



UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 14-5-2024 Revision date: 15-10-2024 Supersedes version of: 20-6-2024 Version: 1.1

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

1.1. Product identifier

Product form : Mixture
Product name : UV ink ELH-100 Clear
UFI : SWG0-PNMT-E80W-F7UA
Product code : ELH100-CL-BA_ELH100-CL-B2_ELH100-CL-60_ELH100-CL-22
Product group : Trade product

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

Relevant identified uses

Title	Use descriptors
UV ink ELH-100 Clear	SU0, PC18, PROC1

Full text of use descriptors: see section 16

1.3. Details of the supplier of the safety data sheet

Mimaki Europe B.V.
Stammerdijk 7E
1112 AA Diemen
Netherlands
T +31 20 4627640
reach@mimakieurope.com

1.4. Emergency telephone number

Emergency number : National Poisons Information Centre +31 (0)30 - 274 8888
(Only for the purpose of informing medical personnel in cases of accidental intoxications.
The emergency phone number is 24 hours/day available.)

Country/Area	Organisation/Company	Address	Emergency number	Comment
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER	+44 20 7188 7188	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute toxicity (oral), Category 4 H302
Skin corrosion/irritation, Category 2 H315
Serious eye damage/eye irritation, Category 1 H318
Skin sensitisation, Category 1 H317
Hazardous to the aquatic environment – Chronic Hazard, Category 2 H411

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2.2. Label elements

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

Hazard pictograms (CLP)	:	  
		GHS05 GHS07 GHS09
Signal word (CLP)	:	Danger
Contains	:	oxybis(methyl-2,1-ethanediyl) diacrylate; Hexamethylene diacrylate; 2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester; 2-Hydroxy-3-phenoxypropyl acrylate; 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid; 2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol ; 2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine; phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide; Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate; 4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl
Hazard statements (CLP)	:	H302 - Harmful if swallowed. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H318 - Causes serious eye damage. H411 - Toxic to aquatic life with long lasting effects.
Precautionary statements (CLP)	:	P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing, face protection, eye protection. P301+P312 - IF SWALLOWED: Call doctor, a POISON CENTER if you feel unwell. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P391 - Collect spillage. P308+P313 - IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	% w/w (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester	CAS-No.: 86273-46-3 EC-No.: 451-690-9	30 – 50	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Hexamethylene diacrylate (Note D)	CAS-No.: 13048-33-4 EC-No.: 235-921-9 EC Index-No.: 607-109-00-8 REACH-no: 01-2119484737-22	10 – 20	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 2, H411
oxybis(methyl-2,1-ethanediyl) diacrylate	CAS-No.: 57472-68-1 EC-No.: 260-754-3 REACH-no: 01-2119484629-21	10 – 20	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Name	Product identifier	% w/w (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol	CAS-No.: 67906-98-3 EC-No.: 630-518-8	10 – 20	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 3, H412
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	CAS-No.: 162881-26-7 EC-No.: 423-340-5 EC Index-No.: 015-189-00-5 REACH-no: 01-2119944153-43	5 – 10	Skin Sens. 1, H317 Aquatic Chronic 4, H413
Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate	CAS-No.: 84434-11-7 EC-No.: 282-810-6	5 – 10	Skin Sens. 1B, H317 Aquatic Chronic 2, H411
2-Hydroxy-3-phenoxypropyl acrylate	CAS-No.: 16969-10-1 EC-No.: 241-045-8 REACH-no: 01-2120735823-52	5 – 10	Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 2, H411
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid	CAS-No.: 55818-57-0 EC-No.: 500-130-2	5 – 10	Skin Sens. 1, H317 Aquatic Chronic 2, H411
2-[[3-[(1-oxoallyl)oxy]-2,2-bis[[[(1-oxoallyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	CAS-No.: 29570-58-9 EC-No.: 249-698-0	1 – 5	Eye Irrit. 2, H319
2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine	CAS-No.: 111497-86-0 EC-No.: 601-101-8 REACH-no: 01-2119961351-42	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl	CAS-No.: 2226-96-2 EC-No.: 218-760-9 REACH-no: 01-2119968566-20	1 – 5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 STOT RE 2, H373

Note D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words 'non-stabilised'.

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	: Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: None under normal conditions.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions	: Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Provide local exhaust or general room ventilation to minimize dust and/or vapour concentrations. Use care in walking on spilled material.
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For non-emergency personnel

Emergency procedures	: Only qualified personnel equipped with suitable protective equipment may intervene. Avoid breathing dust/fume/gas/mist/vapours/spray.
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For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Keep public away from danger area.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up	: Take up liquid spill into absorbent material.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Not expected to present a significant hazard under anticipated conditions of normal use.
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UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Precautions for safe handling	: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures	: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep cool. Protect from sunlight.
Packaging materials	: Store always product in container of same material as original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:

Local exhaust is needed at source of vapours. Keep away from heat. Ensure good ventilation of the work station.

Personal protection equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

Safety glasses

Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

Respiratory protection

Respiratory protection:

Where excessive vapour may result, wear approved mask. Extra personal protection: A/P2 filter respirator for organic vapour and harmful dust

Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Transparent.
Odour	: Not available

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Non flammable.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: 120 °C
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Viscosity, dynamic	: 20 – 26 mPa·s @ 25 °C
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: 1 – 1,2
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

UV ink ELH-100 Clear

ATE CLP (oral)	966,031 mg/kg bodyweight
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UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)	
LD50 oral rat	3530 mg/kg
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
Hexamethylene diacrylate (13048-33-4)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	3650 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester (86273-46-3)	
LD50 oral rat	300 – 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 (Acute Toxicity (Oral))
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 5,82 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EU Method B.2 (Acute Toxicity (Inhalation))
2-Hydroxy-3-phenoxypropyl acrylate (16969-10-1)	
LD50 oral rat	2000 mg/kg bodyweight
2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine (111497-86-0)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity), Guideline: other:
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide (162881-26-7)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: EU Method B.1 (Acute Toxicity (Oral))
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: other:92/69/EEC
Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate (84434-11-7)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	≥ 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity), Guideline: other:
4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl (2226-96-2)	
LD50 oral rat	1053 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity)
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol (67906-98-3)	
STOT-single exposure	May cause respiratory irritation.
4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl (2226-96-2)	
LOAEL (oral, rat)	200 mg/kg bodyweight
NOAEL (oral, rat)	40 mg/kg bodyweight/day
STOT-repeated exposure	: Not classified
oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)	
LOAEL (dermal, rat/rabbit, 90 days)	20 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study), Guideline: other:
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Hexamethylene diacrylate (13048-33-4)	
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
NOAEL (dermal, rat/rabbit, 90 days)	20 – 200 mg/kg bodyweight/day
2-Hydroxy-3-phenoxypropyl acrylate (16969-10-1)	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight/day
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid (55818-57-0)	
NOAEL (oral, rat, 90 days)	< 100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)
2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine (111497-86-0)	
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide (162881-26-7)	
NOAEL (oral, rat, 90 days)	> 1000 mg/kg bodyweight Animal: rat, Guideline: other:92/69/eec
NOAEL (dermal, rat/rabbit, 90 days)	1000 mg/kg bodyweight/day
4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl (2226-96-2)	
LOAEL (oral, rat, 90 days)	200 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents), Guideline: other:"28-day Repeated Dose Toxicity Study in Mammalian Species" prescribed in "The Notification on Partial Revision of Testing Methods Relating to New Chemical Substances" (Notification No. 700 of Kanpogyo, No.1039 of Yakuhatsu, and No.1014 of 61 Kikyoku)
NOAEL (oral, rat, 90 days)	40 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents), Guideline: other:"28-day Repeated Dose Toxicity Study in Mammalian Species" prescribed in "The Notification on Partial Revision of Testing Methods Relating to New Chemical Substances" (Notification No. 700 of Kanpogyo, No.1039 of Yakuhatsu, and No.1014 of 61 Kikyoku)
STOT-repeated exposure	May cause damage to organs (spleen) through prolonged or repeated exposure (if swallowed).

Aspiration hazard : Not classified

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)	
Viscosity, kinematic	9,41 mm²/s
Hexamethylene diacrylate (13048-33-4)	
Viscosity, kinematic	3,85 – 6,75 mm²/s
2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester (86273-46-3)	
Viscosity, kinematic	2,25 – 3,79 mm²/s
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid (55818-57-0)	
Viscosity, kinematic	352 – 1830
2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine (111497-86-0)	
Viscosity, kinematic	31,01 mm²/s

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Toxic to aquatic life with long lasting effects.

oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)	
LC50 - Fish [1]	2,2 – 4,64 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	22,3 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	16,7 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
NOEC chronic fish	1 mg/l
Hexamethylene diacrylate (13048-33-4)	
LC50 - Fish [1]	10 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	2,6 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	1,5 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	2,33 mg/l Test organisms (species): other:
LOEC (chronic)	0,24 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0,14 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	72,3 µg/L (39 d)
NOEC chronic crustacea	140 µg/L (21 d)
2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester (86273-46-3)	
LC50 - Fish [1]	6,8 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	55 mg/l Test organisms (species): Daphnia magna

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester (86273-46-3)	
EC50 72h - Algae [1]	5 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	10 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
LOEC (chronic)	0,42 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0,26 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
2-Hydroxy-3-phenoxypropyl acrylate (16969-10-1)	
LC50 - Fish [1]	10 mg/l
EC50 - Crustacea [1]	19,5 mg/l
EC50 72h - Algae [1]	4,4 mg/l
EC50 72h - Algae [2]	1,7 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 96h - Algae [1]	1,33 – 4,1 mg/l
EC50 96h - Algae [2]	1,33 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid (55818-57-0)	
LC50 - Fish [1]	> 0,082 mg/l Test organisms (species): Cyprinus carpio
EC50 - Crustacea [1]	> 16 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	17 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	4,9 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
NOEC (chronic)	≥ 0,51 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine (111497-86-0)	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide (162881-26-7)	
LC50 - Fish [1]	> 0,09 mg/l Test organisms (species): other:Zebra Fish Brachydanio rerio
EC50 - Crustacea [1]	> 1,175 mg/l Test organisms (species): other aquatic crustacea:Daphnia Magna
EC50 - Crustacea [2]	> 1175 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	> 1,175 mg/l Test organisms (species): other aquatic crustacea:
EC50 72h - Algae [1]	> 0,26 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
NOEC chronic crustacea	8,1 µg/L (21 d)
Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate (84434-11-7)	
LC50 - Fish [1]	1,89 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	2,26 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	1,01 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate (84434-11-7)	
EC50 72h - Algae [2]	0,239 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl (2226-96-2)	
LC50 - Fish [1]	545 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	54 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	157 mg/l (24 h)
EC50 72h - Algae [1]	272 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	1038 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
LOEC (chronic)	4,5 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (acute)	26 mg/l 48 h
NOEC (chronic)	1,5 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

UV ink ELH-100 Clear	
Persistence and degradability	Rapidly degradable
oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)	
Persistence and degradability	Rapidly degradable
Hexamethylene diacrylate (13048-33-4)	
Persistence and degradability	Rapidly degradable
Biodegradation	100 %
2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester (86273-46-3)	
Persistence and degradability	Rapidly degradable
2-[[3-[(1-oxoallyl)oxy]-2,2-bis[[[(1-oxoallyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl] diacrylate (29570-58-9)	
Persistence and degradability	Rapidly degradable
2-Hydroxy-3-phenoxypropyl acrylate (16969-10-1)	
Persistence and degradability	Rapidly degradable
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid (55818-57-0)	
Persistence and degradability	Rapidly degradable
2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol (67906-98-3)	
Persistence and degradability	Rapidly degradable
2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine (111497-86-0)	
Persistence and degradability	Rapidly degradable
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide (162881-26-7)	
Persistence and degradability	Rapidly degradable

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate (84434-11-7)

Persistence and degradability	Rapidly degradable
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4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl (2226-96-2)

Persistence and degradability	Rapidly degradable
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12.3. Bioaccumulative potential

Hexamethylene diacrylate (13048-33-4)

Partition coefficient n-octanol/water (Log Pow)	2,81 @ 25 °C
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2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester (86273-46-3)

Partition coefficient n-octanol/water (Log Pow)	1,7 @ 25 °C
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2-Hydroxy-3-phenoxypropyl acrylate (16969-10-1)

Partition coefficient n-octanol/water (Log Pow)	2,03 @ 25°C
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4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid (55818-57-0)

Partition coefficient n-octanol/water (Log Pow)	3,8
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phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide (162881-26-7)

Partition coefficient n-octanol/water (Log Pow)	4,65 – 5,8 @ 20 - 22 °C and pH 7 - 8.3
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Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate (84434-11-7)

Partition coefficient n-octanol/water (Log Pow)	2,91 @ 25 °C
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4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl (2226-96-2)

Partition coefficient n-octanol/water (Log Pow)	0,56 @ 20 °C and pH 7
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Dispose of this material and its container at hazardous or special waste collection point. Avoid release to the environment.
European List of Waste (LoW, EC 2000/532)	: 08 03 12* - waste ink containing dangerous substances

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

HP Code

: HP6 - "Acute Toxicity:" waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.
HP4 - "Irritant – skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye.
HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.
HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 3082	UN 3082	UN 3082	UN 3082	UN 3082
14.2. UN proper shipping name				
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	Environmentally hazardous substance, liquid, n.o.s.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport document description				
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hexamethylene diacrylate ; 2-Propenoic acid, 1,6-hexanediyl ester, polymer with 2-aminoethanol), 9, III, (-)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III
14.3. Transport hazard class(es)				
9	9	9	9	9
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes EmS-No. (Fire): F-A EmS-No. (Spillage): S-F	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR) : M6
Special provisions (ADR) : 274, 335, 375, 601
Limited quantities (ADR) : 5I

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Special packing provisions (ADR)	: PP1
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T4
Portable tank and bulk container special provisions (ADR)	: TP1, TP29
Tank code (ADR)	: LGBV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13
Hazard identification number (Kemler No.)	: 90
Orange plates	:



Tunnel restriction code (ADR)	: -
EAC code	: •3Z

Transport by sea

Special provisions (IMDG)	: 274, 335, 969
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: LP01, P001
Special packing provisions (IMDG)	: PP1
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1, TP29
Stowage category (IMDG)	: A

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y964
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 964
PCA max net quantity (IATA)	: 450L
CAO packing instructions (IATA)	: 964
CAO max net quantity (IATA)	: 450L
Special provisions (IATA)	: A97, A158, A197, A215
ERG code (IATA)	: 9L

Inland waterway transport

Classification code (ADN)	: M6
Special provisions (ADN)	: 274, 335, 375, 601
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: M6
Special provisions (RID)	: 274, 335, 375, 601
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Special packing provisions (RID)	: PP1
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T4

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Portable tank and bulk container special provisions (RID)	: TP1, TP29
Tank codes for RID tanks (RID)	: LGBV
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW31
Colis express (express parcels) (RID)	: CE8
Hazard identification number (RID)	: 90

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	UV ink ELH-100 Clear ; oxybis(methyl-2,1-ethanediyl) diacrylate ; Hexamethylene diacrylate ; 2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester ; 2-[[3-[(1-oxoallyl)oxy]-2,2-bis[(1-oxoallyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate ; 2-Hydroxy-3-phenoxypropyl acrylate ; 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid ; 2-Propenoic acid, (1-methyl-1,2-ethanediyl) bis[oxy(methyl-2,1-ethanediyl)] ester, reaction products with diethylamine ; Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(c)	UV ink ELH-100 Clear ; Hexamethylene diacrylate ; 2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester ; 2-Hydroxy-3-phenoxypropyl acrylate ; 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid ; Ethyl Phenyl(2,4,6-trimethylbenzoyl)phosphinate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
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
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Abbreviations and acronyms:	
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disruptor

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Aquatic Chronic 4	Hazardous to the aquatic environment – Chronic Hazard, Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.

UV ink ELH-100 Clear

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-statements:	
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1B	Skin sensitisation, category 1B
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

Full text of use descriptors	
PC18	Ink and Toners
PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
SU0	Other

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Acute Tox. 4 (Oral)	H302	Calculation method
Skin Irrit. 2	H315	Calculation method
Eye Dam. 1	H318	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Chronic 2	H411	Calculation method

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.