Medicine |
| Partition coefficient n-octanol/water (Log Kow) | : Not available |
| Vapour pressure | : 0.00683 mm Hg Source: National Library of Medicine |
| Vapour pressure at 50°C | : Not available |
| Density | : Not available |
| Relative density | : 1.07 Source: National Emergency Management Agency |
| Relative vapour density at 20°C | : Not available |
| Particle characteristics | : Not applicable |

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Oxidizing agent. Bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

| | |
|-----------------------------|---------------------------------|
| Acute toxicity (oral) | : Toxic if swallowed. |
| Acute toxicity (dermal) | : Harmful in contact with skin. |
| Acute toxicity (inhalation) | : Not classified |

| Diallyl maleate (999-21-3) | |
|----------------------------|---|
| LD50 oral rat | 300 mg/kg Source: National Library of Medicine |
| LD50 dermal rabbit | 1150 mg/kg Source: National Library of Medicine |

| | |
|-----------------------------------|-------------------------------------|
| Skin corrosion/irritation | : Causes skin irritation. |
| Serious eye damage/irritation | : Causes serious eye irritation. |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : May cause respiratory irritation. |
| STOT-repeated exposure | : Not classified |

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Aspiration hazard : Not classified

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Diallyl maleate (999-21-3)

| | |
|-----------------|--|
| LC50 - Fish [1] | 1.015 mg/l Source: Ecological Structure Activity Relationships |
|-----------------|--|

| | |
|----------------------|--|
| EC50 96h - Algae [1] | 1.351 mg/l Source: Ecological Structure Activity Relationships |
|----------------------|--|

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Diallyl maleate (999-21-3)

| | |
|---|-----------------------|
| Partition coefficient n-octanol/water (Log Pow) | 2.9 Source: EPI Suite |
|---|-----------------------|

12.4. Mobility in soil

Diallyl maleate (999-21-3)

| | |
|------------------|-----------------------|
| Mobility in soil | 250 Source: EPI Suite |
|------------------|-----------------------|

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information






In accordance with ADR / IMDG / IATA / ADN / RID

| ADR | IMDG | IATA | ADN | RID |
|-------------------------------------|---------|---------|---------|---------|
| 14.1. UN number or ID number | | | | |
| UN 2810 | UN 2810 | UN 2810 | UN 2810 | UN 2810 |

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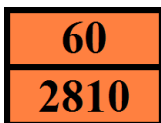
according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| 14.2. UN proper shipping name | | | | |
| TOXIC LIQUID, ORGANIC, N.O.S. | TOXIC LIQUID, ORGANIC, N.O.S. | Toxic liquid, organic, n.o.s. | TOXIC LIQUID, ORGANIC, N.O.S. | TOXIC LIQUID, ORGANIC, N.O.S. |
| Transport document description | | | | |
| UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (DIALLYL MALEATE), 6.1, III, (E) | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (DIALLYL MALEATE), 6.1, III | UN 2810 Toxic liquid, organic, n.o.s. (Diallyl maleate), 6.1, III | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (DIALLYL MALEATE), 6.1, III | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (DIALLYL MALEATE), 6.1, III |
| 14.3. Transport hazard class(es) | | | | |
| 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
|  |  |  |  |  |
| 14.4. Packing group | | | | |
| III | III | III | III | III |
| 14.5. Environmental hazards | | | | |
| Dangerous for the environment: No | Dangerous for the environment: No Marine pollutant: No | Dangerous for the environment: No | Dangerous for the environment: No | Dangerous for the environment: No |
| No supplementary information available | | | | |

14.6. Special precautions for user

Overland transport

| | |
|---|---------------------------|
| Classification code (ADR) | : T1 |
| Special provisions (ADR) | : 274, 614 |
| Limited quantities (ADR) | : 5I |
| Excepted quantities (ADR) | : E1 |
| Packing instructions (ADR) | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (ADR) | : MP19 |
| Portable tank and bulk container instructions (ADR) | : T7 |
| Portable tank and bulk container special provisions (ADR) | : TP1, TP28 |
| Tank code (ADR) | : L4BH |
| Tank special provisions (ADR) | : TU15, TE19 |
| Vehicle for tank carriage | : AT |
| Transport category (ADR) | : 2 |
| Special provisions for carriage - Packages (ADR) | : V12 |
| Special provisions for carriage - Loading, unloading and handling (ADR) | : CV13, CV28 |
| Special provisions for carriage - Operation (ADR) | : S9 |
| Hazard identification number (Kemler No.) | : 60 |
| Orange plates | : |



| | |
|-------------------------------|-----|
| Tunnel restriction code (ADR) | : E |
|-------------------------------|-----|

Transport by sea

| | |
|----------------------------|------------|
| Special provisions (IMDG) | : 223, 274 |
| Limited quantities (IMDG) | : 5 L |
| Excepted quantities (IMDG) | : E1 |

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| | |
|------------------------------------|---|
| Packing instructions (IMDG) | : P001, LP01 |
| IBC packing instructions (IMDG) | : IBC03 |
| Tank instructions (IMDG) | : T7 |
| Tank special provisions (IMDG) | : TP1, TP28 |
| EmS-No. (Fire) | : F-A |
| EmS-No. (Spillage) | : S-A |
| Stowage category (IMDG) | : A |
| Stowage and handling (IMDG) | : SW2 |
| Properties and observations (IMDG) | : Toxic if swallowed, by skin contact or by inhalation. |

Air transport

| | |
|--|----------------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y642 |
| PCA limited quantity max net quantity (IATA) | : 2L |
| PCA packing instructions (IATA) | : 655 |
| PCA max net quantity (IATA) | : 60L |
| CAO packing instructions (IATA) | : 663 |
| CAO max net quantity (IATA) | : 220L |
| Special provisions (IATA) | : A3, A4, A137 |
| ERG code (IATA) | : 6L |

Inland waterway transport

| | |
|-----------------------------------|------------------|
| Classification code (ADN) | : T1 |
| Special provisions (ADN) | : 274, 614, 802 |
| Limited quantities (ADN) | : 5 L |
| Excepted quantities (ADN) | : E1 |
| Carriage permitted (ADN) | : T |
| Equipment required (ADN) | : PP, EP, TOX, A |
| Ventilation (ADN) | : VE02 |
| Number of blue cones/lights (ADN) | : 0 |

Rail transport

| | |
|---|---------------------------|
| Classification code (RID) | : T1 |
| Special provisions (RID) | : 274, 614 |
| Limited quantities (RID) | : 5L |
| Excepted quantities (RID) | : E1 |
| Packing instructions (RID) | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID) | : MP19 |
| Portable tank and bulk container instructions (RID) | : T7 |
| Portable tank and bulk container special provisions (RID) | : TP1, TP28 |
| Tank codes for RID tanks (RID) | : L4BH |
| Special provisions for RID tanks (RID) | : TU15 |
| Transport category (RID) | : 2 |
| Special provisions for carriage – Packages (RID) | : W12 |
| Special provisions for carriage - Loading, unloading and handling (RID) | : CW13, CW28, CW31 |
| Colis express (express parcels) (RID) | : CE8 |
| Hazard identification number (RID) | : 60 |

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

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REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Germany

| Air Quality Control (TA Luft) | | | | | |
|-------------------------------|-------|---------------|------------|----------------|-------------------------|
| Category | Class | Applicable on | Local name | Max. mass flow | Max. mass concentration |
| | | | | | |

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

| |
|--|
| Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor |
|--|

Full text of H- and EUH-statements:

| | |
|-----------------------|--|
| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Acute Tox. 4 (Dermal) | Acute toxicity (dermal), Category 4 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| STOT SE 3 | Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation |
| H301 | Toxic if swallowed. |
| H312 | Harmful in contact with skin. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |

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SDS EU (REACH Annex II) - Custom v22

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