

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Issuing Date 17-Aug-2016

Revision Date 13-Apr-2017

Revision Number 2

EGHS / English

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name VariDur 10 & 200 Liquid

Product Code(s) 11-1029, 11-1033

(M)SDS Number 1342777_E

Chemical name

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

Recommended Use Laboratory Use Only.

Uses advised against No information available.

1.3. Details of the supplier of the safety data sheet

Manufacturer ITW Test & Measurement GmbH

Manufacturer Address Boschstraße 10
73734 Esslingen am Neckar / GERMANY
www.buehler-met.de www.buehler.fr www.buehler.co.uk

Phone number +49 (0) 711 4904690-0

E-mail Address lab.eu@buehler.com

1.4. Emergency telephone number

Global Access Code: 334545

Americas: +1 760 476 3962

Middle East/Africa: +1 760 476 3959

UK: +44 8 08 189 0979

Europe: +1 760 476 3961

Asia Pacific: +1 760 476 3960

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Skin sensitization	Category 1 - (H317)
Reproductive Toxicity	Category 1B - (H360)

2.2. Label elements**Signal word****Danger****Hazard Statements**

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H317 - May cause an allergic skin reaction

H360Df - May damage the unborn child. Suspected of damaging fertility

Precautionary Statements - EU (§28, 1272/2008)

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P321 - Specific treatment (see supplemental first aid instructions on this label)

P405 - Store locked up

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

2.3. Other hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

Not applicable.

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Tetrahydrofurfuryl methacrylate	-	2455-24-5	50 - 75%	Repr. Tox 1B (H360)	
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	248-666-3	27813-02-1	25 - 50%	No data available	

1,4-Butanediol dimethacrylate	218-218-1	2082-81-7	0 - 10%	No data available	
Benzenamine, N,N,4-trimethyl-	202-805-4	99-97-8	0 - 1%	Acute Tox. 3 (H301) Acute Tox. 3 (H311) STOT RE 2 (H373) Acute Tox. 3 (H331) Aquatic Chronic 3 (H412)	
Hydroquinone	Present	123-31-9	0 - 0.1%	Acute Tox. 4 (H302) Muta. 2 (H341) Carc. 2 (H351) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	

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

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No	SVHC candidates
Tetrahydrofurfuryl methacrylate	2455-24-5	-
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	27813-02-1	-
1,4-Butanediol dimethacrylate	2082-81-7	-
Benzenamine, N,N,4-trimethyl-	99-97-8	-
Hydroquinone	123-31-9	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Do not use

mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not breathe vapor or mist. Use personal protective equipment as required. See section 8 for more information.

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

Symptoms Coughing and/ or wheezing. Difficulty in breathing.

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

Note to physicians Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical, Carbon dioxide (CO₂), Water spray, Alcohol resistant foam.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical

Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not breathe vapor or mist. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharges. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapor or mist.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up. Keep out of the reach of children.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical name	EU	United Kingdom	France	Spain	Germany
Hydroquinone 123-31-9	-	STEL: 1.5 mg/m ³ TWA: 0.5 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	-
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Hydroquinone 123-31-9	-	TWA: 2 mg/m ³	-	TWA: 0.5 mg/m ³ STEL: 2 mg/m ³	Ceiling: 2 mg/m ³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Hydroquinone	STEL 4 mg/m ³	H*	STEL: 2 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³

123-31-9	TWA: 2 mg/m ³	STEL: 2 mg/m ³ TWA: 2 mg/m ³	TWA: 1 mg/m ³	STEL: 1.5 mg/m ³	STEL: 1.5 mg/m ³
----------	--------------------------	---	--------------------------	-----------------------------	-----------------------------

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

8.2. Exposure controls

Personal protective equipment

- Eye/face protection** Tight sealing safety goggles.
- Hand Protection** Wear suitable gloves. Impervious gloves.
- Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Liquid
Appearance Colorless
Odor Characteristic
Color No information available
Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	Not determined		
Melting / freezing point	No data available	None known	
Boiling point / boiling range	> 34°C	None known	
Flash Point	91°C C		
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air		None known	
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Relative density	1.034		
Water Solubility	Immiscible		
Solubility(ies)	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Viscosity	No data available	None known	

9.2. Other information

Softening Point No information available
Molecular Weight No information available

VOC Content (%)	Not applicable
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

10.3. Possibility of hazardous reactions

Possibility of Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Heat, flames and sparks, Excessive heat.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Toxic by inhalation. (based on components).
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available. Toxic in contact with skin. (based on components).
Ingestion	Specific test data for the substance or mixture is not available.

Information on toxicological effects

Symptoms Coughing and/ or wheezing. Difficulty in breathing.

Numerical measures of toxicity

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	3,575.00 mg/kg
ATEmix (dermal)	330.00 mg/kg
ATEmix (inhalation-gas)	770.00 ppm
ATEmix (inhalation-dust/mist)	0.55 mg/L
ATEmix (inhalation-vapor)	3.00 mg/L

Unknown acute toxicity

- 99.45 % of the mixture consists of ingredient(s) of unknown toxicity
- 74 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 99.45 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 99.45 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 99.45 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 99.45 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	= 11200 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Benzenamine, N,N,4-trimethyl-	= 1650 mg/kg (Rat)	> 2000 mg/kg (Rat)	= 1400 mg/m ³ (Rat) 4 h
Hydroquinone	= 298 mg/kg (Rat)	= 74800 mg/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	EU - Annex VI Mutagens
Hydroquinone	Muta. 2

Carcinogenicity No information available.

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

Chemical name	EU - Annex VI Carcinogens
Hydroquinone	Carc. 2

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Harmful to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Tetrahydrofurfuryl methacrylate	-	96h LC50: 31.1 - 38.8 mg/L (Pimephales promelas)	-	-
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	-	48h LC50: = 493 mg/L (Leuciscus idus melanotus)	-	-
Benzenamine, N,N,4-trimethyl-	-	96h LC50: 42 - 50.5 mg/L (Pimephales promelas)	-	-
Hydroquinone	72h EC50: = 0.335 mg/L (Pseudokirchneriella subcapitata) 120h EC50: = 13.5 mg/L (Desmodesmus subspicatus)	96h LC50: = 0.044 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.044 mg/L (Pimephales promelas) 96h LC50: 0.1 - 0.18 mg/L (Pimephales promelas) 96h LC50: = 0.17 mg/L (Brachydanio rerio)	EC50 = 0.038 mg/L 15 min EC50 = 0.0382 mg/L 30 min EC50 = 0.042 mg/L 5 min EC50 = 23.75 mg/L 60 min	48h EC50: = 0.29 mg/L

12.2. Persistence and degradability

Persistence and Degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Chemical name	Log Pow
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	0.97
Benzenamine, N,N,4-trimethyl-	2.81
Hydroquinone	0.5

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol	Not applicable
1,4-Butanediol dimethacrylate	Not applicable
Benzenamine, N,N,4-trimethyl-	Not applicable
Hydroquinone	

12.6. Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging No information available.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN-No.	NOT REGULATED
14.2 Proper Shipping Name	Not Regulated
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Marine Pollutant	Not applicable
14.6 Special Provisions	None
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	No information available

RID

14.1 UN-No.	NOT REGULATED
14.2 Proper Shipping Name	NOT REGULATED
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

ADR

14.1 UN-No.	NOT REGULATED
14.2 Proper Shipping Name	NOT REGULATED
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

IATA	NOT REGULATED
14.1 UN-No.	NOT REGULATED
14.2 Proper Shipping Name	NON REGULATED
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

Section 14: TRANSPORT INFORMATION

IMDG/IMO	NOT REGULATED
14.1 UN-No.	Not Regulated
14.2 Proper Shipping Name	NOT REGULATED
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Marine Pollutant	Not applicable
14.6 Special Provisions	None
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	No information available

RID	NOT REGULATED
14.1 UN-No.	NOT REGULATED
14.2 Proper Shipping Name	NOT REGULATED
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

ADR	NOT REGULATED
14.1 UN-No.	NOT REGULATED
14.2 Proper Shipping Name	NOT REGULATED
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

IATA	NOT REGULATED
14.1 UN-No.	NOT REGULATED
14.2 Proper Shipping Name	NON REGULATED
14.3 Hazard Class	NOT REGULATED
14.4 Packing Group	NOT REGULATED
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

Section 15: REGULATORY INFORMATION

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

National regulations

France**Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number	Title
Tetrahydrofurfuryl methacrylate 2455-24-5	RG 65	-
2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol 27813-02-1	RG 65	-
1,4-Butanediol dimethacrylate 2082-81-7	RG 65	-
Hydroquinone 123-31-9	RG 65	-

Water hazard class (WGK) slightly hazardous to water (WGK 1)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

Persistent Organic Pollutants

Not applicable.

Dangerous substance category per Seveso Directive (2012/18/EU)

H2 - ACUTE TOXIC

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable.

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend

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

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

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

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

No information available.

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed

H341 - Suspected of causing genetic defects if inhaled

H351 - Suspected of causing cancer if inhaled

H318 - Causes serious eye damage

H317 - May cause an allergic skin reaction

H400 - Very toxic to aquatic life

H301 - Toxic if swallowed

H311 - Toxic in contact with skin

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

H331 - Toxic if inhaled

H412 - Harmful to aquatic life with long lasting effects

Legend

SVHC: Substances of Very High Concern for Authorization:

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average)

STEL

STEL (Short Term Exposure Limit)

Ceiling Maximum limit value

-

Skin designation

Key literature references and sources for data

www.ChemADVISOR.com/

Issuing Date 01-Mar-2017

Revision Date 13-Apr-2017

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006.

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.



The supplier identified below generated this SDS using the UL SDS template. UL did not test, certify, or approve the substance described in this SDS, and all information in this SDS was provided by the supplier or was reproduced from publically available regulatory data sources. UL makes no representations or warranties regarding the completeness or accuracy of the information in this SDS and disclaims all liability in connection with the use of this information or the substance described in this SDS. The layout, appearance and format of this SDS is ©2014 UL LLC. All rights reserved.

End of Safety Data Sheet