

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## ROTOSTAR UV 166 014 SILVER FLEXO INK

Version 3.0      Revision Date: 07.11.2018      SDS Number: 102000028180      Print Date: 19.11.2018  
Date of first issue: 04.09.2017

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

#### 1.1 Product identifier

Trade name : ROTOSTAR UV 166 014 SILVER FLEXO INK  
Product code : 023411U20M1

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

This information is not available.

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

Company : ECKART GmbH  
Guentersthal 4  
91235 Hartenstein  
  
Telephone : +499152770  
  
Telefax : +499152777008  
  
E-mail address of person responsible for the SDS : msds.eckart@altana.com

#### 1.4 Emergency telephone number

GBK Gefahrgut Büro GmbH, Ingelheim, Germany:  
From outside US : (001) 352-323-3500  
(First call in English, response in your language is possible)  
US & Canada (toll free) : 1-800-5355-053

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315: Causes skin irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

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Hazard pictograms	:	
Signal word	:	Warning
Hazard statements	:	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H361d Suspected of damaging the unborn child. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	:	<b>Prevention:</b> P201 Obtain special instructions before use. 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.  <b>Response:</b> P308 + P313 IF exposed or concerned: Get medical advice/ attention. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

Hazardous components which must be listed on the label:

Propylidynetrimethanol, ethoxylated, esters with acrylic acid  
Epoxy acrylate  
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate  
Glycerol, propoxylated, esters with acrylic acid  
2-Propenoic acid, ester with C12-16-alkyl glycidyl ether

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification REGULATION (EC) No 1272/2008	Concentration (% w/w)
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	28961-43-5 500-066-5 01-2119489900-30	Skin Irrit. 2; H315 Skin Sens. 1; H317	>= 50 - <= 100
Epoxy acrylate	55818-57-0	Skin Sens. 1; H317	>= 10 - < 20

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	01-2119490020-53		
aluminium powder (stabilised)	7429-90-5 231-072-3 013-002-00-1 01-2119529243-45	Flam. Sol. 1; H228	>= 1 - < 10
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	6846-50-0 229-934-9 01-2119451093-47	Repr. 2; H361d Aquatic Chronic 3; H412	>= 3 - < 10
2-hydroxy-1-(4-(4-(2-hydroxy-2-methylpropionyl)benzyl)phenyl)-2-methylpropan-1-one	474510-57-1 444-860-9 606-140-00-4 01-2119904050-59	STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 1 - < 2.5
Glycerol, propoxylated, esters with acrylic acid	52408-84-1 500-114-5 01-2119487948-12	Eye Irrit. 2; H319 Skin Sens. 1; H317	>= 1 - < 10
2-Propenoic acid, ester with C12-16-alkyl glycidyl ether	68071-40-9  01-2120755565-46- xxxx	Skin Sens. 1; H317	>= 1 - < 10

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General advice : Move the victim to fresh air.  
Do not leave the victim unattended.
- Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.
- If inhaled : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : Wash off immediately with soap and plenty of water.
- If skin irritation persists, call a physician.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
- Flush eyes with water as a precaution.  
Remove contact lenses.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.

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Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.

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

Risks : Causes skin irritation.  
May cause an allergic skin reaction.  
Suspected of damaging the unborn child.

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

This information is not available.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Dry sand  
ABC powder  
Foam

Unsuitable extinguishing media : High volume water jet

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

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: Accidental release measures

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

Personal precautions : Evacuate personnel to safe areas.  
Use personal protective equipment.

### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.

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If the product contaminates rivers and lakes or drains inform respective authorities.

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

Methods for cleaning up : Use mechanical handling equipment.  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Do not flush with water.  
Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For personal protection see section 8.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.  
Wash hands before breaks and at the end of workday.

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

Requirements for storage areas and containers : Earthing of containers and apparatuses is essential. Reaction with water liberates extremely flammable gas (hydrogen) Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Keep away from sources of ignition - No smoking. Keep container closed when not in use.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical

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installations / working materials must comply with the technological safety standards.

Further information on storage conditions : Protect from humidity and water.

Advice on common storage : Do not store near acids.  
Do not store together with oxidizing and self-igniting products.  
Never allow product to get in contact with water during storage.  
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Further information on storage stability : No decomposition if stored and applied as directed.

### 7.3 Specific end use(s)

This information is not available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
aluminium powder (stabilised)	7429-90-5	TWA (Inhalable)	10 mg/m <sup>3</sup>	GB EH40
Further information	The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m <sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m <sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			
		TWA (Respirable)	4 mg/m <sup>3</sup>	GB EH40
Further information	The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m <sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m <sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			
		TWA (inhalable dust)	10 mg/m <sup>3</sup>	GB EH40
Further information	For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust, The			

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	<p>COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m<sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m<sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used</p>			
	<table border="1"><tr><td>TWA (Respirable dust)</td><td>4 mg/m<sup>3</sup></td><td>GB EH40</td></tr></table>	TWA (Respirable dust)	4 mg/m <sup>3</sup>	GB EH40
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### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	Workers	Skin contact	long term – systemic effects	0.8 mg/kg
	Workers	Inhalation	long term – systemic effects	16.2 mg/m <sup>3</sup>

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	Consumers	Skin contact	long term – systemic effects	0.5 mg/kg
	Consumers	Inhalation	long term – systemic effects	4.9 mg/m3
	Consumers	Ingestion	long term – systemic effects	1.4 mg/kg
Epoxy acrylate	Workers	Skin contact	long term – systemic effects	33 mg/kg
	Workers	Inhalation	long term – systemic effects	1.17 mg/m3
	Consumers	Inhalation	long term – systemic effects	0.29 mg/m3
	Consumers	Skin contact	long term – systemic effects	16.67 mg/kg
	Consumers	Oral	long term – systemic effects	0.17 mg/kg
aluminium powder (stabilised)	Workers	Inhalation	long term – local effects	3.72 mg/m3
	Consumers	Oral	long term – systemic effects	3.95 mg/kg
	Workers	Inhalation	Long-term systemic effects	3.72 mg/m3
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	Workers	Skin contact	long term – systemic effects	31.20 mg/kg
	Workers	Inhalation	long term – systemic effects	110 mg/m3
	Consumers	Ingestion	long term – systemic effects	18.8 mg/kg
	Consumers	Skin contact	long term – systemic effects	18.8 mg/kg
	Consumers	Inhalation	long term – systemic effects	32.60 mg/m3
Glycerol, propoxylated, esters with acrylic acid	Workers	Skin contact	long term – systemic effects	1.92 mg/kg
	Workers	Inhalation	long term – systemic effects	16.22 mg/m3
	Consumers	Ingestion	long term – systemic effects	1.39 mg/kg
	Consumers	Skin contact	long term – systemic effects	1.15 mg/kg
	Consumers	Inhalation	long term – systemic effects	4.87 mg/m3

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Propylidynetrimethanol, ethoxylated, esters with acrylic acid	Soil	0.00587 mg/kg
	Fresh water	0.00195 mg/l
	Fresh water sediment	0.0082 mg/kg



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	STP	10 mg/l
	Marine water	0.000195 mg/l
	Marine sediment	0.00082 mg/kg
Epoxy acrylate	Fresh water	0.1 mg/l
	Marine water	0.01 mg/l
	Fresh water sediment	35.8 mg/kg
	Marine sediment	3.58 mg/kg
	clarification plant	10 mg/l
	Soil	7.1 mg/kg
aluminium powder (stabilised)	Fresh water	0.0749 mg/l
	clarification plant	20 mg/l
1-isopropyl-2,2-dimethyltrimethylene diisobutyrate	Fresh water	0.014 mg/l
	Marine water	0.0014 mg/l
	Fresh water sediment	5.29 mg/kg
	Soil	1.05 mg/kg
	STP	3 mg/l
	Marine sediment	0.529 mg/kg
Glycerol, propoxylated, esters with acrylic acid	Soil	0.00111 mg/kg
	Fresh water	0.00574 mg/l
	Fresh water sediment	0.01697 mg/kg
	Marine water	0.000574 mg/l
	Marine sediment	0.001697 mg/kg
	STP	10 mg/l

### 8.2 Exposure controls

#### Personal protective equipment

Eye protection : Goggles

Safety glasses

Hand protection

Material : Solvent-resistant gloves (butyl-rubber)

Remarks

: Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The exact break through time can be obtained from the protective glove producer and this has to be observed. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Recommended preventive skin protection Skin should be washed after contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use suitable breathing protection if workplace concentration requires.

### Environmental exposure controls

Water : The product should not be allowed to enter drains, water courses or the soil.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : silver

Odour : characteristic

Odour Threshold : No data available

pH : No data available

Freezing point : No data available

Boiling point/boiling range : > 100 °C

Flash point : > 100 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : No data available

Auto-ignition temperature : No data available

Smoldering temperature : No data available

Decomposition temperature : No data available

Explosive properties : No data available

Oxidizing properties : No data available

Upper explosion limit / Upper flammability limit : No data available

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Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Density : No data available

Bulk density : No data available

Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Flow time : No data available

### 9.2 Other information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if stored and applied as directed.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Contact with acids and alkalis may release hydrogen.

Stable under recommended storage conditions.

### 10.4 Conditions to avoid

Conditions to avoid : Do not allow evaporation to dryness.

No data available

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### 10.5 Incompatible materials

Materials to avoid : Acids  
Bases  
Oxidizing agents

### 10.6 Hazardous decomposition products

Contact with water or humid air : This information is not available.

Thermal decomposition : This information is not available.

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Not classified based on available information.

#### Components:

##### **aluminium powder (stabilised):**

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

##### **1-isopropyl-2,2-dimethyltrimethylene diisobutyrate:**

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg  
Method: OECD Test Guideline 402

##### **2-hydroxy-1-(4-(4-(2-hydroxy-2-methylpropionyl)benzyl)phenyl)-2-methylpropan-1-one:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

#### **Skin corrosion/irritation**

Causes skin irritation.

#### Product:

Remarks: May cause skin irritation and/or dermatitis.

#### Components:

:

Result: Skin irritation

Remarks: May cause skin irritation and/or dermatitis.

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:

Species: Rabbit  
Exposure time: 4 h  
Method: OECD Test Guideline 404  
Result: No skin irritation

:

Remarks: May cause skin irritation and/or dermatitis.

### **Serious eye damage/eye irritation**

Not classified based on available information.

### **Product:**

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

### **Components:**

#### **Propylidynetrimethanol, ethoxylated, esters with acrylic acid:**

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

#### **1-isopropyl-2,2-dimethyltrimethylene diisobutyrate:**

Species: Rabbit  
Exposure time: 72 h  
Method: OECD Test Guideline 405  
Result: No eye irritation

#### **Glycerol, propoxylated, esters with acrylic acid:**

Remarks: Eye irritation

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

May cause an allergic skin reaction.

#### **Respiratory sensitisation**

Not classified based on available information.

### **Product:**

Remarks: Causes sensitisation.  
May cause sensitisation of susceptible persons by skin contact.

### **Components:**

#### **Propylidynetrimethanol, ethoxylated, esters with acrylic acid:**

Result: May cause sensitisation by skin contact.

Remarks: Causes sensitisation.  
May cause sensitisation of susceptible persons by skin contact.

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### **Glycerol, propoxylated, esters with acrylic acid:**

Remarks: Causes sensitisation.

May cause sensitisation of susceptible persons by skin contact.

### **2-Propenoic acid, ester with C12-16-alkyl glycidyl ether:**

Result: May cause sensitisation by skin contact.

### **Germ cell mutagenicity**

Not classified based on available information.

### **Carcinogenicity**

Not classified based on available information.

### **Reproductive toxicity**

Suspected of damaging the unborn child.

### **STOT - single exposure**

Not classified based on available information.

### **STOT - repeated exposure**

Not classified based on available information.

### **Aspiration toxicity**

Not classified based on available information.

### **Further information**

#### **Product:**

Remarks: No data available

#### **Components:**

#### **Propylidynetrimethanol, ethoxylated, esters with acrylic acid:**

Remarks: No data available

#### **Glycerol, propoxylated, esters with acrylic acid:**

Remarks: No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### **Components:**

#### **Propylidynetrimethanol, ethoxylated, esters with acrylic acid:**

Toxicity to daphnia and other aquatic invertebrates : (Daphnia (water flea)): 10,232.73 mg/l

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### **1-isopropyl-2,2-dimethyltrimethylene diisobutyrate:**

Toxicity to daphnia and other aquatic invertebrates : (Daphnia (water flea)): 2.46 mg/l

### **Ecotoxicology Assessment**

Long-term (chronic) aquatic hazard : Harmful to aquatic life with long lasting effects.

### **12.2 Persistence and degradability**

No data available

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

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

#### **Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

### **12.6 Other adverse effects**

#### **Product:**

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

#### **Components:**

#### **Propylidynetrimethanol, ethoxylated, esters with acrylic acid:**

Additional ecological information : No data available

#### **Glycerol, propoxylated, esters with acrylic acid:**

Additional ecological information : No data available

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## **SECTION 13: Disposal considerations**

European Waste Catalogue : 08 03 12 - waste ink containing dangerous substances

### **13.1 Waste treatment methods**

Product : The product should not be allowed to enter drains, water

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courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.  
In accordance with local and national regulations.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
In accordance with local and national regulations.

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### SECTION 14: Transport information

#### 14.1 UN number

#### 14.2 UN proper shipping name

#### 14.3 Transport hazard class(es)

#### 14.4 Packing group

#### 14.5 Environmental hazards

#### 14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

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

Not applicable for product as supplied.

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### SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

#### 15.2 Chemical safety assessment

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### SECTION 16: Other information

#### Full text of H-Statements

H228 : Flammable solid.  
H315 : Causes skin irritation.  
H317 : May cause an allergic skin reaction.  
H319 : Causes serious eye irritation.

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H361d : Suspected of damaging the unborn child.  
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.

### Full text of other abbreviations

Aquatic Acute : Short-term (acute) aquatic hazard  
Aquatic Chronic : Long-term (chronic) aquatic hazard  
Eye Irrit. : Eye irritation  
Flam. Sol. : Flammable solids  
Repr. : Reproductive toxicity  
Skin Irrit. : Skin irritation  
Skin Sens. : Skin sensitisation  
STOT RE : Specific target organ toxicity - repeated exposure  
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits  
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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### Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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