

Revision date: 24-Jun-2014 Version: 1.0 Print date: 27-Jun-2014

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

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

#### 1.1. Product identifier

**ECO-UV, EUV-CY Ver.2**

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

##### Use of the substance/mixture:

Inkjet Printing

Identified uses: Inkjet Printing

Restricted to professional users.

Uses advised against: -

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

##### Supplier (manufacturer/importer/only representative/downstream user/distributor):

###### Roland DG Corporation

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi

431-2103 Shizuoka-ken, JAPAN

**Telephone:** +81-53-484-1224

**Telefax:** +81-53-484-1226

**E-mail:** info@rolanddg.be

**Website:** www.rolanddg.be

**E-mail (competent person):** info@rolanddg.be

#### 1.4. Emergency telephone number

Supplier - Importer (EU): Roland DG Benelux N.V. , Houtstraat 3, B-2260 - Westerlo, Belgium, 24h: +49 228 19240 (Antipoison Center Bonn) , +32 14 575 911 (Only available during office hours.)

### SECTION 2: Hazards identification

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.
STOT-repeated exposure ( <i>STOT RE 1</i> )	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Chronic 2</i> )	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

##### Classification according to Directive 67/548/EEC or 1999/45/EC:

C: R34

T: R60-61

Xn: R21/22 R48/23

Xi: R36/37,R43

N: R51/53

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## 2.2. Label elements

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

#### Hazard pictograms:



**GHS05**  
Corrosion



**GHS07**  
Exclamation mark



**GHS08**  
Health hazard



**GHS09**  
Environment

**Signal word:** Danger

#### Hazard components for labelling:

2-Methoxyethylacrylate  
 Hexamethylene diacrylate  
 Benzyl acrylate  
 1-Vinylazepan-2-one  
 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate  
 (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)  
 Restricted to professional users.

hazard statements for health hazards	
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H372.1	Causes damage to liver through prolonged or repeated exposure if inhaled.

hazard statements for environmental hazards	
H411	Toxic to aquatic life with long lasting effects.

#### Supplemental Hazard information (EU): -

Precautionary statements Prevention	
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements Response	
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statements Disposal	
P501.1	Dispose of contents/container to industrial incineration plant.

## 2.3. Other hazards

#### Adverse physicochemical effects:

No known significant effects or critical hazards.

#### Adverse human health effects and symptoms:

No known significant effects or critical hazards.

#### Adverse environmental effects:

No known significant effects or critical hazards.

#### Other adverse effects:



No known significant effects or critical hazards.

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## SECTION 3: Composition / information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to 67/548/EEC Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concentration
CAS No.: 13048-33-4 EC No.: 235-921-9	<b>hexamethylene diacrylate</b> Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319  Xi; R36/38 — R43	20 - 30 Wt %
CAS No.: 3121-61-7 EC No.: 221-499-3	<b>2-methoxyethyl acrylate</b> Skin Corr. 1C, Repr. 1B, Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Sens. 1, STOT RE 2, Aquatic Chronic 3     <b>Danger</b> H226-H302-H311-H315-H319-H332  C; R34 — T; R24 — Repr. Cat. Fruchtb. 2; R60 — Repr. Cat. Entw. 2; R61 — Xn; R20/22 — Xn; R48/22 — Xi; R43 — R10	20 - 24 Wt %
CAS No.: 2495-35-4 EC No.: 219-673-9	<b>benzyl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319-H335-H411  Xi; R36/37/38 — Xi; R43	10 - 20 Wt %
CAS No.: 2235-00-9 EC No.: 218-787-6	<b>1-vinylhexahydro-2H-azepin-2-one</b> Acute Tox. 4, Eye Irrit. 2, Skin Sens. 1, STOT RE 1   <b>Danger</b> H302-H317-H319-H372  Xn; R22 — Xi; R36 — Xi; R43 — T; R48/23	10 - 20 Wt %
CAS No.: 75980-60-8 EC No.: 278-355-8	<b>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</b> Repr. 2  <b>Warning</b> H361f  Repr. Cat. Fruchtb. 3; R62	5 - 15 Wt %
CAS No.: 5888-33-5 EC No.: 227-561-6	<b>exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1   <b>Warning</b> H315-H317-H319-H335-H400-H410   Xi; R36/37/38 — Xi; R43 — N; R50/53	1 - 10 Wt %
CAS No.: 147-14-8 EC No.: 205-685-1	<b>29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32 copper</b>	1 - 5 Wt %

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### Following inhalation:

Provide fresh air.

Consult physician immediately.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap.

In case of skin irritation, consult a physician.

IF ON CLOTHING: Remove contaminated clothing immediately and dispose of safely.

#### After eye contact:

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

#### After ingestion:

Consult physician immediately.

Do NOT induce vomiting.

Give nothing to eat or drink.

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

No information available.

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

No information available.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media:

Carbon dioxide (CO<sub>2</sub>) Foam Dry extinguishing powder

##### Unsuitable extinguishing media:

Water

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

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Toxic gases/vapors.

#### 5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

#### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

##### Personal precautions:

Wear personal protection equipment.  
See protective measures under point 7 and 8.  
Provide adequate ventilation.

##### 6.1.2. For emergency responders

— No data available —

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

##### For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

#### 6.5. Additional information

— No data available —

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Protective measures

##### Advices on safe handling:

Use only in well-ventilated areas.  
Handle and open container with care.  
All work processes must always be designed so that the following is as low as possible:  
Inhalation, Skin contact, Eye contact  
When using do not eat, drink, smoke, sniff.

##### Fire prevent measures:

Keep away from sources of ignition. - No smoking.  
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

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

##### Requirements for storage rooms and vessels:

Keep/Store only in original container.

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**Hints on storage assembly:**

Do not store together with: Oxidising agent  
 Materials to avoid: Metal, Oxidising agent, Amines

**Further information on storage conditions:**

Keep only in the original container in a cool, well-ventilated place.

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

**Recommendation:**

refer to chapter 1.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**8.1.1. Occupational exposure limit values**

— No data available —

**8.1.2. biological limit values**

— No data available —

**8.1.3. DNEL-/PNEC-values**

Substance name	DNEL value	① DNEL type ② Exposure route
hexamethylene diacrylate CAS No.: 13048-33-4	24.48 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
2-methoxyethyl acrylate CAS No.: 3121-61-7	0.12 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
1-vinylhexahydro-2H-azepin-2-one CAS No.: 2235-00-9	4.9 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide CAS No.: 75980-60-8	3.5 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32 copper CAS No.: 147-14-8	4 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.  
 Devices with local exhaust

**8.2.2. Personal protection equipment**

**Eye/face protection:**

Tightly sealed safety glasses.

**Skin protection:**

Thorough skin-cleansing after handling the product.

Hand protection: When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: PVA (Polyvinyl alcohol)

Thickness of the glove material: 0,7 mm

Breakthrough time (maximum wearing time): > 480 min

**Respiratory protection:**

Respiratory protection necessary at:

insufficient ventilation

insufficient exhaust

Suitable respiratory protection apparatus:

Half-masks (DIN EN 140).

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

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**Other protection measures:**

Protective clothing: For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).  
 General health and safety measures: When using do not eat, drink, smoke, sniff. Thorough skin-cleansing after handling the product. Street clothing should be stored separately from work clothing.  
 Avoid contact with skin, eyes and clothes.

**8.2.3. Environmental exposure controls**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

**8.3. Additional information**

— No data available —

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state:** liquid

**Colour:** blue

**Odour:** characteristic

**Safety relevant basis data**

		at °C	Method	remark
pH	No data available			
Melting point/freezing point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	No data available			
Decomposition temperature (°C):	not determined			
Flash point	71 °C			
Evaporation rate	not determined			
Ignition temperature in °C	not determined			
Upper/lower flammability or explosive limits	not determined			
Vapour pressure	not determined			
Vapour density	not determined			
Density	not determined			
Bulk density	not determined			
Water solubility (g/L)	not determined			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	No data available			

**9.2. Other information**

— No data available —

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

UV-radiation/sunlight, Heat: Danger of polymerisation

**10.2. Chemical stability**

Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Heat  
 UV-radiation/sunlight

**10.5. Incompatible materials**

Acid Amines Radical former Oxidising agent

**10.6. Hazardous decomposition products**

Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx) Phosphorus oxides

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
3121-61-7	2-methoxyethyl acrylate	<b>LD<sub>50</sub> oral:</b> 404 mg/kg (Ratte) <b>LD<sub>50</sub> dermal:</b> 253 mg/kg (Kaninchen) <b>ATE inhalativ Dämpfe:</b> 2.9 mg/l

**Acute oral toxicity:**

There are no data available on the mixture itself.

**Acute dermal toxicity:**

There are no data available on the mixture itself.

**Acute inhalation toxicity:**

There are no data available on the mixture itself.

**Skin corrosion/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Eye damage/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Respiratory or skin sensitisation:**

sensitising. May cause an allergic skin reaction. (Acrylic esters)

**Reproductive toxicity:**

May damage fertility or the unborn child. (2-Methoxyethylacrylate)

**STOT-single exposure:**

May cause respiratory irritation. (Acrylic esters)

**STOT-repeated exposure:**

Causes damage to organs through prolonged or repeated exposure. (Acrylic esters)

**Additional information:**

Observations relevant to classification: There are no data available on the mixture itself.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Aquatic toxicity:**

Ingredient (Designation)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate:

Very toxic to aquatic organisms. Very toxic to aquatic life with long lasting effects.

Mixture related information:

There are no data available on the mixture itself.

**Terrestrial toxicity:**

There are no data available on the mixture itself.

### 12.2. Persistence and degradability

**Additional information:**

Further ecological information: There are no data available on the mixture itself.

### 12.3. Bioaccumulative potential

**Accumulation / Evaluation:**

There are no data available on the mixture itself.

### 12.4. Mobility in soil

There are no data available on the mixture itself.

### 12.5. Results of PBT and vPvB assessment

There are no data available on the mixture itself.

### 12.6. Other adverse effects

Further ecological information: There are no data available on the mixture itself.

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.  
 The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.  
 Vorschlagsliste für Abfallschlüssel/Abfallbezeichnungen gemäß AVV:

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

#### Waste code product:

04 02 16 \* dyestuffs and pigments containing dangerous substances

\*: Evidence for disposal must be provided.

#### Waste treatment options

##### Appropriate disposal / Product:

Dispose of waste according to applicable legislation.









##### Appropriate disposal / Package:

Handle contaminated packages in the same way as the substance itself.

### 13.2. Additional information

— No data available —

## SECTION 14: Transport information

Land transport (ADR/ RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO- TI / IATA-DGR)
<b>14.1. UN-No.</b>			
1760	1760	1760	1760
<b>14.2. UN proper shipping name</b>			
CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)
<b>14.3. Transport hazard class(es)</b>			
 8	 8	 8	 8
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
		 MARINE POLLUTANT	
<b>14.6. Special precautions for user</b>			
— No data available —			

**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

#### 15.1.1. EU legislation

— No data available —



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**15.1.2. National regulations**

 **[DE] National regulations**

**Restrictions of occupation**

5 MuSchRiV. 22 JArbSchG. 4 MuSchRiV.

**Technische Anleitung Luft (TA-Luft)**

**Klasse 1:**

-

**Ziffer 1:**

-

**Water hazard class (WGK)**

**WGK:**

3

**Source:**

Self-classification

**Other regulations, restrictions and prohibition regulations**

TRGS 401 - Gefährdung durch Hautkontakt; Ermittlung - Beurteilung - Maßnahmen

TRGS 900 - Arbeitsplatzgrenzwerte

M 004 (BGI 595) Reizende Stoffe, Ätzende Stoffe (8/2006)

M 039 Fruchtschädigungen - Schutz am Arbeitsplatz (5/2010)

M 050 (BGI 564) Tätigkeiten mit Gefahrstoffen (für die Beschäftigten) (6/2010)

**15.2. Chemical Safety Assessment**

Chemical safety assessments for substances in this preparation were not carried out.

**15.3. Additional information**

— No data available —

**SECTION 16: Other information**

**16.1. Indication of changes**

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**16.2. Abbreviations and acronyms**

— No data available —

**16.3. Key literature references and sources for data**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

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**16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]**

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.

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Hazard classes and hazard categories	Hazard statements	Classification procedure
STOT-repeated exposure (STOT RE 1)	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 2)	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

### 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements (R-phrases)	
R10	Flammable.
R20/22	Harmful by inhalation and if swallowed.
R24	Toxic in contact with skin.
R36/37/38	Irritating to eyes, respiratory system and skin.
R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.

Hazard statements	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### 16.6. Training advice

— No data available —

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

TÜV SÜD Industrie Service GmbH  
 Department Environmental Service  
 Westendstraße 199  
 80686 Munich - Germany-

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

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

#### 1.1. Product identifier

**ECO-UV, EUV-MG Ver.2**

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

##### Use of the substance/mixture:

Inkjet Printing

Identified uses: Inkjet Printing

Restricted to professional users.

Uses advised against: -

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

##### Supplier (manufacturer/importer/only representative/downstream user/distributor):

###### Roland DG Corporation

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi

431-2103 Shizuoka-ken, JAPAN

**Telephone:** +81-53-484-1224

**Telefax:** +81-53-484-1226

**E-mail:** info@rolanddg.be

**Website:** www.rolanddg.be

**E-mail (competent person):** info@rolanddg.be

#### 1.4. Emergency telephone number

Supplier - Importer (EU): Roland DG Benelux N.V. , Houtstraat 3, B-2260 - Westerlo, Belgium, 24h: +49 228 19240 (Antipoison Center Bonn) , +32 14 575 911 (Only available during office hours.)

### SECTION 2: Hazards identification

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.
STOT-repeated exposure ( <i>STOT RE 1</i> )	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Chronic 2</i> )	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

##### Classification according to Directive 67/548/EEC or 1999/45/EC:

C: R34

T: R60-61

Xn: R21/22 R48/23

Xi: R36/37,R43

N: R51/53

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## 2.2. Label elements

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

#### Hazard pictograms:



**GHS05**  
Corrosion



**GHS07**  
Exclamation mark



**GHS08**  
Health hazard



**GHS09**  
Environment

**Signal word:** Danger

#### Hazard components for labelling:

2-Methoxyethylacrylate  
 Hexamethylene diacrylate  
 Benzyl acrylate  
 1-Vinylazepan-2-one  
 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate  
 (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)  
 Restricted to professional users.

hazard statements for health hazards	
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H372.1	Causes damage to liver through prolonged or repeated exposure if inhaled.

hazard statements for environmental hazards	
H411	Toxic to aquatic life with long lasting effects.

#### Supplemental Hazard information (EU): -

Precautionary statements Prevention	
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements Response	
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statements Disposal	
P501.1	Dispose of contents/container to industrial incineration plant.

## 2.3. Other hazards

#### Adverse physicochemical effects:

No known significant effects or critical hazards.

#### Adverse human health effects and symptoms:

No known significant effects or critical hazards.

#### Adverse environmental effects:

No known significant effects or critical hazards.

#### Other adverse effects:




















No known significant effects or critical hazards.

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## SECTION 3: Composition / information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to 67/548/EEC Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concentration
CAS No.: 2495-35-4 EC No.: 219-673-9	<b>benzyl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319-H335-H411  Xi; R36/37/38 — Xi; R43	20 – 30 Wt %
CAS No.: 3121-61-7 EC No.: 221-499-3	<b>2-methoxyethyl acrylate</b> Skin Corr. 1C, Repr. 1B, Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Sens. 1, STOT RE 2, Aquatic Chronic 3     <b>Danger</b> H226-H302-H311-H315-H319-H332  C; R34 — T; R24 — Repr. Cat. Fruchtb. 2; R60 — Repr. Cat. Entw. 2; R61 — Xn; R20/22 — Xn; R48/22 — Xi; R43 — R10	20 – 24 Wt %
CAS No.: 5888-33-5 EC No.: 227-561-6	<b>exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1   <b>Warning</b> H315-H317-H319-H335-H400-H410   Xi; R36/37/38 — Xi; R43 — N; R50/53	10 – 20 Wt %
CAS No.: 2235-00-9 EC No.: 218-787-6	<b>1-vinylhexahydro-2H-azepin-2-one</b> Acute Tox. 4, Eye Irrit. 2, Skin Sens. 1, STOT RE 1   <b>Danger</b> H302-H317-H319-H372   Xn; R22 — Xi; R36 — Xi; R43 — T; R48/23	10 – 20 Wt %
CAS No.: 75980-60-8 EC No.: 278-355-8	<b>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</b> Repr. 2  <b>Warning</b> H361f  Repr. Cat. Fruchtb. 3; R62	5 – 15 Wt %
CAS No.: 13048-33-4 EC No.: 235-921-9	<b>hexamethylene diacrylate</b> Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319  Xi; R36/38 — R43	5 – 10 Wt %
	<b>Red Pigment</b>	1 – 5 Wt %

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### Following inhalation:

Provide fresh air.

Consult physician immediately.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap.

In case of skin irritation, consult a physician.

IF ON CLOTHING: Remove contaminated clothing immediately and dispose of safely.

#### After eye contact:

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

#### After ingestion:

Consult physician immediately.

Do NOT induce vomiting.

Give nothing to eat or drink.

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

No information available.

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

No information available.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

**Suitable extinguishing media:**

Carbon dioxide (CO<sub>2</sub>) Foam Dry extinguishing powder

**Unsuitable extinguishing media:**

Water

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

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Toxic gases/vapors.

#### 5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

#### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

**Personal precautions:**

Wear personal protection equipment.  
See protective measures under point 7 and 8.  
Provide adequate ventilation.

##### 6.1.2. For emergency responders

— No data available —

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

**For cleaning up:**

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

#### 6.5. Additional information

— No data available —

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Protective measures**

**Advices on safe handling:**

Use only in well-ventilated areas.  
Handle and open container with care.  
All work processes must always be designed so that the following is as low as possible:  
Inhalation, Skin contact, Eye contact  
When using do not eat, drink, smoke, sniff.

**Fire prevent measures:**

Keep away from sources of ignition. - No smoking.  
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

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

**Requirements for storage rooms and vessels:**

Keep/Store only in original container.

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**Hints on storage assembly:**

Do not store together with: Oxidising agent  
 Materials to avoid: Metal, Oxidising agent, Amines

**Further information on storage conditions:**

Keep only in the original container in a cool, well-ventilated place.

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

**Recommendation:**

refer to chapter 1.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**8.1.1. Occupational exposure limit values**

— No data available —

**8.1.2. biological limit values**

— No data available —

**8.1.3. DNEL-/PNEC-values**

Substance name	DNEL value	① DNEL type ② Exposure route
2-methoxyethyl acrylate CAS No.: 3121-61-7	0.12 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
1-vinylhexahydro-2H-azepin-2-one CAS No.: 2235-00-9	4.9 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide CAS No.: 75980-60-8	3.5 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
hexamethylene diacrylate CAS No.: 13048-33-4	24.48 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate ventilation as well as local exhaustion at critical locations.  
 Devices with local exhaust

**8.2.2. Personal protection equipment**

**Eye/face protection:**

Tightly sealed safety glasses.

**Skin protection:**

Thorough skin-cleansing after handling the product.

Hand protection: When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: PVA (Polyvinyl alcohol)

Thickness of the glove material: 0,7 mm

Breakthrough time (maximum wearing time): > 480 min

**Respiratory protection:**

Respiratory protection necessary at:

insufficient ventilation

insufficient exhaust

Suitable respiratory protection apparatus:

Half-masks (DIN EN 140).

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

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**Other protection measures:**

Protective clothing: For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).  
 General health and safety measures: When using do not eat, drink, smoke, sniff. Thorough skin-cleansing after handling the product. Street clothing should be stored separately from work clothing. Avoid contact with skin, eyes and clothes.

**8.2.3. Environmental exposure controls**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

**8.3. Additional information**

— No data available —

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state:** liquid

**Colour:** red

**Odour:** characteristic

**Safety relevant basis data**

		at °C	Method	remark
pH	No data available			
Melting point/freezing point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	No data available			
Decomposition temperature (°C):	not determined			
Flash point	71 °C			
Evaporation rate	not determined			
Ignition temperature in °C	not determined			
Upper/lower flammability or explosive limits	not determined			
Vapour pressure	not determined			
Vapour density	not determined			
Density	not determined			
Bulk density	not determined			
Water solubility (g/L)	not determined			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	No data available			

**9.2. Other information**

— No data available —

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

UV-radiation/sunlight, Heat: Danger of polymerisation

**10.2. Chemical stability**

Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Heat  
 UV-radiation/sunlight

**10.5. Incompatible materials**

Acid Amines Radical former Oxidising agent

**10.6. Hazardous decomposition products**

Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx) Phosphorus oxides



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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
3121-61-7	2-methoxyethyl acrylate	<b>LD<sub>50</sub> oral:</b> 404 mg/kg (Ratte) <b>LD<sub>50</sub> dermal:</b> 253 mg/kg (Kaninchen) <b>ATE inhalativ Dämpfe:</b> 2.9 mg/l

**Acute oral toxicity:**

There are no data available on the mixture itself.

**Acute dermal toxicity:**

There are no data available on the mixture itself.

**Acute inhalation toxicity:**

There are no data available on the mixture itself.

**Skin corrosion/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Eye damage/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Respiratory or skin sensitisation:**

sensitising. May cause an allergic skin reaction. (Acrylic esters)

**Reproductive toxicity:**

May damage fertility or the unborn child. (2-Methoxyethylacrylate)

**STOT-single exposure:**

May cause respiratory irritation. (Acrylic esters)

**STOT-repeated exposure:**

Causes damage to organs through prolonged or repeated exposure. (Acrylic esters)

**Additional information:**

Observations relevant to classification: There are no data available on the mixture itself.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Aquatic toxicity:**

Inhaltsstoff (Bezeichnung)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylat:

Sehr giftig für Wasserorganismen. Sehr giftig für Wasserorganismen mit langfristiger Wirkung.

Angaben zum Gemisch:

Es sind keine Daten für die Mischung verfügbar.

**Terrestrial toxicity:**

There are no data available on the mixture itself.

### 12.2. Persistence and degradability

**Additional information:**

Further ecological information: There are no data available on the mixture itself.

### 12.3. Bioaccumulative potential

**Accumulation / Evaluation:**

There are no data available on the mixture itself.

### 12.4. Mobility in soil

There are no data available on the mixture itself.

### 12.5. Results of PBT and vPvB assessment

There are no data available on the mixture itself.

### 12.6. Other adverse effects

Further ecological information: There are no data available on the mixture itself.

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.  
 The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Vorschlagsliste für Abfallschlüssel/Abfallbezeichnungen gemäß AVV:

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

##### Waste code product:

04 02 16 \* dyestuffs and pigments containing dangerous substances

\*: Evidence for disposal must be provided.

### Waste treatment options

#### Appropriate disposal / Product:

Dispose of waste according to applicable legislation.









#### Appropriate disposal / Package:

Handle contaminated packages in the same way as the substance itself.

### 13.2. Additional information

— No data available —

## SECTION 14: Transport information

Land transport (ADR/ RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO- TI / IATA-DGR)
<b>14.1. UN-No.</b>			
1760	1760	1760	1760
<b>14.2. UN proper shipping name</b>			
CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)
<b>14.3. Transport hazard class(es)</b>			
 8	 8	 8	 8
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
		 MARINE POLLUTANT	
<b>14.6. Special precautions for user</b>			
— No data available —			

**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

#### 15.1.1. EU legislation

— No data available —

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**15.1.2. National regulations**

 **[DE] National regulations**

**Restrictions of occupation**

5 MuSchRiV. 22 JArbSchG. 4 MuSchRiV.

**Technische Anleitung Luft (TA-Luft)**

**Klasse 1:**

-

**Ziffer 1:**

-

**Water hazard class (WGK)**

**WGK:**

3

**Source:**

Self-classification

**Other regulations, restrictions and prohibition regulations**

TRGS 401 - Gefährdung durch Hautkontakt; Ermittlung - Beurteilung - Maßnahmen

TRGS 900 - Arbeitsplatzgrenzwerte

M 004 (BGI 595) Reizende Stoffe, Ätzende Stoffe (8/2006)

M 039 Fruchtschädigungen - Schutz am Arbeitsplatz (5/2010)

M 050 (BGI 564) Tätigkeiten mit Gefahrstoffen (für die Beschäftigten) (6/2010)

**15.2. Chemical Safety Assessment**

Chemical safety assessments for substances in this preparation were not carried out.

**15.3. Additional information**

— No data available —

**SECTION 16: Other information**

**16.1. Indication of changes**

-

**16.2. Abbreviations and acronyms**

— No data available —

**16.3. Key literature references and sources for data**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

-

**16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]**

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.

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Hazard classes and hazard categories	Hazard statements	Classification procedure
STOT-repeated exposure (STOT RE 1)	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 2)	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

### 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements (R-phrases)	
R10	Flammable.
R20/22	Harmful by inhalation and if swallowed.
R24	Toxic in contact with skin.
R36/37/38	Irritating to eyes, respiratory system and skin.
R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.

Hazard statements	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### 16.6. Training advice

— No data available —

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

-

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

TÜV SÜD Industrie Service GmbH  
 Department Environmental Service  
 Westendstraße 199  
 80686 Munich - Germany-

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

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

#### 1.1. Product identifier

**ECO-UV, EUV-YE Ver.2**

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

##### Use of the substance/mixture:

Inkjet Printing

Identified uses: Inkjet Printing

Restricted to professional users.

Uses advised against: -

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

##### Supplier (manufacturer/importer/only representative/downstream user/distributor):

###### Roland DG Corporation

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi

431-2103 Shizuoka-ken, JAPAN

**Telephone:** +81-53-484-1224

**Telefax:** +81-53-484-1226

**E-mail:** info@rolanddg.be

**Website:** www.rolanddg.be

**E-mail (competent person):** info@rolanddg.be

#### 1.4. Emergency telephone number

Supplier - Importer (EU): Roland DG Benelux N.V. , Houtstraat 3, B-2260 - Westerlo, Belgium, 24h: +49 228 19240 (Antipoison Center Bonn) , +32 14 575 911 (Only available during office hours.)

### SECTION 2: Hazards identification

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.
STOT-repeated exposure ( <i>STOT RE 1</i> )	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Chronic 2</i> )	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

##### Classification according to Directive 67/548/EEC or 1999/45/EC:

C: R34

T: R60-61

Xn: R21/22 R48/23

Xi: R36/37,R43

N: R51/53

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## 2.2. Label elements

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

#### Hazard pictograms:



**GHS05**  
Corrosion



**GHS07**  
Exclamation mark



**GHS08**  
Health hazard



**GHS09**  
Environment

**Signal word:** Danger

#### Hazard components for labelling:

2-Methoxyethylacrylate  
 Hexamethylene diacrylate  
 Benzyl acrylate  
 1-Vinylazepan-2-one  
 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate  
 (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)  
 Restricted to professional users.

hazard statements for health hazards	
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H372.1	Causes damage to liver through prolonged or repeated exposure if inhaled.

hazard statements for environmental hazards	
H411	Toxic to aquatic life with long lasting effects.

#### Supplemental Hazard information (EU): -

Precautionary statements Prevention	
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements Response	
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statements Disposal	
P501.1	Dispose of contents/container to industrial incineration plant.

## 2.3. Other hazards

#### Adverse physicochemical effects:

No known significant effects or critical hazards.

#### Adverse human health effects and symptoms:

No known significant effects or critical hazards.

#### Adverse environmental effects:

No known significant effects or critical hazards.

#### Other adverse effects:

No known significant effects or critical hazards.

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## SECTION 3: Composition / information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to 67/548/EEC Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concentration
CAS No.: 3121-61-7 EC No.: 221-499-3	<b>2-methoxyethyl acrylate</b> Skin Corr. 1C, Repr. 1B, Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Sens. 1, STOT RE 2, Aquatic Chronic 3 <b>Danger</b> H226-H302-H311-H315-H319-H332 C; R34 — T; R24 — Repr. Cat. Fruchtb. 2; R60 — Repr. Cat. Entw. 2; R61 — Xn; R20/22 — Xn; R48/22 — Xi; R43 — R10	20 – 24 Wt %
CAS No.: 5888-33-5 EC No.: 227-561-6	<b>exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1 <b>Warning</b> H315-H317-H319-H335-H400-H410 Xi; R36/37/38 — Xi; R43 — N; R50/53	10 – 20 Wt %
CAS No.: 2495-35-4 EC No.: 219-673-9	<b>benzyl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1 <b>Warning</b> H315-H317-H319-H335-H411 Xi; R36/37/38 — Xi; R43	10 – 20 Wt %
CAS No.: 2235-00-9 EC No.: 218-787-6	<b>1-vinylhexahydro-2H-azepin-2-one</b> Acute Tox. 4, Eye Irrit. 2, Skin Sens. 1, STOT RE 1 <b>Danger</b> H302-H317-H319-H372 Xn; R22 — Xi; R36 — Xi; R43 — T; R48/23	10 – 20 Wt %
CAS No.: 13048-33-4 EC No.: 235-921-9	<b>hexamethylene diacrylate</b> Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1 <b>Warning</b> H315-H317-H319 Xi; R36/38 — R43	10 – 20 Wt %
CAS No.: 75980-60-8 EC No.: 278-355-8	<b>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</b> Repr. 2 <b>Warning</b> H361f Repr. Cat. Fruchtb. 3; R62	5 – 15 Wt %
CAS No.: 68511-62-6 EC No.: 270-944-8	<b>Nickel, 5,5'-azobis-2,4,6(1H,3H,5H)-pyrimidinetrione complexes</b>	1 – 5 Wt %

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### Following inhalation:

Provide fresh air.

Consult physician immediately.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap.

In case of skin irritation, consult a physician.

IF ON CLOTHING: Remove contaminated clothing immediately and dispose of safely.

#### After eye contact:

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

#### After ingestion:

Consult physician immediately.

Do NOT induce vomiting.

Give nothing to eat or drink.

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

No information available.

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

No information available.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

**Suitable extinguishing media:**

Carbon dioxide (CO<sub>2</sub>) Foam Dry extinguishing powder

**Unsuitable extinguishing media:**

Water

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

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Toxic gases/vapors.

#### 5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

#### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

**Personal precautions:**

Wear personal protection equipment.  
See protective measures under point 7 and 8.  
Provide adequate ventilation.

##### 6.1.2. For emergency responders

— No data available —

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

**For cleaning up:**

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

#### 6.5. Additional information

— No data available —

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Protective measures**

**Advices on safe handling:**

Use only in well-ventilated areas.  
Handle and open container with care.  
All work processes must always be designed so that the following is as low as possible:  
Inhalation, Skin contact, Eye contact  
When using do not eat, drink, smoke, sniff.

**Fire prevent measures:**

Keep away from sources of ignition. - No smoking.  
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

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

**Requirements for storage rooms and vessels:**

Keep/Store only in original container.



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**Hints on storage assembly:**

Do not store together with: Oxidising agent  
 Materials to avoid: Metal, Oxidising agent, Amines

**Further information on storage conditions:**

Keep only in the original container in a cool, well-ventilated place.

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

**Recommendation:**

refer to chapter 1.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**8.1.1. Occupational exposure limit values**

— No data available —

**8.1.2. biological limit values**

— No data available —

**8.1.3. DNEL-/PNEC-values**

Substance name	DNEL value	① DNEL type ② Exposure route
2-methoxyethyl acrylate CAS No.: 3121-61-7	0.12 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
1-vinylhexahydro-2H-azepin-2-one CAS No.: 2235-00-9	4.9 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
hexamethylene diacrylate CAS No.: 13048-33-4	24.48 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide CAS No.: 75980-60-8	3.5 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate ventilation as well as local exhaustion at critical locations.  
 Devices with local exhaust

**8.2.2. Personal protection equipment**

**Eye/face protection:**

Tightly sealed safety glasses.

**Skin protection:**

Thorough skin-cleansing after handling the product.

Hand protection: When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: PVA (Polyvinyl alcohol)

Thickness of the glove material: 0,7 mm

Breakthrough time (maximum wearing time): > 480 min

**Respiratory protection:**

Respiratory protection necessary at:

insufficient ventilation

insufficient exhaust

Suitable respiratory protection apparatus:

Half-masks (DIN EN 140).

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

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**Other protection measures:**

Protective clothing: For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).  
 General health and safety measures: When using do not eat, drink, smoke, sniff. Thorough skin-cleansing after handling the product. Street clothing should be stored separately from work clothing.  
 Avoid contact with skin, eyes and clothes.

**8.2.3. Environmental exposure controls**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

**8.3. Additional information**

— No data available —

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state:** liquid

**Colour:** yellow

**Odour:** characteristic

**Safety relevant basis data**

		at °C	Method	remark
pH	No data available			
Melting point/freezing point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	No data available			
Decomposition temperature (°C):	not determined			
Flash point	71 °C			
Evaporation rate	not determined			
Ignition temperature in °C	not determined			
Upper/lower flammability or explosive limits	not determined			
Vapour pressure	not determined			
Vapour density	not determined			
Density	not determined			
Bulk density	not determined			
Water solubility (g/L)	not determined			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	No data available			

**9.2. Other information**

— No data available —

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

UV-radiation/sunlight, Heat: Danger of polymerisation

**10.2. Chemical stability**

Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Heat  
 UV-radiation/sunlight

**10.5. Incompatible materials**

Acid Amines Radical former Oxidising agent

**10.6. Hazardous decomposition products**

Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx) Phosphorus oxides

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
3121-61-7	2-methoxyethyl acrylate	<b>LD<sub>50</sub> oral:</b> 404 mg/kg (Ratte) <b>LD<sub>50</sub> dermal:</b> 253 mg/kg (Kaninchen) <b>ATE inhalativ Dämpfe:</b> 2.9 mg/l

**Acute oral toxicity:**

There are no data available on the mixture itself.

**Acute dermal toxicity:**

There are no data available on the mixture itself.

**Acute inhalation toxicity:**

There are no data available on the mixture itself.

**Skin corrosion/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Eye damage/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Respiratory or skin sensitisation:**

sensitising. May cause an allergic skin reaction. (Acrylic esters)

**Reproductive toxicity:**

May damage fertility or the unborn child. (2-Methoxyethylacrylate)

**STOT-single exposure:**

May cause respiratory irritation. (Acrylic esters)

**STOT-repeated exposure:**

Causes damage to organs through prolonged or repeated exposure. (Acrylic esters)

**Additional information:**

Observations relevant to classification: There are no data available on the mixture itself.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Aquatic toxicity:**

Ingredient (Designation)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate:

Very toxic to aquatic organisms. Very toxic to aquatic life with long lasting effects.

Mixture related information:

There are no data available on the mixture itself.

**Terrestrial toxicity:**

There are no data available on the mixture itself.

**Additional ecotoxicological information:**

Further ecological information: There are no data available on the mixture itself.

### 12.2. Persistence and degradability

— No data available —

### 12.3. Bioaccumulative potential

**Accumulation / Evaluation:**

There are no data available on the mixture itself.

### 12.4. Mobility in soil

There are no data available on the mixture itself.

### 12.5. Results of PBT and vPvB assessment

There are no data available on the mixture itself.

### 12.6. Other adverse effects

Further ecological information: There are no data available on the mixture itself.

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.  
 The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Vorschlagsliste für Abfallschlüssel/Abfallbezeichnungen gemäß AVV:

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

##### Waste code product:

04 02 16 \* dyestuffs and pigments containing dangerous substances

\*: Evidence for disposal must be provided.

### Waste treatment options

#### Appropriate disposal / Product:

Dispose of waste according to applicable legislation.









#### Appropriate disposal / Package:

Handle contaminated packages in the same way as the substance itself.

### 13.2. Additional information

— No data available —

## SECTION 14: Transport information

Land transport (ADR/ RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO- TI / IATA-DGR)
<b>14.1. UN-No.</b>			
1760	1760	1760	1760
<b>14.2. UN proper shipping name</b>			
CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)
<b>14.3. Transport hazard class(es)</b>			
 8	 8	 8	 8
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
		 MARINE POLLUTANT	
<b>14.6. Special precautions for user</b>			
— No data available —			

**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

#### 15.1.1. EU legislation

— No data available —

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### 15.1.2. National regulations

#### [DE] National regulations

#### Restrictions of occupation

5 MuSchRiV. 22 JArbSchG. 4 MuSchRiV.

#### Technische Anleitung Luft (TA-Luft)

#### Klasse 1:

-

#### Ziffer 1:

-

#### Water hazard class (WGK)

#### WGK:

3

#### Source:

Self-classification

#### Other regulations, restrictions and prohibition regulations

TRGS 401 - Gefährdung durch Hautkontakt; Ermittlung - Beurteilung - Maßnahmen

TRGS 900 - Arbeitsplatzgrenzwerte

M 004 (BGI 595) Reizende Stoffe, Ätzende Stoffe (8/2006)

M 039 Fruchtschädigungen - Schutz am Arbeitsplatz (5/2010)

M 050 (BGI 564) Tätigkeiten mit Gefahrstoffen (für die Beschäftigten) (6/2010)

### 15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this preparation were not carried out.

### 15.3. Additional information

— No data available —

## SECTION 16: Other information

### 16.1. Indication of changes

-

### 16.2. Abbreviations and acronyms

— No data available —

### 16.3. Key literature references and sources for data

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

-

### 16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.

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Hazard classes and hazard categories	Hazard statements	Classification procedure
STOT-repeated exposure (STOT RE 1)	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 2)	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

### 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements (R-phrases)	
R10	Flammable.
R20/22	Harmful by inhalation and if swallowed.
R24	Toxic in contact with skin.
R36/37/38	Irritating to eyes, respiratory system and skin.
R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.

Hazard statements	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### 16.6. Training advice

— No data available —

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

-

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

TÜV SÜD Industrie Service GmbH  
 Department Environmental Service  
 Westendstraße 199  
 80686 Munich - Germany-

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

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

#### 1.1. Product identifier

**ECO-UV, EUV-BK Ver.2**

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

##### Use of the substance/mixture:

Inkjet Printing

Identified uses: Inkjet Printing

Restricted to professional users.

Uses advised against: -

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

##### Supplier (manufacturer/importer/only representative/downstream user/distributor):

###### Roland DG Corporation

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi

431-2103 Shizuoka-ken, JAPAN

**Telephone:** +81-53-484-1224

**Telefax:** +81-53-484-1226

**E-mail:** info@rolanddg.be

**Website:** www.rolanddg.be

**E-mail (competent person):** info@rolanddg.be

#### 1.4. Emergency telephone number

Supplier - Importer (EU): Roland DG Benelux N.V. , Houtstraat 3, B-2260 - Westerlo, Belgium, 24h: +49 228 19240 (Antipoison Center Bonn) , +32 14 575 911 (Only available during office hours.)

### SECTION 2: Hazards identification

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.
STOT-repeated exposure ( <i>STOT RE 1</i> )	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Chronic 2</i> )	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

##### Classification according to Directive 67/548/EEC or 1999/45/EC:

C: R34

T: R60-61

Xn: R21/22 R48/23

Xi: R36/37,R43

N: R51/53

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## 2.2. Label elements

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

#### Hazard pictograms:



**GHS05**  
Corrosion



**GHS07**  
Exclamation mark



**GHS08**  
Health hazard



**GHS09**  
Environment

**Signal word:** Danger

#### Hazard components for labelling:

2-Methoxyethylacrylate  
 Hexamethylene diacrylate  
 Benzyl acrylate  
 1-Vinylazepan-2-one  
 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate  
 (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)  
 Restricted to professional users.

hazard statements for health hazards	
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H372.1	Causes damage to liver through prolonged or repeated exposure if inhaled.

hazard statements for environmental hazards	
H411	Toxic to aquatic life with long lasting effects.

#### Supplemental Hazard information (EU): -

Precautionary statements Prevention	
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements Response	
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statements Disposal	
P501.1	Dispose of contents/container to industrial incineration plant.

## 2.3. Other hazards

#### Adverse physicochemical effects:

Keine besonderen Wirkungen oder Gefahren bekannt.

#### Adverse human health effects and symptoms:

No known significant effects or critical hazards.

#### Adverse environmental effects:

No known significant effects or critical hazards.

#### Other adverse effects:

No known significant effects or critical hazards.



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## SECTION 3: Composition / information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to 67/548/EEC Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concentration
CAS No.: 3121-61-7 EC No.: 221-499-3	<b>2-methoxyethyl acrylate</b> Skin Corr. 1C, Repr. 1B, Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Sens. 1, STOT RE 2, Aquatic Chronic 3 <b>Danger</b> H226-H302-H311-H315-H319-H332 C; R34 — T; R24 — Repr. Cat. Fruchtb. 2; R60 — Repr. Cat. Entw. 2; R61 — Xn; R20/22 — Xn; R48/22 — Xi; R43 — R10	20 – 24 Wt %
CAS No.: 13048-33-4 EC No.: 235-921-9	<b>hexamethylene diacrylate</b> Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1 <b>Warning</b> H315-H317-H319 Xi; R36/38 — R43	10 – 20 Wt %
CAS No.: 2495-35-4 EC No.: 219-673-9	<b>benzyl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1 <b>Warning</b> H315-H317-H319-H335-H411 Xi; R36/37/38 — Xi; R43	10 – 20 Wt %
CAS No.: 2235-00-9 EC No.: 218-787-6	<b>1-vinylhexahydro-2H-azepin-2-one</b> Acute Tox. 4, Eye Irrit. 2, Skin Sens. 1, STOT RE 1 <b>Danger</b> H302-H317-H319-H372 Xn; R22 — Xi; R36 — Xi; R43 — T; R48/23	10 – 20 Wt %
CAS No.: 75980-60-8 EC No.: 278-355-8	<b>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</b> Repr. 2 <b>Warning</b> H361f Repr. Cat. Fruchtb. 3; R62	5 – 15 Wt %
CAS No.: 5888-33-5 EC No.: 227-561-6	<b>exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1 <b>Warning</b> H315-H317-H319-H335-H400-H410 Xi; R36/37/38 — Xi; R43 — N; R50/53	1 – 10 Wt %
CAS No.: 1333-86-4 EC No.: 215-609-9	<b>Carbon black</b>	1 – 5 Wt %

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### Following inhalation:

Provide fresh air.

Consult physician immediately.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap.

In case of skin irritation, consult a physician.

IF ON CLOTHING: Remove contaminated clothing immediately and dispose of safely.

#### After eye contact:

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

#### After ingestion:

Consult physician immediately.

Do NOT induce vomiting.

Give nothing to eat or drink.

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

No information available.

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

No information available.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media:

Carbon dioxide (CO<sub>2</sub>) Foam Dry extinguishing powder

##### Unsuitable extinguishing media:

Water

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

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Toxic gases/vapors.

#### 5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

#### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

##### Personal precautions:

Wear personal protection equipment.  
See protective measures under point 7 and 8.  
Provide adequate ventilation.

##### 6.1.2. For emergency responders

— No data available —

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

##### For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

#### 6.5. Additional information

— No data available —

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Protective measures

##### Advices on safe handling:

Use only in well-ventilated areas.  
Handle and open container with care.  
All work processes must always be designed so that the following is as low as possible:  
Inhalation, Skin contact, Eye contact  
When using do not eat, drink, smoke, sniff.

##### Fire prevent measures:

Keep away from sources of ignition. - No smoking.  
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

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

##### Requirements for storage rooms and vessels:

Keep/Store only in original container.

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**Hints on storage assembly:**

Do not store together with: Oxidising agent  
 Materials to avoid: Metal, Oxidising agent, Amines

**Further information on storage conditions:**

Keep only in the original container in a cool, well-ventilated place.

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

**Recommendation:**

refer to chapter 1.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**8.1.1. Occupational exposure limit values**

— No data available —

**8.1.2. biological limit values**

— No data available —

**8.1.3. DNEL-/PNEC-values**

Substance name	DNEL value	① DNEL type ② Exposure route
2-methoxyethyl acrylate CAS No.: 3121-61-7	0.12 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
hexamethylene diacrylate CAS No.: 13048-33-4	24.48 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
1-vinylhexahydro-2H-azepin-2-one CAS No.: 2235-00-9	4.9 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide CAS No.: 75980-60-8	3.5 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate ventilation as well as local exhaustion at critical locations.  
 Devices with local exhaust

**8.2.2. Personal protection equipment**

**Eye/face protection:**

Tightly sealed safety glasses.

**Skin protection:**

Thorough skin-cleansing after handling the product.

Hand protection: When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: PVA (Polyvinyl alcohol)

Thickness of the glove material: 0,7 mm

Breakthrough time (maximum wearing time): > 480 min

**Respiratory protection:**

Respiratory protection necessary at:

insufficient ventilation

insufficient exhaust

Suitable respiratory protection apparatus:

Half-masks (DIN EN 140).

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

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**Other protection measures:**

Protective clothing: For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).  
 General health and safety measures: When using do not eat, drink, smoke, sniff. Thorough skin-cleansing after handling the product. Street clothing should be stored separately from work clothing.  
 Avoid contact with skin, eyes and clothes.

**8.2.3. Environmental exposure controls**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

**8.3. Additional information**

— No data available —

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state:** liquid

**Colour:** black

**Odour:** characteristic

**Safety relevant basis data**

		at °C	Method	remark
pH	No data available			
Melting point/freezing point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	No data available			
Decomposition temperature (°C):	not determined			
Flash point	71 °C			
Evaporation rate	not determined			
Ignition temperature in °C	not determined			
Upper/lower flammability or explosive limits	not determined			
Vapour pressure	not determined			
Vapour density	not determined			
Density	not determined			
Bulk density	not determined			
Water solubility (g/L)	not determined			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	No data available			

**9.2. Other information**

— No data available —

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

UV-radiation/sunlight, Heat: Danger of polymerisation

**10.2. Chemical stability**

Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Heat  
 UV-radiation/sunlight

**10.5. Incompatible materials**

Acid Amines Radical former Oxidising agent

**10.6. Hazardous decomposition products**

Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx) Phosphorus oxides

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
3121-61-7	2-methoxyethyl acrylate	<b>LD<sub>50</sub> oral:</b> 404 mg/kg (Ratte) <b>LD<sub>50</sub> dermal:</b> 253 mg/kg (Kaninchen) <b>ATE inhalativ Dämpfe:</b> 2.9 mg/l

**Acute oral toxicity:**

There are no data available on the mixture itself.

**Acute dermal toxicity:**

There are no data available on the mixture itself.

**Acute inhalation toxicity:**

There are no data available on the mixture itself.

**Skin corrosion/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Eye damage/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Respiratory or skin sensitisation:**

sensitising. May cause an allergic skin reaction. (Acrylic esters)

**Reproductive toxicity:**

May damage fertility or the unborn child. (2-Methoxyethylacrylate)

**STOT-single exposure:**

May cause respiratory irritation. (Acrylic esters)

**STOT-repeated exposure:**

Causes damage to organs through prolonged or repeated exposure. (Acrylic esters)

**Additional information:**

Observations relevant to classification: There are no data available on the mixture itself.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Aquatic toxicity:**

Ingredient (Designation)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate:

Very toxic to aquatic organisms. Very toxic to aquatic life with long lasting effects.

Mixture related information:

There are no data available on the mixture itself.

**Terrestrial toxicity:**

There are no data available on the mixture itself.

### 12.2. Persistence and degradability

**Additional information:**

Further ecological information: There are no data available on the mixture itself.

### 12.3. Bioaccumulative potential

**Accumulation / Evaluation:**

Es sind keine Daten für die Mischung verfügbar.

### 12.4. Mobility in soil

There are no data available on the mixture itself.

### 12.5. Results of PBT and vPvB assessment

There are no data available on the mixture itself.

### 12.6. Other adverse effects

Further ecological information: There are no data available on the mixture itself.

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.  
 The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.  
 Vorschlagsliste für Abfallschlüssel/Abfallbezeichnungen gemäß AVV:

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

##### Waste code product:

04 02 16 \* dyestuffs and pigments containing dangerous substances

\*: Evidence for disposal must be provided.

### Waste treatment options

#### Appropriate disposal / Product:

Dispose of waste according to applicable legislation.









#### Appropriate disposal / Package:

Handle contaminated packages in the same way as the substance itself.

### 13.2. Additional information

— No data available —

## SECTION 14: Transport information

Land transport (ADR/ RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO- TI / IATA-DGR)
<b>14.1. UN-No.</b>			
1760	1760	1760	1760
<b>14.2. UN proper shipping name</b>			
CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)
<b>14.3. Transport hazard class(es)</b>			
 8	 8	 8	 8
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
		 MARINE POLLUTANT	
<b>14.6. Special precautions for user</b>			
— No data available —			

**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

#### 15.1.1. EU legislation

— No data available —

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**15.1.2. National regulations**

 **[DE] National regulations**

**Restrictions of occupation**

5 MuSchRiV. 22 JArbSchG. 4 MuSchRiV.

**Technische Anleitung Luft (TA-Luft)**

**Klasse 1:**

-

**Ziffer 1:**

-

**Water hazard class (WGK)**

**WGK:**

3

**Source:**

Self-classification

**Other regulations, restrictions and prohibition regulations**

TRGS 401 - Gefährdung durch Hautkontakt; Ermittlung - Beurteilung - Maßnahmen

TRGS 900 - Arbeitsplatzgrenzwerte

M 004 (BGI 595) Reizende Stoffe, Ätzende Stoffe (8/2006)

M 039 Fruchtschädigungen - Schutz am Arbeitsplatz (5/2010)

M 050 (BGI 564) Tätigkeiten mit Gefahrstoffen (für die Beschäftigten) (6/2010)

**15.2. Chemical Safety Assessment**

Chemical safety assessments for substances in this preparation were not carried out.

**15.3. Additional information**

— No data available —

**SECTION 16: Other information**

**16.1. Indication of changes**

-

**16.2. Abbreviations and acronyms**

— No data available —

**16.3. Key literature references and sources for data**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

-

**16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]**

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.

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Hazard classes and hazard categories	Hazard statements	Classification procedure
STOT-repeated exposure (STOT RE 1)	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 2)	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

### 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements (R-phrases)	
R10	Flammable.
R20/22	Harmful by inhalation and if swallowed.
R24	Toxic in contact with skin.
R36/37/38	Irritating to eyes, respiratory system and skin.
R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.

Hazard statements	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### 16.6. Training advice

— No data available —

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

-

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

TÜV SÜD Industrie Service GmbH  
 Department Environmental Service  
 Westendstraße 199  
 80686 Munich - Germany-



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

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

#### 1.1. Product identifier

**ECO-UV, EUV-WH Ver.2**

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

##### Use of the substance/mixture:

Inkjet Printing

Identified uses: Inkjet Printing

Restricted to professional users.

Uses advised against: -

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

##### Supplier (manufacturer/importer/only representative/downstream user/distributor):

###### Roland DG Corporation

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi

431-2103 Shizuoka-ken, JAPAN

**Telephone:** +81-53-484-1224

**Telefax:** +81-53-484-1226

**E-mail:** info@rolanddg.be

**Website:** www.rolanddg.be

**E-mail (competent person):** info@rolanddg.be

#### 1.4. Emergency telephone number

Supplier - Importer (EU): Roland DG Benelux N.V. , Houtstraat 3, B-2260 - Westerlo, Belgium, 24h: +49 228 19240 (Antipoison Center Bonn) , +32 14 575 911 (Only available during office hours.)

### SECTION 2: Hazards identification

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method. Calculation method. Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.
STOT-repeated exposure ( <i>STOT RE 2</i> )	H373: May cause damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Chronic 2</i> )	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

##### Classification according to Directive 67/548/EEC or 1999/45/EC:

C: R34

T: R60-61

Xn: R21/22, R48/22

Xi: R36/37, R43

N: R51/53

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## 2.2. Label elements

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

#### Hazard pictograms:



**GHS05**  
Corrosion



**GHS07**  
Exclamation mark



**GHS08**  
Health hazard



**GHS09**  
Environment

**Signal word:** Danger

#### Hazard components for labelling:

2-Methoxyethylacrylate  
 Hexamethylene diacrylate  
 Benzyl acrylate  
 Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate  
 (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)  
 Restricted to professional users.

hazard statements for health hazards	
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

hazard statements for environmental hazards	
H411	Toxic to aquatic life with long lasting effects.

#### Supplemental Hazard information (EU): -

Precautionary statements Prevention	
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements Response	
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statements Disposal	
P501.1	Dispose of contents/container to industrial incineration plant.

## 2.3. Other hazards

#### Adverse physicochemical effects:

No known significant effects or critical hazards.

#### Adverse human health effects and symptoms:

No known significant effects or critical hazards.

#### Adverse environmental effects:

No known significant effects or critical hazards.

#### Other adverse effects:
















No known significant effects or critical hazards.

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## SECTION 3: Composition / information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to 67/548/EEC Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concentration
CAS No.: 13048-33-4 EC No.: 235-921-9	<b>hexamethylene diacrylate</b> Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319  Xi; R36/38 — R43	20 – 30 Wt %
CAS No.: 3121-61-7 EC No.: 221-499-3	<b>2-methoxyethyl acrylate</b> Skin Corr. 1C, Repr. 1B, Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Sens. 1, STOT RE 2, Aquatic Chronic 3     <b>Danger</b> H226-H302-H311-H315-H319-H332  C; R34 — T; R24 — Repr. Cat. Fruchtb. 2; R60 — Repr. Cat. Entw. 2; R61 — Xn; R20/22 — Xn; R48/22 — Xi; R43 — R10	20 – 24 Wt %
CAS No.: 5888-33-5 EC No.: 227-561-6	<b>exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1   <b>Warning</b> H315-H317-H319-H335-H400-H410   Xi; R36/37/38 — Xi; R43 — N; R50/53	10 – 20 Wt %
CAS No.: 2495-35-4 EC No.: 219-673-9	<b>benzyl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319-H335-H411  Xi; R36/37/38 — Xi; R43	10 – 20 Wt %
CAS No.: 13463-67-7 EC No.: 236-675-5	<b>titanium dioxide</b>	10 – 20 Wt %
CAS No.: 75980-60-8 EC No.: 278-355-8	<b>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</b> Repr. 2  <b>Warning</b> H361f  Repr. Cat. Fruchtb. 3; R62	5 – 15 Wt %

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### Following inhalation:

Provide fresh air.

Consult physician immediately.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap.

In case of skin irritation, consult a physician.

IF ON CLOTHING: Remove contaminated clothing immediately and dispose of safely.

#### After eye contact:

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

#### After ingestion:

Consult physician immediately.

Do NOT induce vomiting.

Give nothing to eat or drink.

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

No information available.

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

No information available.

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media:

Carbon dioxide (CO<sub>2</sub>) Foam Dry extinguishing powder

#### Unsuitable extinguishing media:

Water

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

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Toxic gases/vapors.

### 5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

##### Personal precautions:

Wear personal protection equipment.  
See protective measures under point 7 and 8.  
Provide adequate ventilation.

#### 6.1.2. For emergency responders

— No data available —

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

#### For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

### 6.5. Additional information

— No data available —

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Protective measures

##### Advices on safe handling:

Use only in well-ventilated areas.  
Handle and open container with care.  
All work processes must always be designed so that the following is as low as possible:  
Inhalation, Skin contact, Eye contact  
When using do not eat, drink, smoke, sniff.

##### Fire prevent measures:

Keep away from sources of ignition. - No smoking.  
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

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

#### Requirements for storage rooms and vessels:

Keep/Store only in original container.

#### Hints on storage assembly:

Do not store together with: Oxidising agent  
Materials to avoid: Metal, Oxidising agent, Amines

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**Further information on storage conditions:**

Keep only in the original container in a cool, well-ventilated place.

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

**Recommendation:**

refer to chapter 1.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**8.1.1. Occupational exposure limit values**

— No data available —

**8.1.2. biological limit values**

— No data available —

**8.1.3. DNEL-/PNEC-values**

Substance name	DNEL value	① DNEL type ② Exposure route
hexamethylene diacrylate CAS No.: 13048-33-4	24.48 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
2-methoxyethyl acrylate CAS No.: 3121-61-7	0.12 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
titanium dioxide CAS No.: 13463-67-7	10 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide CAS No.: 75980-60-8	3.5 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.  
 Devices with local exhaust

**8.2.2. Personal protection equipment**

**Eye/face protection:**

Tightly sealed safety glasses.

**Skin protection:**

Thorough skin-cleansing after handling the product.

Hand protection: When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: PVA (Polyvinyl alcohol)

Thickness of the glove material: 0,7 mm

Breakthrough time (maximum wearing time): > 480 min

**Respiratory protection:**

Respiratory protection necessary at:

insufficient ventilation

insufficient exhaust

Suitable respiratory protection apparatus:

Half-masks (DIN EN 140).

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

**Other protection measures:**

Protective clothing: For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

General health and safety measures: When using do not eat, drink, smoke, sniff. Thorough skin-cleansing after handling the product. Street clothing should be stored separately from work clothing.

Avoid contact with skin, eyes and clothes.

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**8.2.3. Environmental exposure controls**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

**8.3. Additional information**

— No data available —

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state:** liquid

**Colour:** white

**Odour:** characteristic

**Safety relevant basis data**

		at °C	Method	remark
pH	No data available			
Melting point/freezing point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	No data available			
Decomposition temperature (°C):	not determined			
Flash point	71 °C			
Evaporation rate	not determined			
Ignition temperature in °C	not determined			
Upper/lower flammability or explosive limits	not determined			
Vapour pressure	not determined			
Vapour density	not determined			
Density	not determined			
Bulk density	not determined			
Water solubility (g/L)	not determined			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	No data available			

**9.2. Other information**

— No data available —

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

UV-radiation/sunlight, Heat: Danger of polymerisation

**10.2. Chemical stability**

Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Heat

UV-radiation/sunlight

**10.5. Incompatible materials**

Acid Amines Radical former Oxidising agent

**10.6. Hazardous decomposition products**

Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx) Phosphorus oxides

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
3121-61-7	2-methoxyethyl acrylate	<b>LD<sub>50</sub> oral:</b> 404 mg/kg (Ratte) <b>LD<sub>50</sub> dermal:</b> 253 mg/kg (Kaninchen) <b>ATE inhalativ Dämpfe:</b> 2.9 mg/l

**Acute oral toxicity:**

There are no data available on the mixture itself.

**Acute dermal toxicity:**

There are no data available on the mixture itself.

**Acute inhalation toxicity:**

There are no data available on the mixture itself.

**Skin corrosion/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Eye damage/irritation:**

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

**Respiratory or skin sensitisation:**

sensitising. May cause an allergic skin reaction. (Acrylic esters)

**Reproductive toxicity:**

May damage fertility or the unborn child. (2-Methoxyethylacrylate)

**STOT-single exposure:**

May cause respiratory irritation. (Acrylic esters)

**STOT-repeated exposure:**

May cause damage to organs through prolonged or repeated exposure. (Acrylic esters)

**Additional information:**

Observations relevant to classification: There are no data available on the mixture itself.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Aquatic toxicity:**

Ingredient (Designation)

Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate:

Very toxic to aquatic organisms. Very toxic to aquatic life with long lasting effects.

Mixture related information:

There are no data available on the mixture itself.

**Terrestrial toxicity:**

There are no data available on the mixture itself.

### 12.2. Persistence and degradability

**Additional information:**

Further ecological information: There are no data available on the mixture itself.

### 12.3. Bioaccumulative potential

**Accumulation / Evaluation:**

There are no data available on the mixture itself.

### 12.4. Mobility in soil

There are no data available on the mixture itself.

### 12.5. Results of PBT and vPvB assessment

There are no data available on the mixture itself.

### 12.6. Other adverse effects

Further ecological information: There are no data available on the mixture itself.

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.  
 The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Vorschlagsliste für Abfallschlüssel/Abfallbezeichnungen gemäß AVV:

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

##### Waste code product:

04 02 16 *	dyestuffs and pigments containing dangerous substances
------------	--

\*: Evidence for disposal must be provided.

### Waste treatment options

#### Appropriate disposal / Product:

Dispose of waste according to applicable legislation.









#### Appropriate disposal / Package:

Handle contaminated packages in the same way as the substance itself.

### 13.2. Additional information

— No data available —

## SECTION 14: Transport information

Land transport (ADR/ RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO- TI / IATA-DGR)
<b>14.1. UN-No.</b>			
1760	1760	1760	1760
<b>14.2. UN proper shipping name</b>			
CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Meth- oxyethylacrylate)
<b>14.3. Transport hazard class(es)</b>			
 8	 8	 8	 8
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
		 MARINE POLLUTANT	
<b>14.6. Special precautions for user</b>			
— No data available —			

**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

#### 15.1.1. EU legislation

— No data available —



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**15.1.2. National regulations**

 **[DE] National regulations**

**Restrictions of occupation**

5 MuSchRiV. 22 JArbSchG. 4 MuSchRiV.

**Technische Anleitung Luft (TA-Luft)**

**Klasse 1:**

-

**Ziffer 1:**

-

**Water hazard class (WGK)**

**WGK:**

3

**Source:**

Self-classification

**Other regulations, restrictions and prohibition regulations**

TRGS 401 - Gefährdung durch Hautkontakt; Ermittlung - Beurteilung - Maßnahmen

TRGS 900 - Arbeitsplatzgrenzwerte

M 004 (BGI 595) Reizende Stoffe, Ätzende Stoffe (8/2006)

M 039 Fruchtschädigungen - Schutz am Arbeitsplatz (5/2010)

M 050 (BGI 564) Tätigkeiten mit Gefahrstoffen (für die Beschäftigten) (6/2010)

**15.2. Chemical Safety Assessment**

Chemical safety assessments for substances in this preparation were not carried out.

**15.3. Additional information**

— No data available —

**SECTION 16: Other information**

**16.1. Indication of changes**

-

**16.2. Abbreviations and acronyms**

— No data available —

**16.3. Key literature references and sources for data**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

-

**16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]**

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method. Calculation method. Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.

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Hazard classes and hazard categories	Hazard statements	Classification procedure
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method.
STOT-repeated exposure ( <i>STOT RE 2</i> )	H373: May cause damage to organs through prolonged or repeated exposure.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Chronic 2</i> )	H411: Toxic to aquatic life with long lasting effects.	Calculation method.

### 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements (R-phrases)	
R10	Flammable.
R20/22	Harmful by inhalation and if swallowed.
R24	Toxic in contact with skin.
R36/37/38	Irritating to eyes, respiratory system and skin.
R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.

Hazard statements	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### 16.6. Training advice

— No data available —

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

TÜV SÜD Industrie Service GmbH  
 Department Environmental Service  
 Westendstraße 199  
 80686 Munich - Germany-

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

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

#### 1.1. Product identifier

**ECO-UV, EUV-GL Ver.2**

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

##### Use of the substance/mixture:

Inkjet Printing

Identified uses: Inkjet Printing

Restricted to professional users.

Uses advised against: -

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

##### Supplier (manufacturer/importer/only representative/downstream user/distributor):

###### Roland DG Corporation

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi

431-2103 Shizuoka-ken, JAPAN

**Telephone:** +81-53-484-1224

**Telefax:** +81-53-484-1226

**E-mail:** info@rolanddg.be

**Website:** www.rolanddg.be

**E-mail (competent person):** info@rolanddg.be

#### 1.4. Emergency telephone number

Supplier - Importer (EU): Roland DG Benelux N.V. , Houtstraat 3, B-2260 - Westerlo, Belgium, 24h: +49 228 19240 (Antipoison Center Bonn) , +32 14 575 911 (Only available during office hours.)

### SECTION 2: Hazards identification

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method. Calculation method.
STOT-repeated exposure ( <i>STOT RE 1</i> )	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.

##### Classification according to Directive 67/548/EEC or 1999/45/EC:

C: R34

T: R60-61

Xn: R21/22 R48/23

Xi: R36/37,R43

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## 2.2. Label elements

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

#### Hazard pictograms:



**GHS05**  
Corrosion



**GHS07**  
Exclamation mark



**GHS08**  
Health hazard

**Signal word:** Danger

#### Hazard components for labelling:

2-Methoxyethylacrylate  
 Hexamethylene diacrylate  
 Benzyl acrylate  
 1-Vinylazepan-2-one  
 (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)  
 Restricted to professional users.

hazard statements for health hazards	
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H372.1	Causes damage to liver through prolonged or repeated exposure if inhaled.

#### Supplemental Hazard information (EU): -

Precautionary statements Prevention	
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements Response	
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statements Disposal	
P501.1	Dispose of contents/container to industrial incineration plant.

## 2.3. Other hazards

#### Adverse physicochemical effects:

No known significant effects or critical hazards.

#### Adverse human health effects and symptoms:

No known significant effects or critical hazards.

#### Adverse environmental effects:

No known significant effects or critical hazards.

#### Other adverse effects:

No known significant effects or critical hazards.

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## SECTION 3: Composition / information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to 67/548/EEC Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concentration
CAS No.: 13048-33-4 EC No.: 235-921-9	<b>hexamethylene diacrylate</b> Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319  Xi; R36/38 — R43	20 - 30 Wt %
CAS No.: 3121-61-7 EC No.: 221-499-3	<b>2-methoxyethyl acrylate</b> Skin Corr. 1C, Repr. 1B, Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Sens. 1, STOT RE 2, Aquatic Chronic 3     <b>Danger</b> H226-H302-H311-H315-H319-H332  C; R34 — T; R24 — Repr. Cat. Fruchtb. 2; R60 — Repr. Cat. Entw. 2; R61 — Xn; R20/22 — Xn; R48/22 — Xi; R43 — R10	20 - 24 Wt %
CAS No.: 2495-35-4 EC No.: 219-673-9	<b>benzyl acrylate</b> STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1  <b>Warning</b> H315-H317-H319-H335-H411  Xi; R36/37/38 — Xi; R43	10 - 20 Wt %
CAS No.: 2235-00-9 EC No.: 218-787-6	<b>1-vinylhexahydro-2H-azepin-2-one</b> Acute Tox. 4, Eye Irrit. 2, Skin Sens. 1, STOT RE 1   <b>Danger</b> H302-H317-H319-H372  Xn; R22 — Xi; R36 — Xi; R43 — T; R48/23	10 - 20 Wt %
CAS No.: 75980-60-8 EC No.: 278-355-8	<b>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</b> Repr. 2  <b>Warning</b> H361f  Repr. Cat. Fruchtb. 3; R62	5 - 15 Wt %

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### Following inhalation:

Provide fresh air.

Consult physician immediately.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap.

In case of skin irritation, consult a physician.

IF ON CLOTHING: Remove contaminated clothing immediately and dispose of safely.

#### After eye contact:

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

#### After ingestion:

Consult physician immediately.

Do NOT induce vomiting.

Give nothing to eat or drink.

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

No information available.

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

No information available.

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media:

Carbon dioxide (CO<sub>2</sub>) Foam Dry extinguishing powder

#### Unsuitable extinguishing media:

Water

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

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Toxic gases/vapors.

### 5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

##### Personal precautions:

Wear personal protection equipment.  
See protective measures under point 7 and 8.  
Provide adequate ventilation.

#### 6.1.2. For emergency responders

— No data available —

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

#### For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

### 6.5. Additional information

— No data available —

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Protective measures

##### Advices on safe handling:

Use only in well-ventilated areas.  
Handle and open container with care.  
All work processes must always be designed so that the following is as low as possible:  
Inhalation, Skin contact, Eye contact  
When using do not eat, drink, smoke, sniff.

##### Fire prevent measures:

Keep away from sources of ignition. - No smoking.  
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

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

#### Requirements for storage rooms and vessels:

Keep/Store only in original container.

#### Hints on storage assembly:

Do not store together with: Oxidising agent  
Materials to avoid: Metal, Oxidising agent, Amines

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**Further information on storage conditions:**

Keep only in the original container in a cool, well-ventilated place.

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

**Recommendation:**

refer to chapter 1.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**8.1.1. Occupational exposure limit values**

— No data available —

**8.1.2. biological limit values**

— No data available —

**8.1.3. DNEL-/PNEC-values**

Substance name	DNEL value	① DNEL type ② Exposure route
hexamethylene diacrylate CAS No.: 13048-33-4	24.48 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
2-methoxyethyl acrylate CAS No.: 3121-61-7	0.12 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
1-vinylhexahydro-2H-azepin-2-one CAS No.: 2235-00-9	4.9 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide CAS No.: 75980-60-8	3.5 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.  
 Devices with local exhaust

**8.2.2. Personal protection equipment**

**Eye/face protection:**

Tightly sealed safety glasses.

**Skin protection:**

Thorough skin-cleansing after handling the product.

Hand protection: When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: PVA (Polyvinyl alcohol)

Thickness of the glove material: 0,7 mm

Breakthrough time (maximum wearing time): > 480 min

**Respiratory protection:**

Respiratory protection necessary at:

insufficient ventilation

insufficient exhaust

Suitable respiratory protection apparatus:

Half-masks (DIN EN 140).

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

**Other protection measures:**

Protective clothing: For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

General health and safety measures: When using do not eat, drink, smoke, sniff. Thorough skin-cleansing after handling the product. Street clothing should be stored separately from work clothing.

Avoid contact with skin, eyes and clothes.

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**8.2.3. Environmental exposure controls**

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

**8.3. Additional information**

— No data available —

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state:** liquid

**Colour:** clear

**Odour:** characteristic

**Safety relevant basis data**

		at °C	Method	remark
pH	No data available			
Melting point/freezing point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	No data available			
Decomposition temperature (°C):	not determined			
Flash point	71 °C			
Evaporation rate	not determined			
Ignition temperature in °C	not determined			
Upper/lower flammability or explosive limits	not determined			
Vapour pressure	not determined			
Vapour density	not determined			
Density	not determined			
Bulk density	not determined			
Water solubility (g/L)	not determined			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	No data available			

**9.2. Other information**

— No data available —

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

UV-radiation/sunlight, Heat: Danger of polymerisation

**10.2. Chemical stability**

Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Heat

UV-radiation/sunlight

**10.5. Incompatible materials**

Acid Amines Radical former Oxidising agent

**10.6. Hazardous decomposition products**

Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx) Phosphorus oxides



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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
3121-61-7	2-methoxyethyl acrylate	<b>LD<sub>50</sub> oral:</b> 404 mg/kg (Ratte) <b>LD<sub>50</sub> dermal:</b> 253 mg/kg (Kaninchen) <b>ATE inhalativ Dämpfe:</b> 2.9 mg/l

#### Acute oral toxicity:

There are no data available on the mixture itself.

#### Acute dermal toxicity:

There are no data available on the mixture itself.

#### Acute inhalation toxicity:

There are no data available on the mixture itself.

#### Skin corrosion/irritation:

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

#### Eye damage/irritation:

Causes severe skin burns and eye damage. (2-Methoxyethylacrylate)

#### Respiratory or skin sensitisation:

sensitising. May cause an allergic skin reaction. (Acrylic esters)

#### Reproductive toxicity:

May damage fertility or the unborn child. (2-Methoxyethylacrylate)

#### STOT-single exposure:

May cause respiratory irritation. (Acrylic esters)

#### STOT-repeated exposure:

Causes damage to organs through prolonged or repeated exposure. (Acrylic esters)

#### Additional information:

Observations relevant to classification: There are no data available on the mixture itself.

## SECTION 12: Ecological information

### 12.1. Toxicity

#### Aquatic toxicity:

There are no data available on the mixture itself.

#### Terrestrial toxicity:

There are no data available on the mixture itself.

### 12.2. Persistence and degradability

#### Additional information:

Further ecological information: There are no data available on the mixture itself.

### 12.3. Bioaccumulative potential

#### Accumulation / Evaluation:

There are no data available on the mixture itself.

### 12.4. Mobility in soil

There are no data available on the mixture itself.

### 12.5. Results of PBT and vPvB assessment

There are no data available on the mixture itself.

### 12.6. Other adverse effects

Further ecological information: There are no data available on the mixture itself.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Vorschlagsliste für Abfallschlüssel/Abfallbezeichnungen gemäß AVV:

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

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**Waste code product:**

04 02 16 \* dyestuffs and pigments containing dangerous substances

\*: Evidence for disposal must be provided.

**Waste treatment options**

**Appropriate disposal / Product:**

Dispose of waste according to applicable legislation.





**Appropriate disposal / Package:**

Handle contaminated packages in the same way as the substance itself.

**13.2. Additional information**

— No data available —

**SECTION 14: Transport information**

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<b>14.1. UN-No.</b>			
1760	1760	1760	1760
<b>14.2. UN proper shipping name</b>			
CORROSIVE LIQUID, N.O.S. (contains 2-Methoxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Methoxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Methoxyethylacrylate)	CORROSIVE LIQUID, N.O.S. (contains 2-Methoxyethylacrylate)
<b>14.3. Transport hazard class(es)</b>			
 8	 8	 8	 8
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
No	No	No	No
<b>14.6. Special precautions for user</b>			
— No data available —			

**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**

**15.1.1. EU legislation**

— No data available —

**15.1.2. National regulations**

 [DE] National regulations

**Restrictions of occupation**

5 MuSchRiV. 22 JArbSchG. 4 MuSchRiV.

**Technische Anleitung Luft (TA-Luft)**

**Klasse 1:**

-

**Ziffer 1:**

-

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**Water hazard class (WGK)**

**WGK:**

3

**Source:**

Self-classification

**Other regulations, restrictions and prohibition regulations**

TRGS 401 - Gefährdung durch Hautkontakt; Ermittlung - Beurteilung - Maßnahmen

TRGS 900 - Arbeitsplatzgrenzwerte

M 004 (BGI 595) Reizende Stoffe, Ätzende Stoffe (8/2006)

M 039 Fruchtschädigungen - Schutz am Arbeitsplatz (5/2010)

M 050 (BGI 564) Tätigkeiten mit Gefahrstoffen (für die Beschäftigten) (6/2010)

**15.2. Chemical Safety Assessment**

Chemical safety assessments for substances in this preparation were not carried out.

**15.3. Additional information**

— No data available —

**SECTION 16: Other information**

**16.1. Indication of changes**

-

**16.2. Abbreviations and acronyms**

— No data available —

**16.3. Key literature references and sources for data**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

-

**16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]**

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) ( <i>Acute Tox. 4</i> )	H302: Harmful if swallowed.	Calculation method.
Acute toxicity (dermal) ( <i>Acute Tox. 4</i> )	H312: Harmful in contact with skin.	Calculation method.
Skin corrosion/irritation ( <i>Skin Corr. 1C</i> )	H314: Causes severe skin burns and eye damage.	Calculation method.
Respiratory or skin sensitisation ( <i>Skin Sens. 1</i> )	H317: May cause an allergic skin reaction.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	Calculation method.
Reproductive toxicity ( <i>Repr. 1B</i> )	H360: May damage fertility or the unborn child.	Calculation method. Calculation method.
STOT-repeated exposure ( <i>STOT RE 1</i> )	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation method.

**16.5. Relevant R-, H- and EUH-phrases (Number and full text)**

Hazard statements (R-phrases)	
R10	Flammable.
R20/22	Harmful by inhalation and if swallowed.
R24	Toxic in contact with skin.
R36/37/38	Irritating to eyes, respiratory system and skin.
R36/38	Irritating to eyes and skin.

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Hazard statements (R-phrases)	
R43	May cause sensitisation by skin contact.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.

Hazard statements	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H360	May damage fertility or the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

### 16.6. Training advice

— No data available —

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

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