

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : VariDur 10 & 200 Liquid
Product code : 11-1029, 11-1033

1.2. Recommended use and restrictions on use

Recommended use : Laboratory chemicals
Restrictions on use : None known

1.3. Supplier

Buehler
41 Waukegan Rd
Lake Bluff, IL 60044
T 1-847-295-6500
custserv@buehler.com

1.4. Emergency telephone number

Emergency number : Global Access Code: 334545; Americas" +1 760 476 3962; Middle East/Africa: +1 760 476 3959; Asia Pacific +1 760 476 3960; Europe +1 760 476 3961

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Flammable liquids, Category 4	H227	Combustible liquid
Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2A	H319	Causes serious eye irritation.
Skin sensitisation, Category 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation.

Full text of H-statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS CA labelling

Hazard pictograms (GHS CA) :



Signal word (GHS CA) :

Warning

Hazard statements (GHS CA) :

H227 - Combustible liquid
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.

Precautionary statements (GHS CA) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

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P264 - Wash hands, forearms and face thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a POISON CENTER or doctor if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use media other than water to extinguish.
P403 - Store in a well-ventilated place.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	wt%	Classification (GHS CA)
Tetrahydrofurfuryl methacrylate	2-Propenoic acid, 2-methyl-, (tetrahydro-2-furanyl)methyl ester / TETRAHYDROFURFURYL METHACRYLATE / tetrahydrofurfuryl methacrylate	CAS-No.: 2455-24-5	66.19	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

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Name	Chemical name / Synonyms	Product identifier	wt%	Classification (GHS CA)
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	Methacrylic acid, monoester with 1,2-propanediol / Methacrylic acid, monoester with propane-1,2-diol / Hydroxypropyl methacrylate / Propylene glycol monomethacrylate / 2-Hydroxypropyl methacrylate / HYDROXYPROPYL METHACRYLATE / Monoester of methacrylic acid and propane-1,2-diol / hydroxypropyl methacrylate	CAS-No.: 27813-02-1	28.26	Eye Irrit. 2, H319 Skin Sens. 1, H317
1,4-Butanediol dimethacrylate	Dimethacrylate, 1,4-butanediyl / 2-Propenoic acid, 2-methyl-, 1,4-butanediyl ester / Tetramethylene dimethacrylate / Methacrylic acid, diester with 1,4-butanediol / 1,4-Butylene glycol dimethacrylate / 2-Propenoic acid, 2-methyl-, 1,1'-(1,4-butanediyl) ester / 1,4-BUTANEDIOL DIMETHACRYLATE / Diester of methacrylic acid with 1,4-butanediol / Butane-1,4-diyl dimethacrylate	CAS-No.: 2082-81-7	4.76	Skin Sens. 1, H317

Full text of hazard classes and H-statements : see section 16

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SECTION 4: First-aid measures

4.1. Description of first aid measures

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 or rash 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	: Call a poison center or a doctor if you feel unwell.
First-aid measures general	: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

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

Unsuitable extinguishing media	: Not determined.
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5.3. Specific hazards arising from the hazardous product

Fire hazard	: Combustible liquid.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Exercise caution when fighting any chemical fire.
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

No additional information available

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves
Eye protection:
Safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.

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Colour	: Colourless
Odour	: Solvent
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: 178 °C
Flash point	: 91 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 0.1 hPa
Relative vapour density at 20 °C	: No data available
Relative density	: 1.035
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.
Incompatible materials	: Strong oxidizing agents.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hardening time:	: No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified.
Acute toxicity (dermal)	: Not classified.
Acute toxicity (inhalation)	: Not classified.

2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)

LD50 oral rat	11200 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
ATE CA (oral)	11200 mg/kg bodyweight

1,4-Butanediol dimethacrylate (2082-81-7)

LD50 dermal rabbit	> 3000 mg/kg
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Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified.

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Carcinogenicity	: Not classified.
Reproductive toxicity	: Not classified.
STOT-single exposure	: May cause respiratory irritation.

Tetrahydrofurfuryl methacrylate (2455-24-5)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified.
Aspiration hazard	: Not classified.
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.

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.

Tetrahydrofurfuryl methacrylate (2455-24-5)	
LC50 - Fish [1]	31.1 – 38.8 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
Partition coefficient n-octanol/water (Log Pow)	1.76 (at 22.6 °C)

2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)	
Partition coefficient n-octanol/water (Log Pow)	0.97 (at 20 °C (at pH 2-8))

1,4-Butanediol dimethacrylate (2082-81-7)	
Partition coefficient n-octanol/water (Log Pow)	3.1 (at 20 °C)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Tetrahydrofurfuryl methacrylate (2455-24-5)	
Partition coefficient n-octanol/water (Log Pow)	1.76 (at 22.6 °C)

2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)	
Partition coefficient n-octanol/water (Log Pow)	0.97 (at 20 °C (at pH 2-8))

1,4-Butanediol dimethacrylate (2082-81-7)	
Partition coefficient n-octanol/water (Log Pow)	3.1 (at 20 °C)

12.4. Mobility in soil

Tetrahydrofurfuryl methacrylate (2455-24-5)	
Partition coefficient n-octanol/water (Log Pow)	1.76 (at 22.6 °C)

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2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)

Partition coefficient n-octanol/water (Log Pow) : 0.97 (at 20 °C (at pH 2-8))

1,4-Butanediol dimethacrylate (2082-81-7)

Partition coefficient n-octanol/water (Log Pow) : 3.1 (at 20 °C)

12.5. Other adverse effects

Ozone : Not classified.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with TDG / DOT / IMDG / IATA

14.1. UN number

UN-No. (TDG) : Not applicable
DOT NA No : NA1993
UN-No. (IMDG) : Not applicable
UN-No. (IATA) : Not applicable

14.2. UN proper shipping name

Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (DOT) : Combustible liquid, n.o.s.
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

TDG
Transport hazard class(es) (TDG) : Not applicable

DOT
Transport hazard class(es) (DOT) : Combustible liquid

IMDG
Transport hazard class(es) (IMDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (TDG) : Not applicable
Packing group (DOT) : III
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

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14.6. Special precautions for user

TDG

No data available

DOT

UN-No.(DOT)	: NA1993
DOT Special Provisions (49 CFR 172.102)	: 148 - Except for transportation by aircraft, when transported as a limited quantity or a consumer commodity, the maximum net capacity specified in §173.150(b)(2) of this subchapter for inner packagings may be increased to 5 L (1.3 gallons). IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a (tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

IMDG

No data available

IATA

No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

Tetrahydrofurfuryl methacrylate (2455-24-5)

Listed on the Canadian DSL (Domestic Substances List)

2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)

Listed on the Canadian DSL (Domestic Substances List)

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1,4-Butanediol dimethacrylate (2082-81-7)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Tetrahydrofurfuryl methacrylate (2455-24-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol (27813-02-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

1,4-Butanediol dimethacrylate (2082-81-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
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Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
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Listed on the Japanese ENCS (Existing New Chemical Substances) inventory
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on the Japanese ISHL (Industrial Safety and Health Law)

SECTION 16: Other information

Issue date : 06/22/2022
Revision date : 06/22/2022

Full text of H-statements:

H227	Combustible liquid
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Safety Data Sheet (SDS), Canada

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