



Safety Data Sheet REVOLUTION FORMULA 2 (all shades)

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

1.1. Product identifier

Product name : REVOLUTION FORMULA 2 (all shades)

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

Relevant identified uses

Main use category : Professional use

Function or use category : Dental product: Composite.

Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

KERRHAWE S.A.
Via Strecce n°4
6934 Bioggio (Switzerland)
T 00-800-41-050-505
E-mail: safety@kerrhawe.com

Manufacturer

Kerr Italia S.r.l.
Via Passanti, 332
84018 Scafati (SA) - Italy
T +39-081-850-8311
E-mail: safety@kerrhawe.com

Contact person : safety@kerrhawe.com - tel. 00-800-41-050-505 (08.00-17.00)

1.4. Emergency telephone number

Emergency number : CHEMTREC® Emergency Call Center. Emergency Telephone Number (for USA only) 001-800-424-9300 International and Maritime Telephone Number +1 (703) 527-3887

Country	Organisation/Company	Address	Emergency number
Gibraltar	GHA Call Centre Zone 2, Level3, St Bernard's Hospital	Harbour Views Road	+350 200 79700 +350 200 72266
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)
Malta	Medicines & Poisons Info Office	Mater Dei Hospital MSD Msida	+356 2545 6504
United Kingdom	National Poisons Information Service (Newcastle Unit)	Claremont Place Newcastle-upon-Tyne, Newcastle	+44 191 2606182/+44 191 2606180 24H

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1	H317
STOT SE 3	H335
Aquatic Chronic 4	H413

Full text of hazard classes and H-statements : see section 16

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP)



GHS07

Signal word (CLP)

: Warning

Hazardous ingredients

: 2,2'-ethylenedioxydiethyl dimethacrylate; Poly(oxy-1,2-ethanediyl), α,α' -[[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-

Hazard statements (CLP)

: H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H413 - May cause long lasting harmful effects to aquatic life

Precautionary statements (CLP)

: P261 - Avoid breathing vapours
P264 - Wash hands thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear eye protection, protective gloves
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to a hazardous or special waste collection point

Extra phrases

: The product is seen as a medical device and therefore not subject to labelling (EU-regulation 1272/2008, article 1, paragraph 5d).

2.3. Other hazards

Other hazards not contributing to the classification

: None under normal conditions.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,2'-ethylenedioxydiethyl dimethacrylate	(CAS No) 109-16-0 (EC No) 203-652-6 (REACH-no) 01-2119969287-21	10 - 30	Skin Sens. 1, H317
Poly(oxy-1,2-ethanediyl), α,α' -[[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	(CAS No) 41637-38-1 (EC No) 609-946-4 (REACH-no) 01-2119980659-17	10 - 30	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 STOT SE 3, H335 Aquatic Chronic 4, H413
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate	(CAS No) 1565-94-2 (EC No) 216-367-7 (REACH-no) N/A	5 - 15	Skin Irrit. 2, H315 Eye Irrit. 2, H319
3-Methacryloxypropyltrimethoxysilane	(CAS No) 2530-85-0 (EC No) 219-785-8 (REACH-no) 01-2119513216-50	1 - 5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of H-statements: see section 16

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures**

First-aid measures general

: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact	: Gently wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after 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.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

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

Treat symptomatically. In all cases of doubt, or when symptoms persist, seek medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire. Foam, carbon dioxide (CO2) and powder.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Non flammable.
Explosion hazard	: Product is not explosive.
Hazardous decomposition products in case of fire	: Carbon dioxide. Carbon monoxide. metallic oxide.

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not enter fire area without proper personal protective equipment, including respiratory protection.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Wear appropriate personal protective equipment - see Section 8. Avoid contact with skin and eyes.
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For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Discharging into rivers and drains is forbidden. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Collect all waste in suitable and labelled containers and dispose according to local legislation.
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

For further information refer to section 13. See Heading 8. Exposure controls and personal protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Precautions for safe handling	: Keep container tightly closed. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. Use personal protective equipment as required.
Hygiene measures	: Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store in a dry place. Keep container tightly closed. Store in original container. Store in a well-ventilated place.
Incompatible materials	: Oxidizing substances. reducing materials. Organic peroxides. Amines. Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters**

No additional information available

8.2. Exposure controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Personal protective equipment	: Gloves. Avoid all unnecessary exposure.
Hand protection	: Wear suitable gloves. Nitrile rubber gloves. Layer thickness : 0,2 - 0,4 mm. Breakthrough time : > 60 minutes. STANDARD EN 374.
Eye protection	: Use splash goggles when eye contact due to splashing is possible. Chemical goggles or safety glasses. EN 166
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation

**Other information**

: Do not eat, drink or smoke during use. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Physical state	: Liquid
Appearance	: Paste.
Colour	: Various.
Odour	: Fruity. Ester.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 2.5 g/ml
Solubility	: insoluble in water.
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Product is not explosive.
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

Additional information : None to our knowledge.

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No polymerization.

10.4. Conditions to avoid

Heat. No flames. Eliminate all sources of ignition. Direct sunlight. Hazardous polymerization may occur if exposed to high temperature.

10.5. Incompatible materials

Oxidizing agent. reducing materials. Organic peroxides. Amines.

10.6. Hazardous decomposition products

No decomposition if stored and used normally.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects**

Acute toxicity : Not classified

2,2'-ethylenedioxydiethyl dimethacrylate (109-16-0)

LD50 oral rat 10837 mg/kg

3-Methacryloxypropyltrimethoxysilane (2530-85-0)

LD50 oral rat > 30000 mg/kg

LD50 dermal rabbit > 15000 mg/kg

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Based on available data, the classification criteria are not met

Reproductive toxicity : Not classified

Based on available data, the classification criteria are not met

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified

Based on available data, the classification criteria are not met

Aspiration hazard : Not classified

Based on available data, the classification criteria are not met

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity**

Ecology - general : Avoid discharge to the environment.

Ecology - water : May cause long lasting harmful effects to aquatic life.

12.2. Persistence and degradability**REVOLUTION FORMULA 2 (all shades)**

Persistence and degradability May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential**REVOLUTION FORMULA 2 (all shades)**

Bioaccumulative potential No data.

(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate (1565-94-2)

Bioconcentration factor (BCF REACH) 2.46

Log Pow 4.94

3-Methacryloxypropyltrimethoxysilane (2530-85-0)

Log Pow 0.75

12.4. Mobility in soil**REVOLUTION FORMULA 2 (all shades)**

Ecology - soil insoluble in water.

12.5. Results of PBT and vPvB assessment**REVOLUTION FORMULA 2 (all shades)**

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects : None to our knowledge.

Additional information : No other effects known. Avoid release to the environment

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

Regional legislation (waste) : Dispose as hazardous waste.

Waste treatment methods : Recover the product with absorbent material. Dispose of contents/container in accordance with licensed collector's sorting instructions. Do not discharge into drains.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to a hazardous or special waste collection point.

Ecology - waste materials : Avoid release to the environment.

European List of Waste (LoW) code : 18 01 06* - chemicals consisting of or containing dangerous substances

SECTION 14: TRANSPORT INFORMATION

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number	
Not regulated for transport	
14.2. UN proper shipping name	
14.3. Transport hazard class(es)	
14.4. Packing group	
14.5. Environmental hazards	
No supplementary information available	

14.6. Special precautions for user**14.7. Transport in bulk according to Annex II of MARPOL 73/78 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-Regulations**

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	REVOLUTION FORMULA 2 (all shades) - 2,2'-ethylenedioxydiethyl dimethacrylate - Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-
3(c) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	REVOLUTION FORMULA 2 (all shades) - Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

National regulations

EC-regulation 2015/830 /EC, 1907/2006/EC (REACH), 1272/2008/EC (CLP), 790/2009/EC. Transport of dangerous goods (ADR/RID, IMDG, IATA/ICAO). Workplace exposure limits.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: OTHER INFORMATION

Indication of changes:

Composition/information on ingredients. Hazards identification. Label elements. Waste disposal recommendations.

2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Added	
2.2	Hazard pictograms (CLP)	Added	
2.2	Precautionary statements (CLP)	Added	
2.2	Hazard statements (CLP)	Added	
2.2	Signal word (CLP)	Added	
2.2	EUH-statements	Removed	
3	Composition/information on ingredients	Modified	
4.1	First-aid measures after ingestion	Modified	
4.1	First-aid measures general	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after inhalation	Modified	
4.1	First-aid measures after eye contact	Modified	
4.2	Symptoms/injuries after inhalation	Added	
4.2	Symptoms/injuries after skin contact	Added	
4.2	Symptoms/injuries	Removed	
4.2	Symptoms/injuries after eye contact	Added	
4.3	Other medical advice or treatment	Modified	
5.2	Hazardous decomposition products in case of fire	Modified	
5.3	Firefighting instructions	Modified	
6.1	General measures	Modified	
6.1	Protective equipment	Added	
6.1	Emergency procedures	Added	
6.2	Environmental precautions	Modified	
6.3	Methods for cleaning up	Modified	
7.1	Hygiene measures	Added	
7.1	Precautions for safe handling	Modified	
7.2	Storage conditions	Modified	
7.2	Incompatible materials	Modified	
8.2	Hand protection	Modified	
8.2	Eye protection	Modified	
8.2	Personal protective equipment	Modified	
9.1	Solubility	Modified	
10.3	Possibility of hazardous reactions	Modified	
10.4	Conditions to avoid	Modified	
11.1	Potential adverse human health effects and symptoms	Modified	
12.1	Ecology - general	Modified	
12.1	Ecology - water	Added	
12.2	Persistence and degradability	Modified	
12.4	Ecology - soil	Modified	
13.1	European List of Waste (LoW) code	Modified	
13.1	Waste treatment	Modified	

	methods		
13.1	Regional legislation (waste)	Modified	
13.1	Waste disposal recommendations	Modified	
16	Data sources	Added	
16	Other information	Added	

Data sources : EC-regulation 2015/830 /EC, 1907/2006/EC (REACH), 1272/2008/EC (CLP), 790/2009/EC. Transport of dangerous goods (ADR/RID, IMDG, IATA/ICAO). Workplace exposure limits.

Other information : None.

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Version : 6.0

Signature : A. Åsebø Murel

Full text of H- and EUH-statements:

Aquatic Chronic 4	Hazardous to the aquatic environment — Chronic Hazard, Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, Category 1
Skin Sens. 1A	Sensitisation — Skin, category 1A
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H413	May cause long lasting harmful effects to aquatic life

The information in this safety data sheet is based on information from the manufacturer/supplier, present European and national legislation, and presupposes that the product is used within the specified area of application.