Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

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

1.1. Product identifier
3M ESPE KETAC GLAZE

Product Identification Numbers
70-2011-0451-3

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

Identified uses
Dental product

Restrictions on Use
For use only by dental professionals

1.3. Details of the supplier of the safety data sheet

Address:	3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.
Telephone:	+44 (0)1344 858 000
E Mail:	tox.uk@mmm.com
Website:	www.3M.com/uk

1.4. Emergency telephone number
+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
CLP REGULATION (EC) No 1272/2008

This product is a medical device as defined in Directive 93/42/EEC (MDD), which is invasive or used in direct physical contact with the human body, and therefore is exempt from the requirements of classification and labelling according to Regulation (EC) No. 1272/2008 (CLP; Article 1, paragraph 5). Although not required, the classification and label information, as applicable, is provided below.

CLASSIFICATION:
Skin Sensitization, Category 1B - Skin Sens. 1B; H317

Hazardous to the Aquatic Environment (Chronic), Category 3 - Aquatic Chronic 3; H412

For full text of H phrases, see Section 16.

2.2. Label elements
CLP REGULATION (EC) No 1272/2008

SIGNAL WORD
WARNING.

Symbols:
GHS07 (Exclamation mark) |

Pictograms

Ingredients:

Ingredient	CAS Nbr	% by Wt
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	1 - 5
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	42594-17-2	> 95
2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	93962-70-0	< 1

HAZARD STATEMENTS:

H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P280E	Wear protective gloves.

Response:

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

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Other hazards

For information on hazards and safe use, please consider the corresponding sections of this document.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EU Inventory	% by Wt	Classification
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	300-709-8	1 - 5	Skin Sens. 1, H317 (Self Classified)
2,2-Dimethoxy-1,2-diphenylethan-1-one	24650-42-8	246-386-6	< 0.5	
(Octahydro-4,7-methano-1H-	42594-17-2	255-901-3	> 95	Skin Sens. 1B, H317; Aquatic

indenediyl)bis(methylene) diacrylate				Chronic 3, H412 (Self Classified)
2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	93962-70-0	300-708-2	< 1	Skin Sens. 1, H317 (Self Classified)

Please see section 16 for the full text of any H statements referred to in this section

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye contact
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If swallowed
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1 Information on toxicological effects

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	During combustion.

5.3. Advice for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for

information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Contain spill. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Seal the container. Dispose of collected material as soon as possible.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. Acrylates may penetrate commonly-used gloves. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

8.2. Exposure controls

8.2.1. Engineering controls
Use in a well-ventilated area.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety glasses with side shields.

Skin/hand protection

See Section 7.1 for additional information on skin protection.

Respiratory protection
None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Liquid.
Appearance/Odour	slight acrylate odour, clear to slightly yellow, liquid
Odour threshold	*No data available.*
pH	*Not applicable.*
Boiling point/boiling range	*No data available.*
Melting point	*Not applicable.*
Flammability (solid, gas)	Not applicable.
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	> 100 °C [*Test Method:* Closed Cup]
Autoignition temperature	*No data available.*
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	<=1.3 Pa
Relative density	>=1 [*Ref Std:* WATER=1]
Water solubility	Nil
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Evaporation rate	*No data available.*
Vapour density	*No data available.*
Decomposition temperature	*No data available.*
Viscosity	*No data available.*
Density	*No data available.*

9.2. Other information

Molecular weight	*No data available.*
Percent volatile	*No data available.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Heat.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from 3M assessments.

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin contact
Contact with the skin during product use is not expected to result in significant irritation. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. Photosensitisation: Signs/symptoms may include a sunburn-like reaction such as blistering, redness, swelling, and itching from minor exposure to sunlight.

Eye contact
Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	Ingestion	Rat	LD50 15,400 mg/kg
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	Ingestion	Rat	LD50 > 1,600 mg/kg
2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg

2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	Ingestion	Rat	LD50 > 400 mg/kg
2,2-Dimethoxy-1,2-diphenylethan-1-one	Dermal	Rat	LD50 > 7,100 mg/kg
2,2-Dimethoxy-1,2-diphenylethan-1-one	Ingestion	Rat	LD50 > 6,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	Rabbit	No significant irritation
2,2-Dimethoxy-1,2-diphenylethan-1-one	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	Rabbit	Mild irritant
2,2-Dimethoxy-1,2-diphenylethan-1-one	Rabbit	No significant irritation

Skin Sensitisation

Name	Species	Value
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	Guinea pig	Sensitising
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	Professional judgement	Sensitising
2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	Professional judgement	Sensitising
2,2-Dimethoxy-1,2-diphenylethan-1-one	Guinea pig	Not sensitising

Photosensitisation

Name	Species	Value
2,2-Dimethoxy-1,2-diphenylethan-1-one	Guinea pig	Sensitising

Respiratory Sensitisation

For the component/components, either no data is currently available or the data is not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	In Vitro	Not mutagenic
2,2-Dimethoxy-1,2-diphenylethan-1-one	In Vitro	Not mutagenic

Carcinogenicity

For the component/components, either no data is currently available or the data is not sufficient for classification.

Reproductive Toxicity

Reproductive and/or Developmental Effects

For the component/components, either no data is currently available or the data is not sufficient for classification.

Target Organ(s)

Specific Target Organ Toxicity - single exposure

For the component/components, either no data is currently available or the data is not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2,2-Dimethoxy-1,2-diphenylethan-1-one	Dermal	photoirritation	All data are negative	Mouse	NOAEL Not available	not available
2,2-Dimethoxy-1,2-diphenylethan-1-one	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 138 mg/kg/day	3 months
2,2-Dimethoxy-1,2-diphenylethan-1-one	Ingestion	hematopoietic system | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 581 mg/kg/day	3 months
2,2-Dimethoxy-1,2-diphenylethan-1-one	Ingestion	auditory system | eyes	All data are negative	Rat	NOAEL 581 mg/kg/day	3 months

Aspiration Hazard
For the component/components, either no data is currently available or the data is not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	Ricefish	Experimental	48 hours	LC50	>1,000 mg/l
2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	93962-70-0		Data not available or insufficient for classification			
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	42594-17-2	Water flea	Experimental	48 hours	EC50	57 mg/l
2,2-Dimethoxy-1,2-diphenylethan-1-one	24650-42-8	Bluegill	Experimental	96 hours	LC50	6 mg/l
2,2-Dimethoxy-	24650-42-8	Water flea	Experimental	24 hours	EC50	=26 mg/l

1,2-diphenylethan-1-one						

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	93962-70-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	42594-17-2	Estimated Biodegradation	28 days	BOD	27 % weight	OECD 301F - Manometric respirometry
2,2-Dimethoxy-1,2-diphenylethan-1-one	24650-42-8	Estimated Biodegradation	28 days	BOD	70.3 % weight	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-[(2-hydroxyethyl)(3-methoxypropyl)amino]ethyl methacrylate	93962-70-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
[(3-methoxypropyl)imino]di-2,1-ethanediyl bismethacrylate	93962-71-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2,2-Dimethoxy-1,2-diphenylethan-1-one	24650-42-8	Estimated BCF - Other		Bioaccumulation factor	26.5	Estimated: Bioconcentration factor
(Octahydro-4,7-methano-1H-indenediyl)bis(methylene) diacrylate	42594-17-2	Estimated Bioconcentration		Bioaccumulation factor	232	Estimated: Bioconcentration factor

12.4. Mobility in soil
Please contact manufacturer for more details

12.5. Results of the PBT and vPvB assessment

No information available at this time, contact manufacturer for more details

12.6. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
See Section 11.1 Information on toxicological effects

Dispose of waste product in a permitted industrial waste facility.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)
180106* Chemicals consisting of or containing dangerous substances.

SECTION 14: Transportation information

70-2011-0451-3

Not hazardous for transportation

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this product are in compliance with the new substance notification requirements of CEPA.

15.2. Chemical Safety Assessment
Not applicable

SECTION 16: Other information

List of relevant H statements

H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

Revision information:
No revision information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our

knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

3M United Kingdom MSDSs are available at www.3M.com/uk