SAFETY DATA SHEET

1. Identification

Product identifier: ARISTA UV R2 BLACK INK

Other means of identification
SDS number: 000001015907

Recommended restrictions
Recommended use: Printing ink
Restrictions on use: Reserved for industrial and professional use.

Manufactured for:

Distributor

Company Name: LTD “ARISTA INK TECHNOLOGIES”

Address: Aglonas 11-11
LV-1057
Riga
Latvia

Telephone: +371 22334368

Fax:
Contact Person:
E-mail: office@arista.lv

Emergency telephone number:

Transport Emergency	Non-transportation
Call CHEMTREC : +1 800 4249300	Health Emergency Phone : +1 303 6235716 International : +1 703 5273887

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin Corrosion/Irritation	Category 2

Serious Eye Damage/Eye Irritation	Category 1
Skin sensitizer	Category 1
Toxic to reproduction	Category 1B
Specific Target Organ Toxicity - Single Exposure	Category 3[1.]
Specific Target Organ Toxicity - Repeated Exposure	Category 1

Target Organs

1. Respiratory tract irritation.

Environmental Hazards

Acute hazards to the aquatic environment	Category 2
Chronic hazards to the aquatic environment	Category 2

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement:
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May damage fertility or the unborn child.
May cause respiratory irritation.
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing should not be allowed out of the workplace. 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. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Avoid release to the environment.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Wash with plenty of water/… If skin irritation or rash occurs: Get medical advice/attention. Immediately call a POISON CENTER/doctor.

Wash contaminated clothing before reuse. Collect spillage.

Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylacrylaat	5888-33-5	10 - <20%
Phenoxyethylacrylate	48145-04-6	10 - <20%
Tetrahydrofurfuryl acrylate	2399-48-6	10 - <16.591%
Oxybis(methyl-2,1-ethanediyl) diacrylate	57472-68-1	10 - <20%
N-vinyl caprolactam	2235-00-9	5 - <10%
2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol	67906-98-3	5 - <10%
Isodecyl acrylate	1330-61-6	5 - <10%
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	75980-60-8	1 - <3%
Ethoxylated phenyl acrylate	56641-05-5	1 - <2.5%
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	1 - <5%
carbon black (carbon)	1333-86-4	1 - <5%
2-phenoxyethanol	122-99-6	1 - <5%
blue organic pigment	147-14-8	0.1 - <1%
Hexamethylene diacrylate	13048-33-4	0.1 - <1%
Tetrahydrofurfuryl alcohol	97-99-4	0.1 - <0.3%
caprolactam	105-60-2	0.01 - <1%
Heptane	142-82-5	0 - <0.1%
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	128-37-0	0 - <0.1%
Hydroquinone	123-31-9	0.01 - <0.1%
Phenol, 4-methoxy-	150-76-5	0 - <0.1%
Tris(N-hydroxy-N-nitrosophenylaminato-O,O')aluminium	15305-07-4	0 - <0.1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical attention if symptoms occur.

Inhalation: Move into fresh air and keep at rest. Get medical attention immediately. Show this safety data sheet to the doctor in attendance.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Eye contact: Flush thoroughly with water for at least 15 minutes. Get medical assistance.

Ingestion:	Rinse mouth with plenty of water. Call a physician immediately. Show this safety data sheet to the doctor in attendance.
Personal Protection for First-aid Responders:	CAUTION! First aid personnel must be aware of own risk during rescue! See Section 8 of the SDS for Personal Protective Equipment.

Most important symptoms/effects, acute and delayed

Symptoms:	See section 11 of the SDS for additional information on health hazards.
Hazards:	See section 11 of the SDS for additional information on health hazards.

Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards:	No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Extinguish with foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media:	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No data available.
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
For non-emergency personnel:	Use personal protective equipment.
For emergency responders:	Warn everybody of potential hazards and evacuate if necessary. Use personal protective equipment.
Methods and material for containment and cleaning up:	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal. For waste disposal, see section 13 of the SDS.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.

Prevention of secondary hazards: No data available.

7. Handling and storage

Precautions for safe handling: Do not get in eyes. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Avoid contact with skin. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities: Store locked up.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
carbon black (carbon) - Inhalable fraction.	TWA		3 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
carbon black (carbon)	REL		3.5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL		3.5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA		3.5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
carbon black (carbon) - as PAHs	REL		0.1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2016)
blue organic pigment - Dust and mist. - as Cu	REL		1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA		1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
blue organic pigment - Fume. - as Cu	TWA		0.2 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
	REL		0.1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2016)
caprolactam - Inhalable fraction and vapor.	TWA		5 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
caprolactam - Vapor.	STEL	0.66 ppm	3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	0.22 ppm	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
caprolactam - Dust.	STEL		3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL		1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
caprolactam - Vapor.	STEL	10 ppm	40 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
caprolactam - Dust.	STEL		3 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA		1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
caprolactam - Vapor.	TWA	5 ppm	20 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Heptane	TWA	400 ppm		US. ACGIH Threshold Limit Values (03 2014)
	STEL	500 ppm		US. ACGIH Threshold Limit Values (03 2014)

	REL	85 ppm	350 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	Ceil_Time	440 ppm	1,800 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	500 ppm	2,000 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	500 ppm	2,000 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	400 ppm	1,600 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol - Inhalable fraction and vapor.	TWA		2 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	REL		10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA		10 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Hydroquinone	TWA		1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
	Ceil_Time		2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL		2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA		2 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Phenol, 4-methoxy-	TWA		5 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
	REL		5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA		5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Tris(N-hydroxy-N-nitrosophenylaminato-O,O')aluminium - Respirable fraction.	TWA		1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)

Appropriate Engineering Controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Emergency showers and eye wash stations should be available.

Individual protection measures, such as personal protective equipment

General information:

Educate and train employees in the safe use and handling of this product. Do not eat, drink or smoke when using the product. Eye wash facilities and emergency shower must be available when handling this product. Wash at the end of each work shift and before eating, smoking and using the toilet.

Eye/face protection:

Safety goggles

Skin Protection

Hand Protection:

Additional Information: Protective gloves should be used if there is a risk of direct contact or splash., Chemical resistant gloves required for prolonged or repeated contact., Butyl rubber., Glove thickness: > 0.35 mm, Break-through time: > 240 min, Risk of splashes:, Nitrile rubber., Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable., The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Skin and Body Protection:	Wear suitable protective clothing as protection against splashing or contamination.
Respiratory Protection:	Under normal conditions of use, respirator protection is not required. In case of inadequate ventilation, use respiratory protection. If respirators are used, OSHA requires compliance with its respiratory protection program (29 CFR 1910.134).
Hygiene measures:	Employees should wash their hands and face before eating, drinking, or using tobacco products. Keep away from foodstuffs, drinks and tobacco.

9. Physical and chemical properties

Appearance	
Physical state:	liquid
Form:	liquid
Color:	Black
Odor:	Sweetish
Odor Threshold:	No data available.
pH:	No data available.
Freezing point:	No data available.
Boiling Point:	No data available.
Flash Point:	No data available.
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability Limit - Upper (%):	No data available.
Flammability Limit - Lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density (air=1):	No data available.
Density:	No data available.
Relative density:	1.0608
Solubility(ies)	
Solubility in Water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Kinematic viscosity:	No data available.
Dynamic viscosity:	No data available.
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Other information	
VOC Content:	227.5 g/l ~21.4 %

10. Stability and reactivity

Reactivity:	Material is stable under normal conditions.

Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Not known.
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	By heating and fire, harmful vapors/gases may be formed.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	Inhalation is the primary route of exposure. In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Causes skin irritation. May cause an allergic skin reaction.
Eye contact:	Causes serious eye damage.
Ingestion:	May be ingested by accident. Ingestion may cause irritation and malaise.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix: 2,830.67 mg/kg

Dermal
Product: ATEmix: 15,319.68 mg/kg

Inhalation
Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Isodecyl acrylate	LC 50 (Rat): > 1.19 mg/l
2-phenoxyethanol	LC 50 (Rat): > 1,000 mg/m3
Hexamethylene diacrylate	LC 0 (Rat): 0.41 mg/l
caprolactam	LC 50 (Rat): 0.3 mg/l
Heptane	LC50 (rat): 103 mg/l

Repeated dose toxicity

Product: No data available.

Specified substance(s):

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylacrylaat	LOAEL (Rat(Female, Male), Inhalation): 0.753 mg/l Inhalation Read-across from supporting substance (structural analogue or surrogate), Key study NOAEL (rat(male/female)): 100 mg/kg Based on available data, the classification criteria are not met. NOAEL (Rat(Female, Male), Oral, 28 - 53 d): 100 mg/kg Oral Experimental result, Key study NOAEL (Rat(Female, Male), Inhalation): 0.075 mg/l Inhalation Read-across from supporting substance (structural analogue or surrogate), Key study NOAEL (Rat(Female, Male), Inhalation): 0.226 mg/l Inhalation Read-across from supporting substance (structural analogue or surrogate), Key study
Phenoxyethylacrylate	NOAEL (Rat(Female, Male), Oral, 2 Weeks): 500 mg/kg Oral Experimental result, Supporting study
Oxybis(methyl-2,1-ethanediyl) diacrylate	NOAEL (Rat(Female, Male), Oral, 28 - 52 d): 250 mg/kg Oral Read-across from supporting substance (structural analogue or surrogate), Key study
N-vinyl caprolactam	NOAEL (Rat(Female, Male), Inhalation): 0.058 mg/l Inhalation Experimental result, Key study
Isodecyl acrylate	NOAEL (Rat(Female, Male), Inhalation): 0.075 mg/l Inhalation Read-across from supporting substance (structural analogue or surrogate), Key study
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	LOAEL (Rat(Female, Male), Oral, 28 d): 250 mg/kg Oral Experimental result, Key study No data available. NOAEL (Rat(Female, Male), Oral, 28 d): 50 mg/kg Oral Experimental result, Key study LOAEL (Rat(Female, Male), Oral, 64 - 91 d): 300 mg/kg Oral Experimental result, Key study NOAEL (Rat(Female, Male), Oral, 64 - 91 d): 100 mg/kg Oral Experimental result, Key study
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	NOAEL (Rat(Female, Male), Oral): 300 mg/kg Oral Experimental result, Key study
carbon black (carbon)	NOAEL (Rat(Female, Male), Dermal): > 250 mg/kg Dermal Read-across from supporting substance (structural analogue or surrogate), Supporting study NOAEL (Rat(Male), Dermal): 1 mg/kg Dermal Read-across from supporting substance (structural analogue or surrogate), Supporting study NOAEL (Mouse(Female, Male), Dermal, 12 - 18 Months): 20 %(m) Dermal Experimental result, Key study NOAEL (Rat(Female), Dermal): 10 mg/kg Dermal Read-across from supporting substance (structural analogue or surrogate), Supporting study NOAEL (Rat(Female, Male), Dermal, 28 d): 1 mg/kg Dermal Read-across from supporting substance (structural analogue or surrogate), Key study
2-phenoxyethanol	LOAEL (Rat(Female, Male), Oral, 13 Weeks): 400 mg/kg Oral Experimental result, Supporting study NOAEL (Rat(Female, Male), Oral, 13 Weeks): 80 mg/kg Oral Experimental result, Supporting study
blue organic pigment	NOAEL (Rat(Female, Male), Oral, 28 d): 1,000 mg/kg Oral Read-across based on grouping of substances (category approach), Key study
Hexamethylene diacrylate	NOAEL (Rat(Female, Male), Oral, 28 - 52 d): 250 mg/kg Oral Experimental result, Key study
caprolactam	NOAEL (Rat(Female, Male), Inhalation, 13 - 17 Weeks): 0.066 mg/l Inhalation Experimental result, Key study NOAEL (Rat(Female, Male), Inhalation, 13 - 17 Weeks): 0.245 mg/l

	Inhalation Experimental result, Key study
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	NOAEL (Rat(Male), Oral, 1.25 - 22.75 Months): 25 mg/kg Oral Experimental result, Key study
Phenol, 4-methoxy-	LOAEL (Rat(Female, Male), Oral, >= 28 d): 300 mg/kg Oral Experimental result, Key study No data available. NOAEL (Rat(Female, Male), Oral, >= 28 d): 150 mg/kg Oral Experimental result, Key study

Skin Corrosion/Irritation

Product: The health hazard evaluation is based on the toxicological properties of a similar material.

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Oxybis(methyl-2,1-ethanediyl) diacrylate	in vivo (Rabbit): Category 1 , 24 - 72 hrs OECD GHS
Isodecyl acrylate	Mildly Irritating
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	in vivo (Rabbit): Not Classified , 24 - 72 hrs EU
carbon black (carbon)	in vivo (Rabbit): Not irritating , 24 - 72 hrs EU
2-phenoxyethanol	in vivo (Rabbit): Irritating , 24 - 72 hrs EU
blue organic pigment	in vivo (Rabbit): Not irritating , 24 - 72 hrs
Hexamethylene diacrylate	Irritating
Tetrahydrofurfuryl alcohol	Severely Irritating
caprolactam	Irritating
Heptane	in vivo (Rabbit): Not irritating , 24 - 72 hrs GHS, EU, 2007
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	in vivo (Rabbit): Not irritating , 24 - 72 hrs EU
Hydroquinone	Irritating

Respiratory or Skin Sensitization

Product: No data available.

Specified substance(s):

Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	May cause sensitization by skin contact.
carbon black (carbon)	Skin sensitization:, in vivo (Guinea pig): Non sensitising
2-phenoxyethanol	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Hexamethylene diacrylate	Skin sensitization:, in vivo (Guinea pig): Sensitising
caprolactam	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Heptane	Skin sensitization:, in vivo (Guinea pig): Non sensitising
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Hydroquinone	Skin sensitization:, in vivo (Guinea pig): Sensitising
Phenol, 4-methoxy-	May cause sensitization by skin contact. Skin sensitization:, in vivo (Guinea pig): Sensitising

Carcinogenicity

Product: Not classified The carbon black in this product is embedded in a matrix which minimizes the likelihood of exposure to the pigment.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

carbon black (carbon)	Overall evaluation: 2B. Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specified substance(s):

Phenol, 4-methoxy- No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Specified substance(s):

Phenol, 4-methoxy-	No information available.

Target Organs
Specific Target Organ Toxicity - Single Exposure: Respiratory tract irritation.

Aspiration Hazard
Product: No data available.

Specified substance(s):

Phenol, 4-methoxy-	No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylacrylaat	LC 50 (Danio rerio, 96 h): 0.704 mg/l Experimental result, Key study
Oxybis(methyl-2,1-ethanediyl) diacrylate	NOAEL (Leuciscus idus, 96 h): 1 mg/l Experimental result, Key study LC 50 (Leuciscus idus, 96 h): 2.2 mg/l
N-vinyl caprolactam	LC 50 (Danio rerio, 96 h): 318 mg/l Experimental result, Key study NOAEL (Danio rerio, 96 h): 208 mg/l Experimental result, Key study LC 0 (Danio rerio, 96 h): 208 mg/l Experimental result, Key study NOAEL (Danio rerio, 96 h): 215 mg/l Experimental result, Key study LC 50 (Danio rerio, 96 h): 307 mg/l Experimental result, Key study
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	LC 50 (Oryzias latipes, 48 h): +/- 6.53 mg/l Experimental result, Key study
carbon black (carbon)	LC 50 (Salmo sp., 14 d): 248 mg/l QSAR QSAR, Key study
2-phenoxyethanol	LC 50 (Pimephales promelas, 96 h): 344 mg/l Experimental result, Key study
blue organic pigment	LC 50 (Oncorhynchus mykiss, 96 h): 355.6 mg/l experimental result
Hexamethylene diacrylate	LC 50 (Leuciscus idus, 96 h): 4.6 - 10 mg/l Experimental result, Key study
Tetrahydrofurfuryl alcohol	LC 50 (Oryzias latipes, 96 h): > 101 mg/l Experimental result, Key study
caprolactam	LC 50 (Oryzias latipes, 96 h): > 100 mg/l Experimental result, Key study

Heptane	LC50 (Leuciscus idus (golden orfe), 48 h): > 270 mg/l
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	LC 50 (96 h): 0.199 mg/l QSAR QSAR, Key study
Hydroquinone	LC 50 (Oncorhynchus mykiss, 96 h): 0.638 mg/l Experimental result, Key study
Phenol, 4-methoxy-	LC 50 (Oncorhynchus mykiss, 96 h): 28.5 mg/l Experimental result, Key study

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Phenoxyethylacrylate	EC 50 (Daphnia magna, 48 h): 1.21 mg/l Experimental result, Key study
N-vinyl caprolactam	EC 50 (Daphnia magna, 48 h): > 100 mg/l Experimental result, Key study
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	EC 50 (Daphnia magna, 48 h): 3.53 mg/l Experimental result, Key study
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	EC 50 (48 h): > 1.175 mg/l experimental result
carbon black (carbon)	LC 50 (Daphnia sp., 48 h): 164 mg/l QSAR QSAR, Key study
2-phenoxyethanol	EC 50 (Daphnia magna, 48 h): 460 mg/l Experimental result, Not specified
blue organic pigment	EC 50 (24 h): 236.7 mg/l experimental result
Hexamethylene diacrylate	EC 50 (Daphnia magna, 48 h): 2.6 mg/l Experimental result, Key study
Tetrahydrofurfuryl alcohol	EC 50 (Daphnia magna, 48 h): > 91.7 mg/l Experimental result, Key study
caprolactam	EC 50 (Daphnia magna, 48 h): 0.08 mg/l Experimental result, Key study
Heptane	EC 50 (Daphnia magna, 48 h): 1.5 mg/l Experimental result, Key study EC50 (Daphnia magna (water flea), 24 h): > 10 mg/l EC 50 (Daphnia magna, 48 h): 3.9 mg/l Experimental result, Key study
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	EC 50 (Daphnia magna, 48 h): 0.61 mg/l Experimental result, Key study NOAEL (Daphnia magna, 48 h): 0.23 mg/l Experimental result, Key study EC 50 (Daphnia magna, 24 h): > 0.7 mg/l Experimental result, Key study NOAEL (Daphnia magna, 48 h): 0.15 mg/l Experimental result, Key study EC 50 (Daphnia magna, 48 h): 0.48 mg/l Experimental result, Key study
Hydroquinone	EC 50 (Daphnia magna, 48 h): 0.134 mg/l Experimental result, Key study
Phenol, 4-methoxy-	NOAEL (Daphnia magna, 48 h): 1.32 mg/l Experimental result, Key study EC 50 (Daphnia magna, 48 h): 3 mg/l Experimental result, Key study

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Specified substance(s):	
carbon black (carbon)	NOAEL (Salmo sp., 30 d): 17 mg/l QSAR QSAR, Key study
2-phenoxyethanol	LC 50 (Danio rerio, 6 d): 461.5 - 521.6 mg/l Experimental result, Supporting study

Aquatic Invertebrates

Product:	No data available.

Toxicity to Aquatic Plants

Product:	No data available.
Specified substance(s):	
caprolactam	EC 50 (Alga, 72 h): 130 mg/l

Persistence and Degradability

Biodegradation

Product:	No data available.
Specified substance(s):	
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylacrylaat	> 0 % Detected in water. Experimental result, Key study 3.9 % Detected in water. Experimental result, Key study 34.6 % Detected in water. Experimental result, Key study 26 % Detected in water. Experimental result, Key study 57 % Detected in water. Experimental result, Key study
Phenoxyethylacrylate	22.3 % (28 d) Detected in water. Experimental result, Key study
Oxybis(methyl-2,1-ethanediyl) diacrylate	90 - 100 % (28 d) Detected in water. Experimental result, Key study
N-vinyl caprolactam	30 - 40 % (28 d) Detected in water. Experimental result, Key study
Isodecyl acrylate	70 - 80 % (15 d) Detected in water. Read-across from supporting substance (structural analogue or surrogate), Key study
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	> 0 - 10 % (28 d) Detected in water. Experimental result, Key study
2-phenoxyethanol	> 70 % Detected in water. Experimental result, Supporting study 75 % Detected in water. Experimental result, Key study 21.33 % (20 d) Detected in water. Experimental result, Supporting study 60 % Detected in water. Experimental result, Key study 61 % Detected in water. Experimental result, Supporting study
Hexamethylene diacrylate	60 - 70 % (28 d) Detected in water. Experimental result, Key study

Tetrahydrofurfuryl alcohol	92 % (28 d) Detected in water. Experimental result, Key study 0 % (60 d) Detected in water. Experimental result, Supporting study
caprolactam	5 % (28 d) Detected in water. Experimental result, Key study
Heptane	63.2 % Detected in water. Experimental result, Key study 100 % (25 d) Detected in water. Experimental result, Supporting study 28.2 % Detected in water. Experimental result, Key study 100 % (4 d) Detected in water. Experimental result, Supporting study 70 % Detected in water. Experimental result, Key study
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	4.5 % (28 d) Detected in water. Experimental result, Key study > 75 % soil Experimental result, Key study > 85 % soil Experimental result, Key study > 80 % soil Experimental result, Key study < 10 % (20 d) Detected in water. Not specified
Hydroquinone	86 % (14 d) Detected in water. Experimental result, Supporting study >= 99.9 % Sediment Experimental result, Key study 70 % (14 d) Detected in water. Experimental result, Supporting study 100 % Detected in water. Experimental result, Supporting study 97.5 % (5 d) Detected in water. Experimental result, Key study
Phenol, 4-methoxy-	99 % (28 d) Detected in water. Experimental result, Key study 86 % (28 d) Detected in water. Experimental result, Key study > 75 % (56 d) Detected in water. Experimental result, Supporting study 100 % (8 d) soil Experimental result, Supporting study 100 % (6 d) Detected in water. Experimental result, Supporting study

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylacrylaat	Danio rerio, Bioconcentration Factor (BCF): 37 Aquatic sediment Read-across from supporting substance (structural analogue or surrogate), Weight of Evidence study
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	Cyprinus carpio, Bioconcentration Factor (BCF): 22 - 32 Aquatic sediment Experimental result, Key study Cyprinus carpio, Bioconcentration Factor (BCF): 18 - 22 Aquatic sediment Experimental result, Key study Cyprinus carpio, Bioconcentration Factor (BCF): 53 - 72 Aquatic sediment Experimental result, Key study Cyprinus carpio, Bioconcentration Factor (BCF): 23 - 40 Aquatic sediment Experimental result, Key study Cyprinus carpio, Bioconcentration Factor (BCF): 47 - 55 Aquatic sediment Experimental result, Key study

2-phenoxyethanol	Bioconcentration Factor (BCF): 4.5 Aquatic sediment Estimated by calculation, Not specified Bioconcentration Factor (BCF): 0.35 Aquatic sediment Estimated by calculation, Key study
Heptane	Bioconcentration Factor (BCF): 552 Aquatic sediment Estimated by calculation, Key study
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	Cyprinus carpio, Bioconcentration Factor (BCF): 230 - 2,500 Aquatic sediment Experimental result, Weight of Evidence study Cyprinus carpio, Bioconcentration Factor (BCF): 230 - 2,500 Aquatic sediment Experimental result, Key study Cyprinus carpio, Bioconcentration Factor (BCF): 330 - 1,800 Aquatic sediment Experimental result, Key study Bioconcentration Factor (BCF): 598.4 Aquatic sediment Estimated by calculation, Weight of Evidence study Cyprinus carpio, Bioconcentration Factor (BCF): 13 - 17 Aquatic sediment Experimental result, Supporting study

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Oxybis(methyl-2,1-ethanediyl) diacrylate	Log Kow: 0.01 - 0.39 24 °C Yes Experimental result, Key study
Isodecyl acrylate	Log Kow: No data available.
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	Log Kow: 5.8 20 - 25 °C
2-phenoxyethanol	Log Kow: 1.16 Log Kow: 1.16 - 1.2 (DSC) No data available.
Hexamethylene diacrylate	Log Kow: 2.62 - 3.08 25 °C No Experimental result, Supporting study Log Kow: 3.08 (DSC)
Heptane	Log Kow: 4.66
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	Log Kow: 5.11 - 5.2 No Experimental result, Weight of Evidence study
Phenol, 4-methoxy-	Log Kow: 1.58 Log Kow: 1.34 (DSC)

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylacrylaat	No data available.
Phenoxyethylacrylate	No data available.
Tetrahydrofurfuryl acrylate	No data available.
Oxybis(methyl-2,1-ethanediyl) diacrylate	No data available.
N-vinyl caprolactam	No data available.
2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol	No data available.
Isodecyl acrylate	No data available.
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	No data available.
Ethoxylated phenyl acrylate	No data available.
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	No data available.
carbon black (carbon)	No data available.
2-phenoxyethanol	No data available.
blue organic pigment	No data available.
Hexamethylene diacrylate	No data available.
Tetrahydrofurfuryl alcohol	No data available.
caprolactam	No data available.
Heptane	No data available.
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	No data available.
Hydroquinone	No data available.
Phenol, 4-methoxy-	No data available.
Tris(N-hydroxy-N-nitrosophenylaminato-O,O')aluminium	No data available.

Other adverse effects: Toxic to aquatic life with long lasting effects.

13. Disposal considerations

General information: Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

Contaminated Packaging: Dispose in accordance with all applicable regulations.

US. RCRA Hazardous Waste Classification (40 CFR 261) If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

14. Transport information

DOT

UN Number	UN3082
UN Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(Acrylate)
Transport Hazard Class(es)	
Class	9
Label(s)	9
Packing Group	III
Environmental Hazards	Yes
Special precautions for user	Not regulated if packaging <= 5L

IATA

UN Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(Acrylate)
Transport Hazard Class(es)	
Class	9
Label(s)	9MI (Miscellaneous)
Packing Group	III
Environmental Hazards	Yes
Special precautions for user	SPECIAL PROVISION A197
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN Number	UN3082
UN Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Acrylate)
Transport Hazard Class(es)	
Class	9
Label(s)	9
EmS No.	F-AS-F
Packing Group	III
Limited quantity	5.00L
Excepted quantity	E1
Environmental Hazards	Yes
Special precautions for user	CODE 2.10.2.7

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
Heptane	lbs. 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard
Skin Corrosion or Irritation
Serious eye damage or eye irritation
Respiratory or Skin Sensitization
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-ylacrylaat	10000 lbs
Phenoxyethylacrylate	10000 lbs
Tetrahydrofurfuryl acrylate	10000 lbs
Oxybis(methyl-2,1-ethanediyl) diacrylate	10000 lbs
N-vinyl caprolactam	10000 lbs
2-Propenoic acid ,1-6-hexanediyl ester, polymer with 2-aminoethanol	10000 lbs
Isodecyl acrylate	10000 lbs
Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-	10000 lbs
Ethoxylated phenyl acrylate	10000 lbs
Phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	10000 lbs
carbon black (carbon)	10000 lbs
2-phenoxyethanol	10000 lbs
blue organic pigment	10000 lbs
Hexamethylene diacrylate	10000 lbs
Tetrahydrofurfuryl alcohol	10000 lbs
caprolactam	10000 lbs
Heptane	10000 lbs
2,6-bis(1,1-dimethylethyl)-4-methyl-phenol	10000 lbs
Hydroquinone	10000 lbs
Phenol, 4-methoxy-	10000 lbs
Tris(N-hydroxy-N-nitrosophenylaminato-O,O')aluminium	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Phenoxyethylacrylate	N230 lbs	N230 lbs.
Ethoxylated phenyl acrylate	N230 lbs	N230 lbs.
2-phenoxyethanol	N230 lbs	N230 lbs.

Clean Air Act (CAA) Section 111 SOCMI Intermediate or Final Volatile Organic Compounds (40 CFR 60.489):

Chemical Identity
2-phenoxyethanol
caprolactam

Clean Air Act (CAA) Section 112, 1990 Amendments, Statutory Hazardous Air Pollutants:

Chemical Identity

Phenoxyethylacrylate
Ethoxylated phenyl acrylate
2-phenoxyethanol

Clean Air Act (CAA) Section 112(i) High-Risk Hazardous Air Pollutants (40 CFR 63.74):
None present.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
This product can expose you to chemicals including carbon black (carbon) which is [are] known to the State of California to cause cancer.
For more information go to www.P65Warnings.ca.gov.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Phenoxyethylacrylate
Ethoxylated phenyl acrylate
carbon black (carbon)
2-phenoxyethanol

US. Massachusetts RTK - Substance List

Chemical Identity
carbon black (carbon)

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Phenoxyethylacrylate
Ethoxylated phenyl acrylate
carbon black (carbon)
2-phenoxyethanol

US. Rhode Island RTK

Chemical Identity
carbon black (carbon)

US. Toxic Substances Control Act (TSCA)

This mixture contains an ingredient which is classified as an US EPA TSCA Low Volume Exemption (LVE). All other ingrediants are either on the TSCA list or exempt from being listed.

16.Other information, including date of preparation or last revision

Issue Date: 04-16-2019

Revision Information: No data available.

Version #:	1.2
Further Information:	This information is furnished without warranty, expressed or implied, and is believed to be accurate to the best knowledge of the manufacturer. The data on this SDS relates only to the specific material designated herein. The manufacturer assumes no legal responsibility for use or reliance upon these data.
Disclaimer:	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.