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

1.1 Product identifier

VariKwick Liquid
Article number 20-3597-xxx

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

1.2.1 Relevant uses

Mounting material for metallographic specimens

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

ITW Test & Measurement GmbH
In der Steele 2
40599 Düsseldorf / GERMANY
Phone 0800 707 6273
Fax 0800 707 6274
Homepage www.buehler-met.de
E-mail info.uk@buehler.com

Address enquiries to

Technical information info.uk@buehler.com

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Company 0800 707 6273 (Only valid if dialled within the UK) +49 (0) 211 974100

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Flam. Liq. 2: H225 Highly flammable liquid and vapour.
STOT SE 3: H335 May cause respiratory irritation.
Skin Irrit. 2: H315 Causes skin irritation.
Skin Sens. 1: H317 May cause an allergic skin reaction.

2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Hazard pictograms


Signal word DANGER

Contains: Methyl methacrylate

2,2'-Ethylenedioxydiethyl dimethacrylate

Hazard statements

H225 Highly flammable liquid and vapour.
H335 May cause respiratory irritation.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P261 Avoid breathing vapours.
P280 Wear eye protection / face protection.
P312 Call a POISON CENTER / doctor if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical advice / attention.

2.3 Other hazards

Physico-chemical hazards Risk of polymerisation.

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
40 - < 60	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, Reg-No.: 01-2119452498-28-XXXX
	GHS/CLP: Flam. Liq. 2: H225 - STOT SE 3: H335 - Skin Irrit. 2: H315 - Skin Sens. 1: H317
40 - < 60	2,2'-Ethylenedioxydiethyl dimethacrylate
	CAS: 109-16-0, EINECS/ELINCS: 203-652-6, Reg-No.: 01-2119969287-21-XXXX
	GHS/CLP: Skin Sens. 1B: H317
1 - <3	Dodecylmercaptane
	CAS: 112-55-0, EINECS/ELINCS: 203-984-1
	GHS/CLP: STOT SE 3: H335 - Eye Irrit. 2: H319 - Skin Irrit. 2: H315
1 - <3	2,2'-[(4-methylphenyl)imino]bisethanol
	CAS: 3077-12-1, EINECS/ELINCS: 221-359-1
	GHS/CLP: Acute Tox. 4: H302 - Skin Irrit. 2: H315 - Eye Irrit. 2: H319 - STOT SE 3: H335

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Supply with medical care.
Ensure supply of fresh air.

Skin contact In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

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.

Ingestion Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Allergic reactions
Headache
Irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam.
Dry powder.
Water spray jet.
Carbon dioxide.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.
Cool containers at risk with water spray jet.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep away from all sources of ignition.
Ensure adequate ventilation.
Use personal protective equipment.
High risk of slipping due to leakage/spillage of product.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide good room ventilation even at ground level (vapours are heavier than air).

Take precautionary measures against static discharges.
Keep away from open flames, hot surfaces and sources of ignition.
Vapours can form an explosive mixture with air.
Ignitable mixtures can be formed in the empty container.
Do not smoke.
Use explosion-proofed equipment/fittings and non-sparkling tools.

Do not eat, drink, smoke or take drugs at work.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

Do not store together with oxidizing agents.
Do not store together with food and animal food/diet.

Keep container tightly closed.
Keep container in a well-ventilated place.
Protect from heat/overheating.
Protect from light.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Range [%]	Substance
40 - 60	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, Reg-No.: 01-2119452498-28-XXXX
	Long-term exposure: 50 ppm, 208 mg/m³
	Short-term exposure (15-minute): 100 ppm, 416 mg/m³

Ingredients with occupational exposure limits to be monitored (EU)

Range [%]	Substance / EC LIMIT VALUES
40 - 60	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, Reg-No.: 01-2119452498-28-XXXX
	Eight hours: 50 ppm
	Short-term (15-minute): 100 ppm

DNEL

Range [%]	Substance
40 - < 60	Methyl methacrylate, CAS: 80-62-6
	Industrial, dermal, Long-term - systemic effects: 13.67 mg/kg bw/d.
	Industrial, inhalative, Long-term - systemic effects: 208 mg/m³.
	general population, dermal, Long-term - systemic effects: 8.2 mg/kg bw/d.
	general population, inhalative, Long-term - systemic effects: 74,3 mg/m³.
40 - < 60	2,2'-Ethylenedioxydiethyl dimethacrylate, CAS: 109-16-0
	Industrial, dermal, Long-term - systemic effects: 13,9 mg/kg.
	Industrial, inhalative, Long-term - systemic effects: 48,5 mg/m³.

PNEC

Range [%]	Substance
40 - < 60	Methyl methacrylate, CAS: 80-62-6
	sediment (freshwater), 5.74 mg/kg.
	sewage treatment plants (STP), 10 mg/L.
	seawater, 0.94 mg/L.
	freshwater, 0.94 mg/L.
40 - < 60	2,2'-Ethylenedioxydiethyl dimethacrylate, CAS: 109-16-0
	sewage treatment plants (STP), 10 mg/l.
	soil, 0,274 mg/kg.
	sediment (seaater), 0,185 mg/kg.
	sediment (freshwater), 1,85 mg/kg.
	seawater, 0,0164 mg/l.
	freshwater, 0,164 mg/l.

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Safety glasses.
Hand protection	Butyl rubber, >120 min (EN 374). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Light protective clothing of plastic material. Protective clothing.
Other	Avoid contact with eyes and skin. Do not inhale vapours. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, filter A.
Thermal hazards	not applicable
Delimitation and monitoring of the environmental exposition	Comply with applicable environmental regulations limiting discharge to air, water and soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	colourless
Odor	characteristic
Odour threshold	No information available.
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	101
Flash point [°C]	10
Flammability (solid, gas) [°C]	430
Lower explosion limit	2,1 Vol.%
Upper explosion limit	12,5 Vol.%
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	4,7 (20°C)
Density [g/ml]	No information available.
Bulk density [kg/m³]	not applicable
Solubility in water	partially miscible
Partition coefficient [n-octanol/water]	No information available.
Viscosity	not applicable
Relative vapour density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	No information available.
Autoignition temperature [°C]	No information available.
Decomposition temperature [°C]	No information available.

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with peroxides and other radical components.
Reactions with strong oxidizing agents.
Formation of explosive gas/air mixtures.
Risk of polymerisation.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

Oxidizing agent

10.6 Hazardous decomposition products

No dangerous reactions known if used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
40 - < 60	Methyl methacrylate, CAS: 80-62-6
	LD50, dermal, Rabbit: > 5000 mg/kg.
	LD50, oral, Rat: > 5000 mg/kg OECD 401.
	LC50, inhalative, Rat: 29,8 mg/l.
40 - < 60	2,2'-Ethylenedioxydiethyl dimethacrylate, CAS: 109-16-0
	LD50, dermal, mouse: > 2000 mg/kg.
	LD50, oral, Rat: > 5000 mg/kg.
1 - <3	Dodecylmercaptane, CAS: 112-55-0
	LD50, oral, Rat: > 2000 mg/kg.

Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Irritant
Respiratory or skin sensitisation	Sensitizing.
Specific target organ toxicity — single exposure	May cause damage to organs through single exposure.
Specific target organ toxicity — repeated exposure	Based on available data, the classification criteria are not met.
Mutagenicity	Based on available data, the classification criteria are not met.
Reproduction toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
General remarks	Toxicological data of complete product are not available. The product was classified on the basis of the calculation procedure of the preparation directive. The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
40 - < 60	Methyl methacrylate, CAS: 80-62-6
	LC50, (96h), Oncorhynchus mykiss: > 79 mg/l OECD 203.
	EC50, (72h), Selenastrum capricornutum: > 110 mg/l OECD 201.
	EC50, (48h), Daphnia magna: 69 mg/l OECD 202.
40 - < 60	2,2'-Ethylenedioxydiethyl dimethacrylate, CAS: 109-16-0
	LC50, (96h), Danio rerio: 16,4 mg/l OECD 203.
	EC50, (72h), Pseudokirchneriella subcapitata: > 100 mg/l (OECD 201).
	NOEC, (72h), Algae: 18,6 mg/l.
	NOEC, (21d), Daphnia magna: 32 mg/l (OECD 211).

12.2 Persistence and degradability

Henry-Konstante: 5976 Pa*m³/mol (CAS 112-55-0)

Behaviour in environment compartments No information available.

Behaviour in sewage plant No information available.

Biological degradability 94%, 14d, OECD 301C (CAS 80-62-6)
85%, 28d, OECD 301B (CAS 109-16-0)

12.3 Bioaccumulative potential

log Pow: 6,18 (CAS 112-55-0)
log Pow: 2,3 (20°C, DIN 51562)(CAS 109-16-0)
log Pow: 1,38 (CAS 80-62-6)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

No classification on the basis of the calculation procedure of the preparation directive.
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Disposal in an incineration plant in accordance with the regulations of the local authorities. Coordinate disposal with the authorities if necessary.

Waste no. (recommended) 070104*

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product. Uncontaminated packaging may be taken for recycling.

Waste no. (recommended)
150110*
150101
150102
150104

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID UN 1247 Methyl methacrylate monomer, stabilized, solution 3 II

- Classification Code F1

- Label

- ADR LQ 1 l

- ADR 1.1.3.6 (8.6) Transport category (tunnel restriction code) 2 (D/E)

Inland navigation (ADN) UN 1247 Methyl methacrylate monomer, stabilized, solution 3 II

- Classification Code F1

- Label

Marine transport in accordance with IMDG UN 1247 Methyl methacrylate monomer, stabilized, solution 3 II

- EMS F-E, S-D

- Label

- IMDG LQ 1 l

Air transport in accordance with IATA UN 1247 Methyl methacrylate monomer, stabilized, solution 3 II

- Label

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not determined

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC; (EU) 2015/830
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2015).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (1999/13/CE)	~ 50%

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H335 May cause respiratory irritation.
H225 Highly flammable liquid and vapour.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Flam. Liq. 2: H225 Highly flammable liquid and vapour. (On basis of test data)
STOT SE 3: H335 May cause respiratory irritation. (Calculation method)
Skin Irrit. 2: H315 Causes skin irritation. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)

Modified position

SECTION 2 been added: P312 Call a POISON CENTER / doctor if you feel unwell.

SECTION 2 deleted: P337+P313 If eye irritation persists: Get medical advice / attention.

SECTION 2 been added: P280 Wear eye protection / face protection.

SECTION 2 deleted: P280 Wear protective gloves / eye protection / face protection.

SECTION 2 deleted: Eye Irrit. 2

SECTION 2 deleted: H319 Causes serious eye irritation.

SECTION 2 been added: P333+P313 If skin irritation or rash occurs: Get medical advice / attention.

SECTION 8 been added: Protective clothing.

SECTION 9 deleted: not determined

SECTION 9 been added: No information available.

SECTION 10 been added: No dangerous reactions known if used as directed.

SECTION 10 deleted: No hazardous decomposition products known.

SECTION 11 been added: Based on available data, the classification criteria are not met.

SECTION 11 deleted: not determined

SECTION 11 been added: May cause damage to organs through single exposure.

SECTION 12 deleted: not determined

SECTION 12 been added: No information available.

SECTION 16 been added: Calculation method