



## Safety Data Sheet according to Regulation (EC) No 1907/2006

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LOCTITE EDAG 452SS E&C known as ELECTRODAG452SS

SDS No. : 326077  
V007.0

Revision: 28.04.2017  
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Replaces version from: 17.07.2015

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

#### 1.1. Product identifier

LOCTITE EDAG 452SS E&C known as ELECTRODAG452SS

#### Contains:

2-[(3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-yl)oxy]ethyl acrylate  
1,6-Hexanediol diacrylate  
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate  
Isobornyl acrylate

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

Intended use:  
UV curable dielectric ink

#### 1.3. Details of the supplier of the safety data sheet

Henkel Ltd  
Wood Lane End  
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000  
Fax-no.: +44 1442 278071

ua-productsafety.uk@henkel.com

#### 1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

### SECTION 2: Hazards identification


#### 2.1. Classification of the substance or mixture

##### Classification (CLP):

Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Specific target organ toxicity - single exposure	Category 3
H335 May cause respiratory irritation. Target organ: respiratory tract irritation	
Chronic hazards to the aquatic environment	Category 2
H411 Toxic to aquatic life with long lasting effects.	

## 2.2. Label elements

### Label elements (CLP):

<b>Hazard pictogram:</b>		
<b>Signal word:</b>	Warning	
<b>Hazard statement:</b>	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H411 Toxic to aquatic life with long lasting effects.	
<b>Precautionary statement:</b> <b>Prevention</b>	P261 Avoid breathing vapours. P273 Avoid release to the environment. P280 Wear protective gloves.	
<b>Precautionary statement:</b> <b>Response</b>	P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention.	

## 2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Base substances of preparation:

Pigment  
Polyacrylate

**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
2-[(3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-yl)oxy]ethyl acrylate 65983-31-5	265-991-6	25- 50 %	Skin Irrit. 2; Dermal H315 Eye Irrit. 2 H319 STOT SE 3; Inhalation H335 Aquatic Chronic 2 H411
Acrylated urethane oligomer~		20- 40 %	Eye Irrit. 2 H319
1,6-Hexanediol diacrylate 13048-33-4	235-921-9 01-2119484737-22	1- < 5 %	Eye Irrit. 2 H319 Skin Sens. 1A H317 Skin Irrit. 2 H315 Aquatic Chronic 3 H412
2,2-Diethoxyacetophenone 6175-45-7	228-220-4	1- < 5 %	STOT SE 3; Inhalation H335
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	246-386-6	0,1- < 1 %	Aquatic Chronic 1 H410 Aquatic Acute 1 H400
Isobornyl acrylate 5888-33-5	227-561-6 01-2119957862-25	0,1- < 1 %	Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Sens. 1B H317 Aquatic Acute 1 H400 Aquatic Chronic 1 H410
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl- 2,1-ethanediyl)] diacrylate 42978-66-5	256-032-2 01-2119484613-34	0,1- < 1 %	Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Skin Sens. 1 H317 Aquatic Chronic 2 H411

For full text of the H - statements and other abbreviations see section 16 "Other information".  
Substances without classification may have community workplace exposure limits available.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Inhalation:

Move to fresh air.

In case of adverse health effects seek medical advice.

**Skin contact:**

Rinse with running water and soap. Apply replenishing cream. Change all contaminated clothing.  
In case of adverse health effects seek medical advice.

**Eye contact:**

Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remain (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

**Ingestion:**

Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.  
Seek medical attention from a specialist.

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

EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

SKIN: Rash, Urticaria.

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

See section: Description of first aid measures

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**

**Suitable extinguishing media:**

Carbon dioxide, foam, powder  
Water spray jet

**Extinguishing media which must not be used for safety reasons:**

High pressure waterjet

**5.2. Special hazards arising from the substance or mixture**

The product may undergo spontaneous polymerization at high temperatures. Polymerization is exothermic and may cause damage to the container and/or release of thermal decomposition products.

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

**Additional information:**

In case of fire, keep containers cool with water spray.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Avoid skin and eye contact.

**6.2. Environmental precautions**

Do not empty into drains / surface water / ground water.

**6.3. Methods and material for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Dispose of contaminated material as waste according to Section 13.

**6.4. Reference to other sections**

See advice in section 8

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Avoid skin and eye contact.  
Ensure good ventilation/suction at the workplace.  
See advice in section 8

## Hygiene measures:

Do not eat, drink or smoke while working.  
Wash hands before work breaks and after finishing work.  
Good industrial hygiene practices should be observed.

**7.2. Conditions for safe storage, including any incompatibilities**

Store in sealed original container.  
Store in a dry place.  
Refer to Technical Data Sheet

**7.3. Specific end use(s)**

UV curable dielectric ink

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Occupational Exposure Limits**

Valid for  
Great Britain

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> ) 14807-96-6 [TALC, RESPIRABLE DUST]		1	Time Weighted Average (TWA):		EH40 WEL
Polyethylene 9002-88-4 [DUST, INHALABLE DUST]		10	Time Weighted Average (TWA):		EH40 WEL
Polyethylene 9002-88-4 [DUST, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		EH40 WEL

**Occupational Exposure Limits**

Valid for  
Ireland

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> ) 14807-96-6 [TALC, TOTAL INHALABLE DUST]		10	Time Weighted Average (TWA):		IR_OEL
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> ) 14807-96-6 [TALC, RESPIRABLE DUST]		0,8	Time Weighted Average (TWA):		IR_OEL
Polyethylene 9002-88-4 [DUSTS, NON-SPECIFIC, RESPIRABLE]		4	Time Weighted Average (TWA):		IR_OEL
Polyethylene 9002-88-4 [DUSTS, NON-SPECIFIC, TOTAL INHALABLE]		10	Time Weighted Average (TWA):		IR_OEL

**Predicted No-Effect Concentration (PNEC):**

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Hexamethylene diacrylate 13048-33-4	aqua (freshwater)					0,0015 mg/L	
Hexamethylene diacrylate 13048-33-4	aqua (marine water)					0,00015 mg/L	
Hexamethylene diacrylate 13048-33-4	soil					0,00397 mg/kg	
Hexamethylene diacrylate 13048-33-4	sewage treatment plant (STP)					2,7 mg/L	
Hexamethylene diacrylate 13048-33-4	sediment (freshwater)					0,0243 mg/kg	
Hexamethylene diacrylate 13048-33-4	sediment (marine water)					0,00243 mg/kg	
Isobornyl acrylate 5888-33-5	aqua (freshwater)		0,00092 mg/l				
Isobornyl acrylate 5888-33-5	aqua (marine water)		0,000092 mg/l				
Isobornyl acrylate 5888-33-5	sewage treatment plant (STP)		2 mg/l				
Isobornyl acrylate 5888-33-5	aqua (intermittent releases)		0,00704 mg/l				
Isobornyl acrylate 5888-33-5	sediment (freshwater)					0,145 mg/kg	
Isobornyl acrylate 5888-33-5	sediment (marine water)					0,0145 mg/kg	
Isobornyl acrylate 5888-33-5	soil					0,0285 mg/kg	
Isobornyl acrylate 5888-33-5	Air						
Isobornyl acrylate 5888-33-5	Predator						
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl- 2,1-ethanediyl)] diacrylate 42978-66-5	aqua (freshwater)		0,0073 mg/l				
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl- 2,1-ethanediyl)] diacrylate 42978-66-5	aqua (marine water)		0,0007 mg/l				
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl- 2,1-ethanediyl)] diacrylate 42978-66-5	sewage treatment plant (STP)		100 mg/l				
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl- 2,1-ethanediyl)] diacrylate 42978-66-5	aqua (intermittent releases)		0,73 mg/l				
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl- 2,1-ethanediyl)] diacrylate 42978-66-5	soil					0,00243 mg/kg	
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl- 2,1-ethanediyl)] diacrylate 42978-66-5	sediment (freshwater)					0,19 mg/kg	

**Derived No-Effect Level (DNEL):**

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Hexamethylene diacrylate 13048-33-4	Workers	dermal	Long term exposure - systemic effects		2,77 mg/kg	
Hexamethylene diacrylate 13048-33-4	Workers	Inhalation	Long term exposure - systemic effects		24,48 mg/m <sup>3</sup>	
Hexamethylene diacrylate 13048-33-4	General population	dermal	Long term exposure - systemic effects		1,66 mg/kg	
Hexamethylene diacrylate 13048-33-4	General population	Inhalation	Long term exposure - systemic effects		7,24 mg/m <sup>3</sup>	
Hexamethylene diacrylate 13048-33-4	General population	oral	Long term exposure - systemic effects		2,08 mg/kg	
Isobornyl acrylate 5888-33-5	Workers	dermal	Long term exposure - systemic effects		1,39 mg/kg	
Isobornyl acrylate 5888-33-5	General population	oral	Long term exposure - systemic effects		0,83 mg/kg	
Isobornyl acrylate 5888-33-5	General population	dermal	Long term exposure - systemic effects		0,83 mg/kg	
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	Workers	inhalation	Long term exposure - systemic effects		24,48 mg/m <sup>3</sup>	
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	Workers	dermal	Long term exposure - systemic effects		2,77 mg/kg	
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	General population	inhalation	Long term exposure - systemic effects		7,24 mg/m <sup>3</sup>	
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	General population	oral	Long term exposure - systemic effects		2,08 mg/kg	
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	General population	dermal	Long term exposure - systemic effects		1,66 mg/kg	

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

Hand protection:

Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

**Eye protection:**

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.  
Protective eye equipment should conform to EN166.

**Skin protection:**

Wear suitable protective clothing.  
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

**Advices to personal protection equipment:**

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.  
Personal protective equipment should conform to the relevant EN standard.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Appearance	viscous, Liquid green
Odour threshold	No data available / Not applicable
pH	Not applicable
pH	Not applicable
Initial boiling point	240 °C (464 °F)
Flash point	94 °C (201.2 °F); None
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density	1,270 g/cm <sup>3</sup>
(20 °C (68 °F))	
Bulk density	No data available / Not applicable
Viscosity	12.000 cp
( )	
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative)	No data available / Not applicable
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

**9.2. Other information**

No data available / Not applicable

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Strong oxidizing agents.  
Reducing agents.  
Peroxides.  
Strong bases.

**10.2. Chemical stability**

Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

See section reactivity



**10.4. Conditions to avoid**

Avoid heating.  
Protect from direct sunlight.

**10.5. Incompatible materials**

See section reactivity.

**10.6. Hazardous decomposition products**

None if used for intended purpose.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****General toxicological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**Inhalative toxicity:**

May cause respiratory irritation.

**Skin irritation:**

Causes skin irritation.

**Eye irritation:**

Causes serious eye irritation.

**Sensitizing:**

May cause an allergic skin reaction.

**Acute oral toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
2-[(3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-yl)oxy]ethyl acrylate 65983-31-5	LD50	> 5.000 mg/kg	oral		rat	
1,6-Hexanediol diacrylate 13048-33-4	LD50	> 5.000 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
2,2-Diethoxyacetophenone 6175-45-7	LD50	5.660 mg/kg	oral		rat	
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	LD50	> 5.000 mg/kg	oral		rat	not specified
Isobornyl acrylate 5888-33-5	LD50	4.350 mg/kg	oral		rat	not specified
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	LD50	> 2.000 mg/kg	oral		rat	OECD Guideline 423 (Acute Oral toxicity)

**Acute inhalative toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
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**Acute dermal toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
2-[(3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-yl)oxy]ethyl acrylate 65983-31-5	LD50	> 5.000 mg/kg	dermal		rabbit	
1,6-Hexanediol diacrylate 13048-33-4	LD50	3.650 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
2,2-Diethoxyacetophenone 6175-45-7	LD50	11.300 mg/kg	dermal		rat	
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	LD50	> 5.000 mg/kg	dermal		rat	not specified
Isobornyl acrylate 5888-33-5	LD50	> 5.000 mg/kg	dermal		rabbit	not specified
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	LD50	> 2.000 mg/kg	dermal			OECD Guideline 402 (Acute Dermal Toxicity)

**Skin corrosion/irritation:**

Hazardous components CAS-No.	Result	Exposure time	Species	Method
1,6-Hexanediol diacrylate 13048-33-4	irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Isobornyl acrylate 5888-33-5	irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

**Serious eye damage/irritation:**

Hazardous components CAS-No.	Result	Exposure time	Species	Method
1,6-Hexanediol diacrylate 13048-33-4	irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	moderately irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**Respiratory or skin sensitization:**

Hazardous components CAS-No.	Result	Test type	Species	Method
1,6-Hexanediol diacrylate 13048-33-4	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Isobornyl acrylate 5888-33-5	sensitising	Mouse local lymph node assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	sensitising	Mouse local lymph node assay (LLNA)	mouse	not specified

**Germ cell mutagenicity:**

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
1,6-Hexanediol diacrylate 13048-33-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
1,6-Hexanediol diacrylate 13048-33-4	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

**Reproductive toxicity:**

Hazardous substances CAS-No.	Result / Classification	Species	Exposure time	Species	Method
1,6-Hexanediol diacrylate 13048-33-4	NOAEL P = 250 mg/kg	screening oral: gavage	28 - 52 d	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	NOAEL P = 250 mg/kg	screening oral: gavage	28 - 52 d	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

**Repeated dose toxicity**

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
1,6-Hexanediol diacrylate 13048-33-4	NOAEL=250 mg/kg	oral: gavage	28 - 52 ddaily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	NOAEL=250 mg/kg	oral: gavage	28 - 52 ddaily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

**SECTION 12: Ecological information****General ecological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**12.1. Toxicity****Ecotoxicity:**

Do not empty into drains / surface water / ground water.  
Toxic to aquatic life with long lasting effects.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
2-[(3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-yl)oxy]ethyl acrylate 65983-31-5	LC50	9 mg/l	Fish	96 h	Lepomis macrochirus	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,6-Hexanediol diacrylate 13048-33-4	EC50	1,5 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
	NOEC	0,5 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	LC50	7,2 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	EC50	26 mg/l	Daphnia	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	EC50	0,17 mg/l	Algae	72 h	Scenedesmus sp.	OECD Guideline 201 (Alga, Growth Inhibition Test)
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	EC 50	> 100 mg/l	Bacteria	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Isobornyl acrylate 5888-33-5	LC50	0,704 mg/l	Fish	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Isobornyl acrylate 5888-33-5	EC50	1 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Isobornyl acrylate 5888-33-5	NOEC	0,405 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	1,98 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Isobornyl acrylate 5888-33-5	NOEC	0,092 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
(1-Methyl-1,2-ethanediyl)bis[oxymethyl-2,1-ethanediyl] diacrylate 42978-66-5	LC50	> 4,5 - 10 mg/l	Fish	96 h	Leuciscus idus	DIN 38412-15
(1-Methyl-1,2-ethanediyl)bis[oxymethyl-2,1-ethanediyl] diacrylate 42978-66-5	EC50	88,7 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
(1-Methyl-1,2-ethanediyl)bis[oxymethyl-2,1-ethanediyl] diacrylate 42978-66-5	EC50	28 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
(1-Methyl-1,2-ethanediyl)bis[oxymethyl-2,1-ethanediyl] diacrylate 42978-66-5	EC 50	> 10.000 mg/l	Bacteria	30 min		not specified

**12.2. Persistence and degradability**

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
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2-[(3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-yl)oxy]ethyl acrylate 65983-31-5		aerobic	0 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
1,6-Hexanediol diacrylate 13048-33-4			> 70 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
	readily biodegradable	aerobic	69 %	OECD Guideline 310 (Ready BiodegradabilityCO <sub>2</sub> in Sealed Vessels (Headspace Test)
Isobornyl acrylate 5888-33-5	Not readily biodegradable.	aerobic	57 %	OECD Guideline 310 (Ready BiodegradabilityCO <sub>2</sub> in Sealed Vessels (Headspace Test)
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	inherently biodegradable	aerobic	> 90 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
		aerobic	48 %	EU Method C.4-C (Determination of the "Ready" BiodegradabilityCarbon Dioxide Evolution Test)

**12.3. Bioaccumulative potential / 12.4. Mobility in soil**

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
1,6-Hexanediol diacrylate 13048-33-4	2,81				25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	3,42					not specified
Isobornyl acrylate 5888-33-5		37	56 h	Danio rerio	24 °C	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)
Isobornyl acrylate 5888-33-5	4,52					OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

**12.5. Results of PBT and vPvB assessment**

Hazardous components CAS-No.	PBT/vPvB
1,6-Hexanediol diacrylate 13048-33-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Ethanone, 2,2-dimethoxy-1,2-diphenyl- 24650-42-8	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Isobornyl acrylate 5888-33-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
(1-Methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] diacrylate 42978-66-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

**12.6. Other adverse effects**

No data available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

**Product disposal:**

In consultation with the responsible local authority, must be subjected to special treatment.

**Disposal of uncleaned packages:**

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Disposal must be made according to official regulations.

**Waste code**

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

080312

**SECTION 14: Transport information****14.1. UN number**

ADR	3082
RID	3082
ADN	3082
IMDG	3082
IATA	3082

**14.2. UN proper shipping name**

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dicyclopentyloxyethyl acrylate)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dicyclopentyloxyethyl acrylate)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dicyclopentyloxyethyl acrylate)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dicyclopentyloxyethyl acrylate)
IATA	Environmentally hazardous substance, liquid, n.o.s. (Dicyclopentyloxyethyl acrylate)

**14.3. Transport hazard class(es)**

ADR	9
RID	9
ADN	9
IMDG	9
IATA	9

**14.4. Packing group**

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

**14.5. Environmental hazards**

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	Marine pollutant
IATA	not applicable

**14.6. Special precautions for user**

ADR	not applicable
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	Tunnelcode: (E)
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), 197 (IATA), 969 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

not applicable

## SECTION 15: Regulatory information

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

VOC content  
VOC content < 3 %  
(2010/75/EC)

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

## SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

**Further information:**

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

**Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.**