

Issuing Date 07-Feb-2019

Revision Date 07-Feb-2019

Revision Number 2

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Product Code(s)	SDS-06142 EN E
Product Name	VeroBlackPlus, RGD875
PN (Part Number)	OBJ-02262, OBJ-03286, OBJ-04063, OBJ-06267
Denmark PR No	N/A
Chemical name	Acrylic formulation
Pure substance/mixture	Mixture

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

Recommended Use	Printing inks
Uses advised against	This product is a cartridge containing ink. Under normal conditions of use, the substance is released from a cartridge only inside an appropriate printing system, and therefore, exposure is limited

1.3. Details of the supplier of the safety data sheet**Importer**

Stratasys EMEA Regional Office
Airport Boulevard B 120
77836 Rheinmünster, Germany
Phone: +49-7229-7772-0

For further information, please contact

E-mail address info@Stratasys.com**1.4. Emergency telephone number****Emergency Telephone** +44 1235 239670 - Europe - Multi lingual response

Austria	Poison Information Centre (AT): +43-(0)1-406 43 43
Belgium	Poison Centre (BE): +32 70 245 245
Croatia	Poison Control (CR): +385 1 2348 342
Czech Republic	Poison Control (CS): +420 224 919 293, +420 224 915 402
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Estonia	Poison Control (ET): 16662, (+372) 626 93 90
Finland	Poison Information Centre (FI): +358 9 471 977
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Centre Berlin (DE): +49 030 30686 790 (24 h service, Advice in German and English)
Greece	Poison Information Center (EL): (0030) 2107793777
Hungary	Poison Information Service (HU): (+ 36-80) 201-199

Iceland	Poison Information Center: 543 2222
Italy	Poison Centre, Milan (IT): +39 02 6610 1029
Latvia	Poison Information Center (LV): +371 67042473
Lithuania	Poison Information Office (LT): +370 5236 20 52 or +370 687 53 378
Luxembourg	Belgian Poison Center: (+352) 8002-5500
Netherlands	National Poisons Information Center (NVIC): 030-274 8888
Norway	Poison Center: 22 59 13 00
Portugal	Poison Information Centre (PT): +351 21 330 3284
Spain	Poison Information Service (ES): +34 91 562 04 20
Sweden	112 – ask for Poisons Information

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitisation	Category 1B - (H317)
Specific target organ toxicity (single exposure)	Category 3 - (H335)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains 4-(1-Oxo-2-propenyl)-morpholine, Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, 2-Hydroxy-3-phenoxypropyl acrylate, (Octahydro-4,7-methano-1H-indenediyl)bis(methylene)diacrylate



Signal word

Danger

Hazard statements

H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H335 - May cause respiratory irritation
 H373 - May cause damage to organs through prolonged or repeated exposure
 H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements

P101 - If medical advice is needed, have product container or label at hand
 P102 - Keep out of reach of children
 P260 - Do not breathe dust/fume/gas/mist/vapours/spray
 P271 - Use only outdoors or in a well-ventilated area
 P273 - Avoid release to the environment
 P280 - Wear protective gloves and eye/face protection
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor
 P391 - Collect spillage
 P405 - Store locked up
 P501 - Dispose of contents/ container to an approved waste disposal plant

2.3. Other hazards

May be harmful if swallowed. Toxic to aquatic life.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
Proprietary	Listed	-	10 - 30	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1B (H317) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	17-2120129664-54-0000
Proprietary	Listed	-	10 - 30	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Skin Sens. 1 (H317) STOT RE 2 (H373)	17-2120129668-46-0000
Proprietary	Listed	-	10 - 30	Skin Sens. 1B (H317)	No data available
Proprietary	Listed	-	3-10	Skin Sens. 1B (H317) Aquatic Chronic 2 (H411)	No data available
Proprietary	Not Listed	-	3-10	Skin Sens. 1 (H317)	No data available
Proprietary	Listed	-	1-3	Repr. 2 (H361f) Skin Sens. 1 (H317) Aquatic Chronic 2 (H411)	No data available
camphene	201-234-8	79-92-5	0.1 - 0.3	Flam. Sol. 2 (H228) Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Ethoxylated Trimethylolpropane Triacrylate	-	28961-43-5	0.1 - 0.3	Skin Sens. 1B (H317) Eye Irrit. 2 (H319)	No data available
Acrylic acid	201-177-9	79-10-7	0.1 - 0.3	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Corr. 1A (H314) Eye Dam. 1 (H318) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)	No data available
Xylene, mixture of isomers	215-535-7	1330-20-7	0.1 - 0.3	Flam. Liq. 3 (H226) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) STOT RE 2 (H373) Asp. Tox. 1 (H304)	No data available
Glycerol, propoxylated, esters with acrylic acid	500-114-5	52408-84-1	0.1 - 0.3	Skin Sens. 1 (H317) Eye Irrit. 2 (H319)	No data available
1,7,7-Trimethyltricyclo[2.2.1.0 ^{2,6}]heptane	208-083-7	508-32-7	0.1 - 0.3	Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
2-methoxy-1-methylethyl acetate	203-603-9	108-65-6	<0.1	Flam. Liq. 3 (H226) STOT SE 3 (H336)	No data available
n-butyl acetate	204-658-1	123-86-4	<0.1	Flam. Liq. 3 (H226) STOT SE 3 (H336) (EUH066)	No data available
ethylbenzene	202-849-4	100-41-4	<0.1	Flam. Liq. 2 (H225) Acute Tox. 4 (H332) STOT RE 2 (H373) Asp. Tox. 1 (H304)	No data available

4-Methoxyphenol	205-769-8	150-76-5	<0.1	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Repr. 2 (H361d) Aquatic Chronic 3 (H412)	No data available
2,3-Epoxypropyl phenyl ether	204-557-2	122-60-1	<0.1	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 1B (H350) STOT SE 3 (H335) Aquatic Chronic 3 (H412)	No data available
2,6-Bis(1,1-Dimethylethyl)-4-Methyl-Phenol	204-881-4	128-37-0	<0.1	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available

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

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed or concerned: Get medical advice/attention.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

Symptoms Burning sensation. Itching. Rashes. Hives.

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

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing agent suitable for type of surrounding fire
Class B fires: Use carbon dioxide (CO₂), regular dry chemical (sodium bicarbonate), regular foam (Aqueous Film Forming Foam-AFFF), or water spray to cool containers

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by skin contact.

5.3. Advice for firefighters

Special protective equipment for fire-fighters Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Keep out of drains, sewers, ditches and waterways. Inhalation is a health risk. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Occupational Spill Release Intact cartridges do not pose a leak or spill hazard. Damaged cartridges may leak uncured ink. Stop leak if you can do it without risk Use water spray to reduce vapours or divert vapour cloud drift Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container Keep out of drains, sewers, ditches and waterways

Other Information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Do not eat, drink or smoke when using this product. Avoid breathing vapours or mists. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

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

Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals. Store in a cool, well ventilated area. Store in accordance with local regulations. Keep container tightly closed. Store between 15 °C and 27 °C. Shipment temperature (up to 5 weeks) is -20 °C to 50 °C. Store in a combustible storage area away from heat and open flame.

Hints on joint storage**Storage class**

LGK10 - Combustible liquids unless storage class 3

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure disclaimer**

Personal protection measures are only needed if cartridge is damaged punctured causing spillage of material.

8.1. Control parameters**Exposure Limits**

Chemical name	European Union	United Kingdom	France	Spain	Germany
camphene 79-92-5	-	-	TWA: 1000 mg/m ³ STEL: 1500 mg/m ³	-	-
Acrylic acid 79-10-7	-	-	TWA: 2 ppm TWA: 6 mg/m ³ STEL: 10 ppm STEL: 30 mg/m ³	TWA: 2 ppm TWA: 6 mg/m ³ vía dérmica*	TWA: 10 ppm TWA: 30 mg/m ³
Xylene, mixture of isomers 1330-20-7	TWA 50 ppm TWA 221 mg/m ³ STEL 100 ppm STEL 442 mg/m ³ *	TWA: 50 ppm TWA: 220 mg/m ³ STEL: 100 ppm STEL: 441 mg/m ³ Sk*	TWA: 50 ppm TWA: 221 mg/m ³ TWA: 1000 mg/m ³ STEL: 100 ppm STEL: 442 mg/m ³ STEL: 1500 mg/m ³ *	TWA: 50 ppm TWA: 221 mg/m ³ STEL: 100 ppm STEL: 442 mg/m ³ vía dérmica*	TWA: 100 ppm TWA: 440 mg/m ³ H*
1,7,7-Trimethyltricyclo[2.2.1.02,6]heptane 508-32-7	-	-	TWA: 1000 mg/m ³ STEL: 1500 mg/m ³	-	-
2-methoxy-1-methylethyl acetate 108-65-6	TWA 50 ppm TWA 275 mg/m ³ STEL 100 ppm STEL 550 mg/m ³ *	TWA: 50 ppm TWA: 274 mg/m ³ STEL: 100 ppm STEL: 548 mg/m ³ Sk*	TWA: 50 ppm TWA: 275 mg/m ³ STEL: 100 ppm STEL: 550 mg/m ³ *	TWA: 50 ppm TWA: 275 mg/m ³ STEL: 100 ppm STEL: 550 mg/m ³ vía dérmica*	TWA: 50 ppm TWA: 270 mg/m ³
n-butyl acetate 123-86-4	-	TWA: 150 ppm TWA: 724 mg/m ³ STEL: 200 ppm STEL: 966 mg/m ³	TWA: 150 ppm TWA: 710 mg/m ³ STEL: 200 ppm STEL: 940 mg/m ³	TWA: 150 ppm TWA: 724 mg/m ³ STEL: 200 ppm STEL: 965 mg/m ³	TWA: 62 ppm TWA: 300 mg/m ³
ethylbenzene 100-41-4	TWA 100 ppm TWA 442 mg/m ³ STEL 200 ppm STEL 884 mg/m ³ *	TWA: 100 ppm TWA: 441 mg/m ³ STEL: 125 ppm STEL: 552 mg/m ³ Sk*	TWA: 20 ppm TWA: 88.4 mg/m ³ TWA: 1000 mg/m ³ STEL: 100 ppm STEL: 442 mg/m ³ STEL: 1500 mg/m ³ *	TWA: 100 ppm TWA: 441 mg/m ³ STEL: 200 ppm STEL: 884 mg/m ³ vía dérmica*	TWA: 20 ppm TWA: 88 mg/m ³ H*
4-Methoxyphenol 150-76-5	-	-	TWA: 5 mg/m ³	TWA: 5 mg/m ³	-

2,3-Epoxypropyl phenyl ether 122-60-1	-	-	TWA: 1 ppm TWA: 6 mg/m ³	TWA: 0.1 ppm TWA: 0.62 mg/m ³ vía dérmica*	-
2,6-Bis(1,1-Dimethylethyl)-4-Methyl-Phenol 128-37-0	-	TWA: 10 mg/m ³ STEL: 30 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Acrylic acid 79-10-7	-	TWA: 2 ppm P*	-	TWA: 2 ppm TWA: 6 mg/m ³ STEL: 15 ppm STEL: 45 mg/m ³	TWA: 2 ppm TWA: 5.9 mg/m ³ H*
Xylene, mixture of isomers 1330-20-7	TWA: 50 ppm TWA: 221 mg/m ³ STEL: 100 ppm STEL: 442 mg/m ³ pelle*	TWA: 50 ppm TWA: 221 mg/m ³ STEL: 100 ppm STEL: 442 mg/m ³ P*	TWA: 210 mg/m ³ STEL: 442 mg/m ³ H*	TWA: 50 ppm TWA: 220 mg/m ³ STEL: 100 ppm STEL: 440 mg/m ³ iho*	TWA: 25 ppm TWA: 109 mg/m ³ H*
2-methoxy-1-methylethyl acetate 108-65-6	TWA: 50 ppm TWA: 275 mg/m ³ STEL: 100 ppm STEL: 550 mg/m ³ pelle*	TWA: 50 ppm TWA: 275 mg/m ³ STEL: 100 ppm STEL: 550 mg/m ³ P*	TWA: 550 mg/m ³	TWA: 50 ppm TWA: 270 mg/m ³ STEL: 100 ppm STEL: 550 mg/m ³ iho*	TWA: 50 ppm TWA: 275 mg/m ³ H*
n-butyl acetate 123-86-4	-	TWA: 150 ppm STEL: 200 ppm	-	TWA: 150 ppm TWA: 720 mg/m ³ STEL: 200 ppm STEL: 960 mg/m ³	TWA: 150 ppm TWA: 710 mg/m ³
ethylbenzene 100-41-4	TWA: 100 ppm TWA: 442 mg/m ³ STEL: 200 ppm STEL: 884 mg/m ³ pelle*	TWA: 100 ppm TWA: 442 mg/m ³ STEL: 200 ppm STEL: 884 mg/m ³ P*	TWA: 215 mg/m ³ STEL: 430 mg/m ³ H*	TWA: 50 ppm TWA: 220 mg/m ³ STEL: 200 ppm STEL: 880 mg/m ³ iho*	TWA: 50 ppm TWA: 217 mg/m ³ H*
4-Methoxyphenol 150-76-5	-	TWA: 5 mg/m ³	-	-	TWA: 5 mg/m ³
2,3-Epoxypropyl phenyl ether 122-60-1	-	TWA: 0.1 ppm P*	-	TWA: 0.5 ppm TWA: 3.1 mg/m ³ iho*	TWA: 0.1 ppm TWA: 0.6 mg/m ³ H*
2,6-Bis(1,1-Dimethylethyl)-4-Methyl-Phenol 128-37-0	-	TWA: 2 mg/m ³	-	TWA: 10 mg/m ³ STEL: 20 mg/m ³	TWA: 10 mg/m ³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Acrylic acid 79-10-7	-	TWA: 10 ppm TWA: 30 mg/m ³ STEL: 10 ppm STEL: 30 mg/m ³	STEL: 29.5 mg/m ³ TWA: 10 mg/m ³	TWA: 10 ppm TWA: 30 mg/m ³ STEL: 15 ppm STEL: 45 mg/m ³	TWA: 2 ppm TWA: 6 mg/m ³ STEL: 6 ppm STEL: 18 mg/m ³
Xylene, mixture of isomers 1330-20-7	TWA: 50 ppm TWA: 221 mg/m ³ STEL 100 ppm STEL 442 mg/m ³ H*	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 200 ppm STEL: 870 mg/m ³ H*	TWA: 100 mg/m ³	TWA: 25 ppm TWA: 108 mg/m ³ STEL: 37.5 ppm STEL: 135 mg/m ³ H*	TWA: 50 ppm TWA: 221 mg/m ³ STEL: 100 ppm STEL: 442 mg/m ³ Sk*
2-methoxy-1-methylethyl acetate 108-65-6	TWA: 50 ppm TWA: 275 mg/m ³ STEL 100 ppm STEL 550 mg/m ³ H*	TWA: 50 ppm TWA: 275 mg/m ³ STEL: 50 ppm STEL: 275 mg/m ³	STEL: 520 mg/m ³ TWA: 260 mg/m ³	TWA: 50 ppm TWA: 270 mg/m ³ STEL: 75 ppm STEL: 337.5 mg/m ³ H*	TWA: 50 ppm TWA: 275 mg/m ³ STEL: 100 ppm STEL: 550 mg/m ³ Sk*
n-butyl acetate 123-86-4	TWA: 100 ppm TWA: 480 mg/m ³ STEL 100 ppm STEL 480 mg/m ³ Ceiling 100 ppm Ceiling 480 mg/m ³	TWA: 100 ppm TWA: 480 mg/m ³ STEL: 200 ppm STEL: 960 mg/m ³	STEL: 950 mg/m ³ TWA: 200 mg/m ³	TWA: 75 ppm TWA: 355 mg/m ³ STEL: 112.5 ppm STEL: 418.75 mg/m ³	TWA: 150 ppm TWA: 710 mg/m ³ STEL: 200 ppm STEL: 950 mg/m ³
ethylbenzene 100-41-4	TWA: 100 ppm TWA: 440 mg/m ³ STEL 200 ppm	TWA: 50 ppm TWA: 220 mg/m ³ STEL: 50 ppm	STEL: 400 mg/m ³ TWA: 200 mg/m ³	TWA: 5 ppm TWA: 20 mg/m ³ STEL: 10 ppm	TWA: 100 ppm TWA: 442 mg/m ³ STEL: 200 ppm

	STEL 880 mg/m ³ H*	STEL: 220 mg/m ³ H*		STEL: 30 mg/m ³ H*	STEL: 884 mg/m ³ Sk*
4-Methoxyphenol 150-76-5	TWA: 5 mg/m ³ STEL 10 mg/m ³	-	TWA: 5 mg/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 5 mg/m ³ STEL: 15 mg/m ³
2,3-Epoxypropyl phenyl ether 122-60-1	H*	TWA: 1 ppm TWA: 6 mg/m ³ H*	STEL: 3 mg/m ³ TWA: 0.6 mg/m ³	TWA: 1 ppm TWA: 5 mg/m ³ STEL: 2 ppm STEL: 10 mg/m ³	TWA: 0.1 ppm TWA: 0.6 mg/m ³ STEL: 0.3 ppm STEL: 1.8 mg/m ³
2,6-Bis(1,1-Dimethylethyl)-4-Methyl-Phenol 128-37-0	TWA: 10 mg/m ³	TWA: 10 mg/m ³ STEL: 40 mg/m ³	-	-	TWA: 10 mg/m ³ STEL: 30 mg/m ³

Biological occupational exposure limits

Chemical name	European Union	United Kingdom	France	Spain	Germany
Xylene, mixture of isomers 1330-20-7	-	650	-	1	1.5 mg/L 2000 mg/L
ethylbenzene 100-41-4	-	-	-	700	300 mg/g
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Xylene, mixture of isomers 1330-20-7	-	-	-	5.0	
ethylbenzene 100-41-4	-	-	-	5.2	
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Xylene, mixture of isomers 1330-20-7	-	1.5	-	-	-
ethylbenzene 100-41-4	-	800	-	-	-

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls**Personal protective equipment**

Eye/face protection Tight sealing safety goggles.

Hand Protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state liquid

Appearance	Ink cartridge
Odour	Characteristic
Colour	black
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	N/A	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	>= 100 - < 250 °C	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit	No data available	
Vapour pressure	No data available	None known
Vapour density	No data available	None known
Relative density	1.09	g/cm3
Water solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidising properties	No information available	

9.2. Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity	Heating may cause a fire.
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10.2. Chemical stability

Stability	Decomposes on exposure to light. Unstable if heated.
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Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Uncured ink will polymerize on exposure to light.
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10.4. Conditions to avoid

Conditions to avoid	Avoid exposure to heat and light.
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10.5. Incompatible materials

Incompatible materials Not applicable under normal conditions of use and storage.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal Decomposition Products. Combustion: oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation of respiratory tract. (based on components).
Eye contact	Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes. (based on components).
Skin contact	May cause sensitisation by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. (based on components).

Information on toxicological effects

Symptoms Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 2,245.20 mg/kg mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Proprietary	= 4890 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Proprietary	= 588 mg/kg (rat)	> 2000 mg/kg (rat)	= 5.28 mg/l (rat)
Proprietary	(Rat) LD50 = 1,590 - 3,910 mg/kg	(Rabbit) LD50 = > 2,000 mg/kg	(Rat) 1 h LC0 = 6.7 mg/l
Proprietary	= 2.000 mg/kg (Rat) (Method: OECD Test Guideline 423)	= 2.000 mg/kg (Rat)(Method: OECD Test Guideline 402)	-
Proprietary	>2000 mg/kg (Rat)	>2000 mg/kg	-
Proprietary	> 5,000 mg/kg (Rat) (OECD Guideline 401)	> 2,000 mg/kg (Rat) (OECD Guideline 402)	-
camphene	> 5 g/kg (Rat)	> 2500 mg/kg (Rabbit)	= 17100 mg/m ³ (Rat) 1 h
Ethoxylated Trimethylolpropane Triacrylate	-	> 13 g/kg (Rabbit)	-
Acrylic acid	= 193 mg/kg (Rat) = 33500 µg/kg (Rat)	= 295 mg/kg (Rabbit) = 280 µL/kg (Rabbit)	= 3.6 mg/L (Rat) 4 h = 11.1 mg/L (Rat) 1 h
Xylene, mixture of isomers	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit) > 1700 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h = 5000 ppm (Rat) 4 h
2-methoxy-1-methylethyl acetate	= 8532 mg/kg (Rat)	> 5 g/kg (Rabbit)	-
n-butyl acetate	= 10768 mg/kg (Rat)	> 17600 mg/kg (Rabbit)	= 390 ppm (Rat) 4 h

ethylbenzene	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.4 mg/L (Rat) 4 h
4-Methoxyphenol	= 1600 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-
2,3-Epoxypropyl phenyl ether	= 2600 mg/kg = 3850 mg/kg = 2600 mg/kg (Rat) = 3850 mg/kg (Rat)	= 1500 mg/kg (Rabbit) = 1500 µL/kg (Rabbit)	> 100 ppm (Rat) 8 h
2,6-Bis(1,1-Dimethylethyl)-4-Methyl-Phenol	> 2930 mg/kg (Rat)	> 2000 mg/kg (Rat)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Classification based on data available for ingredients. Irritating to skin.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.
Respiratory or skin sensitisation	May cause sensitisation by skin contact. Classification based on data available for ingredients.

Germ cell mutagenicity

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	European Union
2,3-Epoxypropyl phenyl ether	Muta. 2

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
2,3-Epoxypropyl phenyl ether	Carc. 1B

Reproductive toxicity

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Proprietary	Repr. 2

STOT - single exposure Classification based on data available for ingredients.

STOT - repeated exposure Classification based on data available for ingredients.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Proprietary	1.98 mg/l Fresh water	0.704 mg/l Fresh water	-	0.524 mg/l Fresh water
Proprietary	120 mg/l (algae)	-	-	120 mg/kg (daphnia)
Proprietary	Pseudokirchneriella subcapitata (green algae) 96 h EC50 = 0.17 mg/l	Oncorhynchus mykiss (rainbow trout) 96 h LC50 = 27 mg/l	-	Daphnia magna (Water flea) 48 h EC50 = 95 mg/l
Proprietary	(Pseudokirchneriella subcapitata) : 1,6 mg/l (Method: OECD Test Guideline 201)	(Fish) : 4,95 mg/l	-	(Daphnia magna Straus) : 2,36 mg/l (Method: OECD Test Guideline 202)
Proprietary	> 2.01 mg/l (growth rate),	6.53 mg/l, Oryzias latipes	-	3.53 mg/l, Daphnia

	Pseudokirchneriella subcapitata (OECD Guideline 201, static)	(JIS K 0102-71, semistatic)		magna (OECD Guideline 202, part 1, static)
camphene	1000: 72 h Desmodesmus subspicatus mg/L EC50	0.72: 96 h Brachydanio rerio mg/L LC50 flow-through 150: 96 h Brachydanio rerio mg/L LC50 static	-	22: 48 h Daphnia magna mg/L EC50
Acrylic acid	0.04: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 0.17: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50	222: 96 h <i>Brachydanio rerio</i> mg/L LC50 semi-static	-	95: 48 h <i>Daphnia magna</i> mg/L EC50 270: 24 h <i>Daphnia magna</i> mg/L LC50 Static
Xylene, mixture of isomers	-	13.5 - 17.3: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 19: 96 h <i>Lepomis macrochirus</i> mg/L LC50 30.26 - 40.75: 96 h <i>Poecilia reticulata</i> mg/L LC50 static 23.53 - 29.97: 96 h <i>Pimephales promelas</i> mg/L LC50 static 7.711 - 9.591: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 2.661 - 4.093: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 780: 96 h <i>Cyprinus carpio</i> mg/L LC50 semi-static 780: 96 h <i>Cyprinus carpio</i> mg/L LC50 13.4: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 13.1 - 16.5: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through	-	0.6: 48 h <i>Gammarus lacustris</i> mg/L LC50 3.82: 48 h water flea mg/L EC50
2-methoxy-1-methylethyl acetate	-	161: 96 h <i>Pimephales promelas</i> mg/L LC50 static	-	500: 48 h <i>Daphnia magna</i> mg/L EC50
n-butyl acetate	674.7: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	17 - 19: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 62: 96 h <i>Leuciscus idus</i> mg/L LC50 static 100: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	-	72.8: 24 h <i>Daphnia magna</i> mg/L EC50
ethylbenzene	2.6 - 11.3: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 438: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 4.6: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 1.7 - 7.6: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static	9.6: 96 h <i>Poecilia reticulata</i> mg/L LC50 static 7.55 - 11: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 11.0 - 18.0: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 4.2: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 semi-static 9.1 - 15.6: 96 h <i>Pimephales promelas</i> mg/L LC50 static 32: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	-	1.8 - 2.4: 48 h <i>Daphnia magna</i> mg/L EC50

4-Methoxyphenol	-	28.5: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 84.3: 96 h Pimephales promelas mg/L LC50 flow-through	-	-
2,3-Epoxypropyl phenyl ether	-	43: 96 h Carassius auratus mg/L LC50 static	-	-
2,6-Bis(1,1-Dimethylethyl)-4-Methyl-Phenol	6: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.42: 72 h Desmodemus subspicatus mg/L EC50	5: 48 h Oryzias latipes mg/L LC50	-	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Acrylic acid	0.46
Xylene, mixture of isomers	3.15
2-methoxy-1-methylethyl acetate	0.43
n-butyl acetate	1.81
ethylbenzene	3.2
4-Methoxyphenol	1.3
2,6-Bis(1,1-Dimethylethyl)-4-Methyl-Phenol	4.17

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

12.6. Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Waste codes / waste designations according to EWC / AVV 08 03 12* Waste ink containing dangerous substances.

Section 14: TRANSPORT INFORMATION

Additional information

The environmentally hazardous substance mark is not required when transported in sizes of ≤5L or ≤5kg

The marine pollutant mark is not required when transported in sizes of ≤5L or ≤5kg

IMDG

14.1 UN Number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, (Octahydro-4,7-methano-1H-indenediyl)bis(methylene)diacrylate), 9, III, Marine pollutant
14.5 Marine pollutant	This product contains a chemical which is listed as a severe marine pollutant according to IMDG/IMO
Environmental Hazard	Yes
14.6 Special Provisions	274, 335, 969
EmS-No	F-A, S-F
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

RID

14.1 UN Number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9
Labels	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, (Octahydro-4,7-methano-1H-indenediyl)bis(methylene)diacrylate), 9, III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	274, 335, 375, 601
Classification code	M6

ADR

14.1 UN Number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9
Labels	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, (Octahydro-4,7-methano-1H-indenediyl)bis(methylene)diacrylate), 9, III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	274, 335, 601, 375
Classification code	M6
Tunnel restriction code	(E)

IATA

14.1 UN Number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate, (Octahydro-4,7-methano-1H-indenediyl)bis(methylene)diacrylate), 9, III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	A97, A158, A197
ERG Code	9L



Section 15: REGULATORY INFORMATION

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

National regulations

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Xylene, mixture of isomers 1330-20-7	RG 4bis, RG 84	-
2-methoxy-1-methylethyl acetate 108-65-6	RG 84	-
n-butyl acetate 123-86-4	RG 84	-
ethylbenzene 100-41-4	RG 84	-
4-Methoxyphenol 150-76-5	RG 65	-

Germany

Water hazard class (WGK) hazardous to water (WGK 2)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
2,3-Epoxypropyl phenyl ether - 122-60-1	28.	

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

15.2. Chemical safety assessment

Chemical Safety Report No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet**Full text of H-Statements referred to under section 3**

EUH066 - Repeated exposure may cause skin dryness or cracking
 H225 - Highly flammable liquid and vapour
 H226 - Flammable liquid and vapour
 H228 - Flammable solid
 H302 - Harmful if swallowed
 H304 - May be fatal if swallowed and enters airways
 H312 - Harmful in contact with skin
 H314 - Causes severe skin burns and eye damage
 H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H319 - Causes serious eye irritation
 H332 - Harmful if inhaled
 H335 - May cause respiratory irritation
 H336 - May cause drowsiness or dizziness
 H341 - Suspected of causing genetic defects
 H350 - May cause cancer
 H361d - Suspected of damaging 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
 H411 - Toxic to aquatic life with long lasting effects
 H412 - Harmful to aquatic life with long lasting effects

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)
 Ceiling Maximum limit value * Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method
Ozone	Calculation method

Revision Date

07-Feb-2019

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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