**Safety data sheet**
**according to Regulation (EC) No 1907/2006, Article 31**

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*

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

· **1.1 Product identifier**

· **Trade name:** **Quadrant Universal LC**

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture** Dental filling material

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Kulzer GmbH
Leipziger Straße 2, 63450 Hanau (Germany) Tel.: +49 (0)800 4372522
· **Distributor:**
Cavex Holland B.V.
Fustweg 5, 2031 CJ Haarlem, The Netherlands
+31 23 530 7700
dental@cavex.nl
www.cavex.nl

· **Informing department:** E-Mail: msds@kulzer-dental.com
· **1.4 Emergency telephone number:** Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

## SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**
Skin Sens. 1 H317 May cause an allergic skin reaction.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**
triethylen glycol dimethacrylate
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate
· **Hazard statements**
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
· **Precautionary statements**
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection.
P280 Wear protective clothing.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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

· **2.3 Other hazards** -
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable

## SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** -

· **Dangerous components:**

| | | |
|---|---|---|
| CAS: 109-16-0<br>EINECS: 203-652-6<br>Index number: 607-768-00-1<br>Reg.nr.: 01-2119969287-21-xxxx | triethylen glycol dimethacrylate<br>Skin Sens. 1B, H317 | ≥1-≤5% |
| CAS: 72869-86-4<br>EINECS: 276-957-5<br>Index number: 607-767-00-6<br>Reg.nr.: 01-2120751202-68-xxxx | 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate<br>Aquatic Chronic 2, H411<br>Skin Sens. 1B, H317 | ≥2.5-≤5% |

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

## SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **After inhalation** Supply fresh air; consult doctor in case of symptoms.
· **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.
· **After swallowing**
Rinse out mouth and then drink plenty of water.
In case of persistent symptoms consult doctor.
· **4.2 Most important symptoms and effects, both acute and delayed** Allergic reactions
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

## SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents**
$CO_2$, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
Use fire fighting measures that suit the environment.
· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
· **5.3 Advice for firefighters**
· **Protective equipment:** No special measures required.

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· **Additional information** -

## SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid contact with eyes and skin.
· **6.2 Environmental precautions:** Prevent material from reaching sewage system, holes and cellars.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
· **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.
-

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Store in cool, dry place in tightly closed containers.
No special precautions necessary if used correctly.
· **Information about protection against explosions and fires:** Avoid UV radiation/sunlight.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:**
Store in cool, dry place in tightly closed containers.
· **Information about storage in one common storage facility:** Not required
· **Further information about storage conditions:** None.
· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**
· **Components with critical values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Not required.

| · **DNELs** | | |
|---|---|---|
| **109-16-0 triethylen glycol dimethacrylate** | | |
| Oral | general population, long term, systemic | 8.33 mg/Kg (not defined) |
| Dermal | worker industrial, long term, systemic | 13.9 mg/Kg/d (not defined) |
| | general population, long term, systemic | 8.33 mg/Kg/d (not defined) |
| Inhalative | worker industrial, long term, systemic | 48.5 mg/m3 (not defined) |
| | general population, long term, systemic | 14.5 mg/m3 (not defined) |

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| **72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate** | | |
|---|---|---|
| Oral | general population, long term, systemic | 0.3 mg/Kg (not defined) |
| Dermal | worker industrial, long term, systemic | 1.3 mg/Kg/d (not defined) |
| | general population, long term, systemic | 0.7 mg/Kg/d (not defined) |
| Inhalative | worker industrial, long term, systemic | 3.3 mg/m3 (not defined) |
| | general population, long term, systemic | 0.6 mg/m3 (not defined) |

· **PNECs**

| **109-16-0 triethylen glycol dimethacrylate** | |
|---|---|
| freshwater | 0.016 mg/l (not defined) |
| marine water | 0.002 mg/l (not defined) |
| sewage treatment plant | 1.7 mg/l (not defined) |
| sediment, dry weight, freshwater | 0.185 mg/Kg (not defined) |
| sediment, dry weight, marine water | 0.018 mg/Kg (not defined) |
| soil, dry weight | 0.027 mg/Kg (not defined) |

| **72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate** | |
|---|---|
| freshwater | 0.01 mg/l (not defined) |
| marine water | 0.001 mg/l (not defined) |
| sewage treatment plant | 3.61 mg/l (not defined) |
| sediment, dry weight, freshwater | 4.56 mg/Kg (not defined) |
| sediment, dry weight, marine water | 0.46 mg/Kg (not defined) |
| soil, dry weight | 0.91 mg/Kg (not defined) |

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures**
Wash hands during breaks and at the end of the work.
· **Breathing equipment:** Use a mask with particle filter in case of dust generation.
· **Hand protection**
Check protective gloves prior to each use for their proper condition.
recommended
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Butyl rubber, BR
Nitrile rubber, NBR

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· **Eye/face protection** Tightly sealed safety glasses.
· **Body protection:** Light weight protective clothing

## SECTION 9: Physical and chemical properties

| | |
|---|---|
| · **9.1 Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Liquid |
| · **Colour:** | Different according to colour |
| · **Smell:** | Odourless |
| · **Odour threshold:** | Not determined |
| · **Melting point/freezing point:** | Not determined |
| · **Boiling point or initial boiling point and boiling range** | >200 °C ((1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate) |
| · **Flammability** | Not applicable |
| · **Lower and upper explosion limit** | |
| · **Lower:** | Not determined |
| · **Upper:** | Not determined |
| · **Flash point:** | >150 °C ((1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate) |
| · **Decomposition temperature:** | Not determined |
| · **SADT** | |
| · **pH** | Not determined |
| · **Viscosity:** | |
| · **Kinematic viscosity** | Not determined |
| · **dynamic:** | Not determined |
| · **Solubility** | |
| · **Water:** | Not miscible or difficult to mix |
| · **Partition coefficient n-octanol/water (log value)** | Not determined |
| · **Steam pressure at 20 °C:** | <1 hPa ((1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate) |
| · **Density and/or relative density** | |
| · **Density at 20 °C** | 0.94025-1.40654 g/cm³ |
| · **Relative density** | Not determined |
| · **Vapour density** | Not determined |
| · **9.2 Other information** | No further relevant information available. |
| · **Appearance:** | |
| · **Form:** | Fluid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Self-inflammability:** | Product is not selfigniting. |
| · **Explosive properties:** | Product is not explosive. Not determined |

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| | |
|---|---|
| · **Solvent content:** | |
| · **Water:** | 3-<3.5 % |
| · **Solids content:** | 0.0 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not determined |

| | |
|---|---|
| · **Information with regard to physical hazard classes** | |
| · **Explosives** | Void |
| · **Flammable gases** | Void |
| · **Aerosols** | Void |
| · **Oxidising gases** | Void |
| · **Gases under pressure** | Void |
| · **Flammable liquids** | Void |
| · **Flammable solids** | Void |
| · **Self-reactive substances and mixtures** | Void |
| · **Pyrophoric liquids** | Void |
| · **Pyrophoric solids** | Void |
| · **Self-heating substances and mixtures** | Void |
| · **Substances and mixtures, which emit flammable gases in contact with water** | Void |
| · **Oxidising liquids** | Void |
| · **Oxidising solids** | Void |
| · **Organic peroxides** | Void |
| · **Corrosive to metals** | Void |
| · **Desensitised explosives** | Void |

## SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Conditions to be avoided:** No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** None
· **Additional information:** -

## SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Based on available data, the classification criteria are not met.

| · **LD/LC50 values that are relevant for classification:** | | |
|---|---|---|
| **65997-18-4 frits, chemicals** | | |
| Oral | LD50 | >2,000 mg/kg (rat) (OECD 423) |
| Dermal | LD50 | >2,000 mg/kg (rat) (OECD 402) |

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| | | |
|---|---|---|
| **(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate** | | |
| Oral | LD50 | >5,000 mg/kg (rat) |
| **109-16-0 triethylen glycol dimethacrylate** | | |
| Oral | LD50 | 10,837 mg/kg (rat) |
| Dermal | LD50 | >2,000 mg/kg (mouse) |
| **72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate** | | |
| Oral | LD50 | >5,000 mg/kg (rat) (OECD 401) |
| Dermal | LD50 | >2,000 mg/kg (rat) (OECD 402) |

· **Primary irritant effect:**
· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation** May cause an allergic skin reaction.
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **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.

· **11.2 Information on other hazards**

| · **Endocrine disrupting properties** | | |
|---|---|---|
| 131-57-7 | Oxybenzone | List II |
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | List II |

## SECTION 12: Ecological information

· **12.1 Toxicity**

| · **Aquatic toxicity:** | |
|---|---|
| **65997-17-3 Glaspulver** | |
| EC50/72h | >1,000 mg/l (daphnia) |
| LC50/96h | >1,000 mg/l (fish) |
| ErC50 / 72 h | >1,000 mg/l (algae) |
| NOEC / 72h | 1,000 mg/l (algae) |
| | 1,000 mg/l (daphnia) |
| **65997-18-4 frits, chemicals** | |
| LC50/96h | ≥3.09 mg/l (fish) |
| ErC50 / 72 h | ≥2.4 mg/l (algae) |
| **(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate** | |
| LC50/96h | >100 mg/l (fish) (OECD 203) |
| **109-16-0 triethylen glycol dimethacrylate** | |
| EC50/21d | 51.9 mg/L (daphnia) (OECD 211) |
| LC50/96h | 16.4 mg/l (fish) (OECD 203) |

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| | |
|---|---|
| NOEC / 21d | 32 mg/l (daphnia) (OECD 211) |
| ErC50 / 72 h | >100 mg/l (algae) (OECD 201) |
| NOEC / 72h | 18.6 mg/l (algae) (OECD 201) |
| EbC50 / 72h | 72.8 mg/l (algae) (OECD 201) |
| **72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate** | |
| EC50/48h | >1.2 mg/l (daphnia) (OECD 202) |
| LC50/96h | 10.1 mg/l (fish) (OECD 203) |
| ErC50 / 72 h | >0.68 mg/l (algae) (OECD 201) |
| NOEC / 72h | 0.21 mg/l (algae) (OECD 201) |

| · **12.2 Persistence and degradability** | |
|---|---|
| **(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate** | |
| Biodegradation | 21 % /28d (not defined) (OECD 301F; ISO 9408/ EEC 92/69/V, C.4-D) |
| **109-16-0 triethylen glycol dimethacrylate** | |
| Biodegradation | 85 % /28d (not defined) (OECD 301B; ISO/ 9439/ EEC 92/69/V, C.4-C) |
| **72869-86-4 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate** | |
| Biodegradation | 22 % /28d (not defined) (OECD 301B; ISO/ 9439/ EEC 92/69/V, C.4-C) |

· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **12.6 Endocrine disrupting properties**
For information on endocrine disrupting properties see section 11.
· **12.7 Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.

## SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.

| · **European waste catalogue** | |
|---|---|
| 18 01 06* | chemicals consisting of or containing hazardous substances |

· **Uncleaned packagings:**
· **Recommendation:**
Disposal must be made according to official regulations.

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*Non contaminated packagings can be used for recycling.*

## SECTION 14: Transport information

| | |
|---|---|
| · **14.1 UN number or ID number** | |
| · **ADR, IMDG, IATA** | Void |
| · **14.2 UN proper shipping name** | |
| · **ADR, IMDG, IATA** | Void |
| · **14.3 Transport hazard class(es)** | |
| · **ADR, ADN, IMDG, IATA** | |
| · **Class** | Void |
| · **14.4 Packing group** | |
| · **ADR, IMDG, IATA** | Void |
| · **14.5 Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **14.6 Special precautions for user** | Not applicable |
| · **14.7 Maritime transport in bulk according to IMO instruments** | Not applicable |
| · **Transport/Additional information:** | - |
| · **UN "Model Regulation":** | Void |

## SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **Regulation (EU) No 649/2012**

None of the ingredients are included.

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

no information available

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· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**
no information available

· **Regulation (EC) No 273/2004 on drug precursors**
None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
None of the ingredients is listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H317 May cause an allergic skin reaction.
H411 Toxic to aquatic life with long lasting effects.

· **Date of previous version:** 23.09.2026

· **Abbreviations and acronyms:**
SADT: Self Accelerating Decomposition Temperature
ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· ***** Data compared to the previous version altered.**