SAFETY DATA SHEETS

This SDS packet was issued with item:

074264974

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

074265005 070371872 074264420 074264784 074264800 074264818 074264826 074264834 074264842 074264859 074264867 074264875 074264883 074264891 074264909 074264917 074264925 074264933 074264941 074264958 074264966 074264982 074264990 074265013 074265021 074265039 074265047 074265054

KERR

Material **S**afety **D**ata **S**heet
in accordance with Community Regulation 2006/1907/EC (R.E.A.Ch.)

Revision Date: 05th September 2008

SECTION 1
Product & Company identification

1.1 Product name
HERCULITE XRV (all shades)

1.2 Uses/Application:
Dental restorative material.

1.3 Company (Name, address and info phone number)
KERR ITALIA S.r.l.
Via Passanti, 332
84018 Scafati (SA) - Italy
Free Phone: 00-800-41-050-505

1.4 Emergency phone (according to communitarian directive 99/45/EC, article 17)
+39.081.8508.325 (08.00-17.00, European time, GMT+1)
E-mail address: safety@kerrhawe.com

SECTION 2
Hazard identification

2.1 Hazard classification (according to communitarian directives 67/548/EEC & 99/45/EC)
None (Enamel & Dentin shades);
Sensitizing (Incisal shade only).

2.2 Other hazard
Uncured material may be harmful if swallowed.

SECTION 3
Composition/Information on Ingredients
(according to communitarian directives 67/548/EEC, 99/45/EC & 2001/58/EC)

3.1 Hazardous ingredients

HAZARDOUS INGREDIENTS	%	HAZARD SYMBOLS	RISK PHRASES	CAS N.	EINECS N.
1,6 Hexanediol Diacrylate*	2 - 3	Xi	36/38-43	13048-33-4	235-921-9
Zinc Oxide (ZnO)	< 0,1	N	50-53	1314-13-2	215-222-5

* Contained only in Incisal shade.

3.2 Other non-hazardous ingredients
Uncured Methacrylate Ester Monomers, Titanium Dioxide (TiO_2) and pigments.

SECTION 4
First aid measures

4.1 Treatment for eye contact: Flush with water for 15 minutes including under eyelids.

4.2 Treatment for skin contact: Wash thoroughly with soap and water.

4.3 Treatment for inhalation (breathing): Remove to fresh air - get medical attention if discomfort persists.

4.4 Treatment for ingestion (swallowing): Rinse mouth out with water - do not induce vomiting. Seek medical attention

SECTION 5
Fire-fighting Measures

5.1 Suitable extinguishing media: Chemical foam, CO_2, dry chemical.

5.2 Forbidden extinguishing media: Unknown.

5.3 Special fire fighting measures: None. Wear a self contained breathing apparatus.

5.4 Unusual fire and explosion hazards: Heat can cause polymerization with rapid release of energy.

5.5 Special protection equipment: Sealed overall against liquids and gases**.**

SECTION 6
Accidental Release Measures

6.1 Personal Precautions: Follow recommended precautions listed in other sections.

6.2 Environmental Precautions: Material should not be allowed to drain into sewers.

6.3 Reclaiming Methods: Absorb with inert material. Prevent spilled material to reach sewers.

SECTION 7
Handling and Storage (according to article 5 of communitarian directive 98/24/EC)

7.1 Handling Precautions: Handle away from sources of ignition. Avoid exposure to excessive heat.

7.2 Precautions in case of Fire and Explosion: Extinguish all ignition sources.

7.3 Storage Conditions: Store in a cool, dry place away from heat, light and ignition sources.

7.4 Suggested container(s): Original sealed containers provided by manufacturer.

7.5 Indication for Combined Storage: Avoid the contact with reducing and oxidizing agents, peroxides and amines.

7.6 Environmental precautions: Do not allow product to reach sewers and rivers.

7.7 Other Precautions: Use according to directions.

SECTION 8 **Exposure controls/personal protection**	
8.1 Exposure Limits:	**TiO_2** PEL/TLV: 3,1ppm (10mg/m^3); **ZnO** TWA: 0,6ppm (2 mg/m^3); STEL: 3 ppm (10 mg/m^3)
8.2 Exposure control measures *8.2.1 Precautionary Measures:* *(according to communitarian directives 89/686/EEC & article 4 of 98/24/EC)*	
Ventilation:	Local Exhaust Ventilation: Good general ventilation should be sufficient to control airborne levels of vapours released by uncured material. Special Ventilation: None required. Mechanical (General) Ventilation: Good general ventilation recommended. Other Ventilation: None required.
Respiratory Protection:	Avoid prolonged or excessive breathing of vapours of uncured material
Hands Protection:	Impervious rubber gloves recommended when contacting uncured material
Eyes Protection:	Not required if used as directed. Safety glasses may be used.
Skin Protection:	Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure to uncured material.
Other Protective Equipments:	It would be better use a lab coat.
Measures listed in this paragraph are to be considered as indications and NOT prescriptions (89/656/EEC)	
8.2.2 Environment exposure control measures Not Applicable.	

SECTION 9 **Physical and Chemical Properties**	
9.1 General information	
Appearance: Pigmented paste	Odour: Fruity ester-like odour.
9.2 Information related to health, safety and environment	
pH: Not available Boiling point: Not determined (N/D) Flash point: Not determined Flammability: Not flammable. Lower Explosivity Limit (L.E.L.): N/A Upper Explosivity Limit (U.E.L.): N/A Oxidizing properties: None Vapour pressure: Not determined	Relative density: Not determined Specific gravity: 2,4 g/ml Solubility: Insoluble Partition coefficient n-octanol/water: N/D Viscosity: Not determined Vapour density (air = 1): Not determined Evaporation rate (n-butane = 1): Not determined Melting point: Not determined
9.3 Other information (according to communitarian directive 94/9/EC):	
Miscibility: Not determined Solubility in Lipids: Not determined	Conducibility: Not determined Gases Group: N/A

SECTION 10
Stability and Reactivity

Stability: Stable if stored as directed.

10.1 Conditions to avoid: Heat, light, aging and contamination.

10.2 Materials to avoid (incompatibility): Reducing and oxidizing agents, peroxides and amines.

10.3 Hazardous decomposition products: Carbon oxides.

Other precautions:

Hazardous Polymerization Products: May occur

Safety significance in case of change in physical appearance: None

Stabilizers: The product is stabilized with non-hazardous polymerization inhibitors.

SECTION 11
Toxicological Information

CMR effects (Carcinogenicity, Mutagenicity and toxicity for reproduction):

No

Effects and hazards of eye contact: May cause irritation and damage if not removed promptly.

Effects and hazards of skin contact: Prolonged or repeated exposure to uncured material may cause irritation or skin rash especially in sensitive individuals.

Effects and hazards of Inhalation (Breathing): Prolonged or excessive inhalation may cause respiratory tract irritation.

Effects and hazards of Ingestion (Swallowing): Uncured material may be harmful if swallowed.

Effects for prolonged Exposure: Unknown.

Toxic-kinetic effects: Unknown.

Effects on metabolism: Unknown.

Toxicological data for ingredients:

Titanium Dioxide	LD_{50} (oral rat)	> 20000 mg/Kg
	LD_{50} (skin rabbit)	> 10000 mg/Kg
	LC_{50} (inhalation rat/4hrs)	> 6,8 mg/l
ZnO (Acute toxicity):	LD_{50} (oral mouse)	7950 mg/Kg
	LD_{50} (skin rat)	> 2000 mg/Kg
	LD_{Lo} (oral human)	500 mg/Kg
	LC_{50} (inhalation rat/4hrs)	> 5700 mg/m^3 (4 hrs)

SECTION 12
Ecological Information
This product has not known ecological hazardous effects.

12.1 Eco-toxicity: Not available

12.2 Mobility: Not available

12.3 Persistence and degradability: Not available

12.4 Bioaccumulative potential: Not available

12.5 Results of PBT (Persistent Bio-Toxicity) assessment: Not available

12.6 Other adverse effects: Not available

Aquatic toxicity data for ingredients:

Titanium Dioxide	LC_{50} (Leuciscus Idus)	> 1000 mg/l (48 hours)
	EC_{50} (Daphnia magna, crustacea)	> 3 mg/l (30days)
	EC_{50} (Pseudomonas fluorescens)	> 10000 mg/l (24 hours)
ZnO	EC_{50} (Daphnia magna)	> 1000 mg/l (48 hrs)
	LC_{50} (Oncorhynchus mykiss)	1,1 mg/l (96 hrs)
	LC_{50} (Lepomis macrochirus)	> 320 mg/l (96 hrs)
	LC_{50} (Pimephales promelas)	2246 mg/l (96 hrs)
	EC_{50} (Selenastrum capricornutum)	0,17 mg/l (72 hr; Lisec 1997)

SECTION 13
Disposal considerations
Unpolymerized (uncured) material may be hazardous waste. Dispose of in accordance of local regulations.

SECTION 14
Transport information

14.1 Sea transportation (IMDG)
The product is not regulated.

14.2 Air transportation (ICAO/IATA)
The product is not regulated.

14.3 Transportation by Road/Railway (RID/ADR)
The product is not regulated.

SECTION 15 (Classification according to communitarian directives 67/548/EEC & 99/45/EC)
Regulatory information

Hazard labelling not required.
This product is an exempted medical device (directive 1999/45/EC, article 1, paragraph 5g).

SECTION 16
Other information

16.1 Risk phrases of all ingredients

43 May cause sensitisation by skin contact.
36/38 Irritating to eyes and skin.
50 Very toxic to aquatic organisms.
53 May cause long-term adverse effects in the aquatic environment.

16.1.1 Safety phrases of all ingredients

2 Keep out of the reach of children.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
39 Wear eye/face protection.

16.2 Sources of key data used to compile the Safety Data Sheet:

European **C**hemicals **B**ureau (ECB – www.ecb.jrc.it)
European chemical **S**ubstances **I**nformation **S**ystem (ESIS - www.ecb.jrc.it/esis)
A.C.G.I.H. (www.**acgih**.org)
N.I.OS.H. (www.cdc.gov/niosh/)
O.S.H.A. (www.**osha**.gov/)
U.E. (www.europa.eu/index_it.htm)
I.A.R.C. (www.iarc.fr/)
N.T.P. (www.**ntp**.niehs.nih.gov)

European Community Directives:

67/548/EEC:	Classification, packaging and labelling of dangerous substances.
99/45/EC:	Directive concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.
2001/58/EC:	Second amendment of directive 91/155/EEC for the definition of a detailed arrangement of specific information relating to dangerous preparations (art. 14 of 99/45/EC) and substances (art. 27 of 67/548/EEC).
89/656/EEC:	Directive on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace (third individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC).
89/686/EEC:	Approximation of the laws of the Member States relating to personal protective equipment.
94/9/EC:	Approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres
98/24/EC:	Protection of the health and safety of workers from the risks related to chemical agents at work.

Document modification history: First version in compliance of Community Regulation 2006/1907/EC (R.E.A.Ch.)

CAUTION: PRODUCT FOR PROFESSIONAL USE

The information on this Safety Sheet is based on presently available data and to our best knowledge for the correct handling of the product under normal conditions. Any use of this product in any way not indicated on this Sheet or the use of this product together with any other process/procedure will be exclusively under the user's responsibility. This document does not constitute explicit or implicit warranty of product quality or fitness for a particular purpose.

SAFETY DATA SHEET

Herculite XRV

Section 1. Identification

GHS product identifier : Herculite XRV

Other means of identification : Not available.

Product type : Paste.

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

Product use : Dental product: Composite

Area of application : Professional applications.

Manufacturer : **Kerr Corporation**
1717 West Collins Avenue
Orange, CA 92867-5422
Telephone no.: 1-800-KERR-123

e-mail address of person responsible for this SDS : edwin.varela@kavokerrgroup.com

Emergency telephone number (with hours of operation) : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Health effects are based on the uncured material.

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 36.8%

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause respiratory irritation.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Product code : Not available.

Ingredient name	Other names	%	CAS number
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	7,7,9(or 7,9,9)-trimethyl-4, 13-dioxo-3,14-dioxa-5, 12-diazahexadecane-1, 16-diyl bismethacrylate	5-10	72869-86-4
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	Not available.	5-10	41637-38-1
1,6-hexanediyl bismethacrylate	1,6-hexanediyl bismethacrylate	5-10	6606-59-3
2,2'-ethylenedioxydiethyl dimethacrylate	2,2'-ethylenedioxydiethyl dimethacrylate	5-10	109-16-0
hexamethylene diacrylate	hexamethylene diacrylate	1-5	13048-33-4
3-trimethoxysilylpropyl methacrylate	3-trimethoxysilylpropyl methacrylate	1-5	2530-85-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

Inhalation : No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Skin contact : No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes skin irritation.

Ingestion : Harmful if swallowed. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

Special protective actions for fire-fighters : In case of major fire and large quantities: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely

For emergency responders : Low release. See also the information in "For non-emergency personnel".

Environmental precautions : Low release. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Large spill : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose in a safe manner.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
hexamethylene diacrylate	**AIHA WEEL (United States, 10/2011). Skin sensitizer.** TWA: 1 mg/m³ 8 hours.

Appropriate engineering controls : No special measures are required for small quantities under normal and intended conditions of product use.

Environmental exposure controls : No special measures are required for small quantities under normal and intended conditions of product use.

Individual protection measures

Hygiene measures : No special measures are required for small quantities under normal and intended conditions of product use.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : No special measures are required for small quantities under normal and intended conditions of product use.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : No special measures are required for small quantities under normal and intended conditions of product use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Paste.]

Color : Various

Odor : Fruity ester-like

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Not available.

Flash point : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not applicable.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 2.5 [Water = 1]

Solubility : Insoluble in the following materials: cold water and hot water.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Keep away from heat. Light. Heat can cause polymerization with rapid release of energy.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and reducing materials.
Peroxide.
Amine.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-ethylenedioxydiethyl dimethacrylate	LD50 Oral	Rat	10837 mg/kg	-
hexamethylene diacrylate	LD50 Oral	Rat	5 g/kg	-
3-trimethoxysilylpropyl methacrylate	LD50 Oral	Rat	23504 mg/kg	-
Herculite XRV	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>1000 mg/kg	-

Conclusion/Summary : Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.
Based on analysis and test results, this product is considered as biocompatible per EN ISO 7405:2008 and EN ISO 10993-1:2009.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
hexamethylene diacrylate	Skin - Severe irritant	Rabbit	-	24 hours 500 milligrams	-
3-trimethoxysilylpropyl methacrylate	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Herculite XRV	skin	Guinea pig	Not sensitizing

Mutagenicity

Not available.

Conclusion/Summary : Not mutagenic in Ames test.

Carcinogenicity

Section 11. Toxicological information

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5, 12-diazahexadecane-1,16-diyl bismethacrylate	Category 3	Not applicable.	Respiratory tract irritation
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	Category 3	Not applicable.	Respiratory tract irritation
1,6-hexanediyl bismethacrylate	Category 3	Not applicable.	Respiratory tract irritation
2,2'-ethylenedioxydiethyl dimethacrylate	Category 3	Not applicable.	Respiratory tract irritation
hexamethylene diacrylate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes skin irritation.

Ingestion : Harmful if swallowed. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Section 11. Toxicological information

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
7,7,9(or 7,9,9)-trimethyl-4, 13-dioxo-3,14-dioxa-5, 12-diazahexadecane-1, 16-diyl bismethacrylate	3	-	low
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	3.43 to 5.62	2372	high
2,2'-ethylenedioxydiethyl dimethacrylate	1.88	-	low
hexamethylene diacrylate	2.81	-	low
3-trimethoxysilylpropyl methacrylate	2.1	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: mequinol; oxybenzone

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: zinc oxide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Section 15. Regulatory information

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ethylene oxide	<0.0083	Yes.	1000	-	10	-

SARA 304 RQ : 133868.8 lbs / 60776.4 kg [6422.2 gal / 24310.6 L]

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3, 14-dioxa-5,12-diazahexadecane-1, 16-diyl bismethacrylate	5-10	No.	No.	Yes.	Yes.	No.
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	5-10	No.	No.	No.	Yes.	No.
1,6-hexanediyl bismethacrylate	5-10	No.	No.	Yes.	Yes.	No.
2,2'-ethylenedioxydiethyl dimethacrylate	5-10	Yes.	No.	No.	Yes.	No.
hexamethylene diacrylate	1-5	No.	No.	No.	Yes.	No.
3-trimethoxysilylpropyl methacrylate	1-5	No.	No.	No.	Yes.	No.

SARA 313

Not applicable.

State regulations

Massachusetts : The following components are listed: MINERAL WOOL FIBER

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

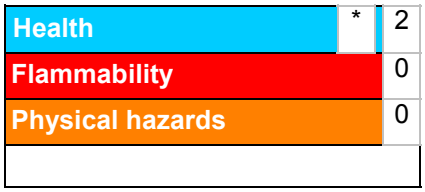
California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethylene oxide	Yes.	Yes.	Yes.	Yes.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

Section 16. Other information

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision	:	02/26/2015
Date of previous issue	:	No previous validation
Version	:	1
Prepared by	:	IHS
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	:	HCS (U.S.A.)- Hazard Communication Standard International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.