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

- 1.1 Product identifier**
Commercial product name: HinriDon Liquid
Product group: Liquid component
UFI: PHSY-K1CY-H00V-9NKA
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Use of the substance/mixture: Manufacture of dental products.
- 1.3 Details of the supplier of the safety data sheet**
Manufacturer: rettec® Kunststofftechnik GmbH
Street / mailbox: Industriestraße 2
Country code. / postal code / city: D-61191 Rosbach v.d.H
Phone: +49 (0) 6007 - 9157 0
Fax: +49 (0) 6007 - 9157 29
E-mail / Website: info@rettec-dent.de / www.retec-dent.de
Contact person: Herr Dr. Manfred Steinbach
e-mail: manfred.steinbach@rettec-dent.de
- Supplier:** ERNST HINRICHS Dental GmbH
Street / mailbox: Borsigstr. 1
Country code. / postal code / city: D - 38644 Goslar
Phone: 0 53 21 / 5 06 24
Fax: 0 53 21 / 5 08 81
E-mail / Website: info@hinrichs-dental.de / www.hinrichs-dental.de
- 1.4 Emergency telephone number:** +49 (0) 6007-91570

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture**
GB CLP Regulation
Flam. Liq. 2; H225
Skin Irrit. 2; H315
Skin Sens. 1; H317
STOT SE 3; H335
- Full text of hazard statements: see SECTION 16.
- 2.2 Label elements:**
GB CLP Regulation
Hazard components for labelling: Methyl methacrylate
1,4-Butandiol dimethacrylate
- Signal word:** Danger
- Pictograms:**
- Hazard statements:**
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.



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Precautionary statements:

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.
P280	Wear protective gloves/protective clothing/eye protection/face protection/ hearing protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use carbon dioxide (CO ₂), foam or dry powder to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to as hazardous waste - in accordance with local and national legislation - suitable, approved incinerator for combustible organic waste.

2.3 Other hazards No information available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical characterisation: Mixture based on methyl methacrylate.

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
80-62-6	Methyl methacrylate			90 - < 95 %
	201-297-1		01-2119452498-28	
	Flam. Liq. 1, Skin Irrit. 2, Skin Sens. 1, STOT SE 3; H224 H315 H317 H335			
2082-81-7	1,4-Butandiol dimethacrylate			5 - < 10 %
	218-218-1		01-2119967415-30	
	Skin Sens. 1; H317			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
80-62-6	201-297-1	Methyl methacrylate	90 - < 95 %
	inhalation: LC50 = 29,8 mg/l (vapours); dermal: LD50 = >5000 mg/kg; oral: LD50 = >5000 mg/kg		
2082-81-7	218-218-1	1,4-Butandiol dimethacrylate	5 - < 10 %
	dermal: LD50 = > 3000 mg/kg; oral: LD50 = > 10000 mg/kg		

SECTION 4: First aid measures

4.1 Description of first aid measures:

General information:

Remove contaminated, saturated clothing immediately. If skin irritation or rash occurs, get medical advice/attention. If eye irritation persists, get medical advice/attention.

After inhalation:

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

After contact with skin:

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.



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After contact with eyes:	After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
After ingestion:	Do NOT induce vomiting. Rinse mouth. Call a physician immediately.
4.2 Most important symptoms and effects, both acute and delayed:	Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction.
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	
Suitable extinguishing media:	Carbon dioxide (CO ₂), Foam, Extinguishing powder.
Unsuitable extinguishing media:	Full water jet.
5.2 Special hazards arising from the substance or mixture:	Highly flammable liquid and vapour. Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators. Vapours can form explosive mixtures with air.
5.3 Advice for firefighters:	Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.
Additional information:	Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	
General measures	Remove all sources of ignition.
6.2 Environmental precautions:	Do not allow to enter into surface water or drains.
6.3 Methods and material for containment and cleaning up:	
Other information:	Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.
6.4 Reference to other sections:	Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling:	
Advice on safe handling:	When using do not eat, drink, smoke, sniff. Use only in well-ventilated areas. Do not breathe gas/fumes/vapour/spray.
Advice on protection against fire and explosion:	Keep away from sources of ignition - No smoking. Flammable vapours can accumulate in headspace of closed systems. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.



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Advice on general occupational hygiene: Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling: Caution! Transport usually takes place at temperatures above the flash point.

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels: Keep container tightly closed. Keep in a cool, well-ventilated place. Protect from direct sunlight.

Advice on storage compatibility: Do not store together with: Material, oxygen-rich, Oxidising. Pyrophoric or self-heating substances.

Further information on storage conditions: Keep away from heat.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
80-62-6	Methyl methacrylate	50 100	208 416		TWA (8 h) STEL (15 min)	WEL WEL

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
80-62-6	Methyl methacrylate			
Worker DNEL, long-term		inhalation		208 mg/m ³
Worker DNEL, long-term		dermal		17 mg/kg bw/day

8.2 Exposure controls:
Appropriate engineering controls: If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Individual protection measures, such as personal protective equipment

Eye/face protection: Wear eye/face protection.

Hand protection: Wear suitable protective gloves. To protect against splashes: butyl; EN 374. To protect against immersion: butyl; 0.7 mm or thicker, EN 374. The suitability of gloves should be agreed with the manufacturer. Change gloves in the event of contamination or if the breakthrough time is exceeded. Resistance of the glove material: see information from the glove manufacturer.

Skin protection: Flame-retardant protective clothing. Wear anti-static footwear and clothing.



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Respiratory protection:

Wear suitable respiratory protection if technical measures are inadequate or not in place and exposure is to be expected that exceeds the DNEL (derived exposure level below which the substance does not cause any harm to human health). A suitable breathing mask with filter type A (EN141 or EN405) is recommended. A self-contained breathing apparatus may be necessary if particularly high vapour concentrations are formed.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless
Odour:	characteristic
Melting point/freezing point:	-48 °C
Boiling point or initial boiling point and boiling range:	100,5 °C
Flammability:	not applicable
Lower explosion limits:	2,1 vol. %
Upper explosion limits:	12,5 vol. %
Flash point:	10 °C
Auto-ignition temperature:	421 °C
Decomposition temperature:	not determined
pH-Value:	not determined
Water solubility:	12,5 g/L
(at 20 °C)	
Solubility in other solvents:	not determined
Partition coefficient n-octanol/water:	1,38
Vapour pressure:	36 hPa
(at 20 °C)	
Density (at 15,5 °C):	0,949 g/cm ³
Relative vapour density:	3,5
(at 20 °C)	

9.2 Other information

Information with regard to physical hazard classes

Self-ignition temperature	
Solid:	not applicable
Gas:	not applicable
Oxidizing properties:	Not oxidising.
Other safety characteristics	
Evaporation rate:	not determined
Solid content:	not determined
Viscosity / dynamic:	0,53 mPa·s
(at 20 °C)	

SECTION 10: Stability and reactivity

10.1 Reactivity:	Highly flammable, Vapours can form explosive mixtures with air.
10.2 Chemical stability:	The product is stable under storage at normal ambient temperatures.
10.3 Possibility of hazardous reactions:	Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.



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- 10.4 Conditions to avoid:** Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators. Protect from direct sunlight.
- 10.5 Incompatible materials:** Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.
- 10.6 Hazardous decomposition products** No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

Acute toxicity:

Based on available data, the classification criteria are not met.

ATEmix tested

LD50, oral
LD50, dermal
LC50, inhalative (vapour) (4h)

Dose	Species	Source
7870 mg/kg	Rat	
> 5000 mg/kg	Rabbit	
78 mg/l	Rat	

CAS No	Chemical name	Exposure routes	Dose	Species	Source	Method
80-62-6	Methyl methacrylate	oral	LD50 >5000 mg/kg	Rat	OECD 401	
		dermal	LD50 >5000 mg/kg	Rabbit		
		inhalative vapour	LC50 29,8 mg/l	Rat		
2082-81-7	1,4-Butandiol dimethacrylate	oral	LD50 >10000 mg/kg	Rat		
		dermal	LD50 >3000 mg/kg	Rabbit		

Irritation and corrosivity:

Causes skin irritation. Serious eye damage/eye irritation:
Based on available data, the classification criteria are not met.

Sensitising effects:

May cause an allergic skin reaction. (Methyl methacrylate; 1,4-Butandiol dimethacrylate)

Carcinogenic/mutagenic/toxic effects for reproduction:

Based on available data, the classification criteria are not met.

STOT-single exposure:

May cause respiratory irritation.
(Methyl methacrylate)

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on available data, the classification criteria are not met.



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Additional information on tests:

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP].

SECTION 12: Ecological information

12.1 Toxicity

Acute (short-term) fish toxicity

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
80-62-6	Methyl methacrylate					
	Acute fish toxicity	LC50 > 79mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	OECD 203	
	Acute algae toxicity	ErC50 > 110 mg/l	72 h	Selenastrum capricornutum	OECD 201	
	Acute crustacea toxicity	EC50 69 mg/l	48 h	Daphnia magna (Big water flea)	OECD 202	
	Crustacea toxicity	NOEC 37 mg/l	21 d	Daphnia magna (Big waterflea)	OECD 202	
2082-81-7	1,4-Butandiol dimethacrylate					
	Acute fish toxicity	LC50 32,5 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)		
	Acute crustacea toxicity	EC50 7,51 mg/l	48 h	Daphnia magna (Big water flea)	OECD 211	
	Crustacea toxicity	NOEC 7,51 mg/l		Selenastrum capricornutum		

12.2 Persistence and degradability:

Biodegradable.

12.3 Bioaccumulative potential:

On the basis of existing data about the elimination/degradation and bioaccumulation potential longer term damage to the environment is unlikely.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
80-62-6	Methyl methacrylate	1,38
2082-81-7	1,4-Butandiol dimethacrylate	3,1

12.4 Mobility in soil:

Mobility in soil: No adsorption in soil or sediment.

12.5 Results of PBT and vPvB assessment:

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.
This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Endocrine disrupting properties:

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Other adverse effects:

No information available.

Further information:

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods:



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Disposal recommendations:

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products:

070208: WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of plastics, synthetic rubber and man-made fibres; other still bottoms and reaction residues
Classified as hazardous waste.

Contaminated packaging:

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID):

14.1	UN number:	UN 1247
14.2	UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED
14.3	Transport hazard class(es):	3
14.4	Packing group:	II
	Hazard label:	3
	Classification code:	F1
	Limited quantity:	1 L
	Excepted quantity:	E2
	Transport category:	2
	Hazard No:	339
	Tunnel restriction code:	D/E
	Other applicable information (land transport)	SAPT: > 60 °C

Inland waterways transport (ADN)

14.1	UN number:	UN 1247
14.2	UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED
14.3	Transport hazard class(es):	3
14.4	Packing group:	II
	Hazard label:	3
	Classification code:	F1
	Limited quantity:	1 L
	Excepted quantity:	E2
	Other applicable information (inland waterways transport)	SAPT: > 60 °C

Marine transport (IMDG)

14.1	UN number:	UN 1247
14.2	UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED
14.3	Transport hazard class(es):	3
14.4	Packing group:	II
	Hazard label:	3
	Special Provisions:	-
	Limited quantity:	1 L
	Excepted quantity:	E2
	EmS:	F-E, S-D
	Other applicable information (marine transport)	SAPT: > 60 °C

Air transport (ICAO-TI/IATA-DGR)

14.1	UN number:	UN 1247
14.2	UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED



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14.3	Transport hazard class(es):	3
14.4	Packing group:	II
	Hazard label:	3
	Limited quantity Passenger:	1 L
	Passenger LQ:	Y-341
	Excepted quantity:	E2
	IATA-packing instructions - Passenger:	353
	IATA-max. quantity - Passenger:	5 L
	IATA-packing instructions - Cargo:	364
	IATA-max. quantity - Cargo:	60 L
	Other applicable information (air transport)	SAPT: > 60 °C
14.5	Environmental hazards	
	ENVIRONMENTALLY HAZARDOUS:	No
14.6	Special precautions for user	
	Warning:	Combustible liquids.
14.7	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	not applicable

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII): Entry 3, Entry 40

2010/75/EU (VOC): 90 % (854,1 g/l)

2004/42/EC (VOC): 90 % (854,1 g/l)

Information according to 2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water contaminating class (D): 1 - slightly water contaminating

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

15.2 Chemical safety assessment Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1 Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%

EU - Safety data sheet
according to UK REACH Regulation



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LD50: Lethal dose, 50%

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Flam. Liq. 2; H225	On basis of test data
Skin Irrit. 2; H315	Calculation method
Skin Sens. 1; H317	Calculation method
STOT SE 3; H335	Calculation method

Relevant H and EUH statements (number and full text)

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

16.2 Further Information:

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safetydata sheet.)