





### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Mixture

Chemical name	CAS No.	Weight-%	Proprietary
Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	5888-33-5	10 - 30	*
4-(1-Oxo-2-propenyl)-morpholine	5117-12-4	10 - 30	*
Proprietary	Proprietary	10 - 30	*
Proprietary	Proprietary	10 - 30	*
Proprietary	Proprietary	10 - 30	*
Proprietary	Proprietary	1 - 3	*
Proprietary	Proprietary	1 - 3	*
Titanium dioxide	13463-67-7	0.3-1	*
2-Propenoic acid	79-10-7	0.1-0.3	*
Glycerol, propoxylated, esters with acrylic acid	52408-84-1	0.1-0.3	*
camphene	79-92-5	0.1-0.3	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

### 4. FIRST AID MEASURES

#### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Inhalation</b>	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	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.
<b>Skin contact</b>	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 physician.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

**Self-protection of the first aider** Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

**Symptoms** Burning sensation. Itching. Rashes. Hives.

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

**Note to physicians** May cause sensitization in susceptible persons. Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media** Use extinguishing agent suitable for type of surrounding fire. Class B fires: Use carbon dioxide (CO<sub>2</sub>), regular dry chemical (sodium bicarbonate), regular foam (Aqueous Film Forming Foam-AFFF), or water spray to cool containers.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical** No information available.

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Special protective equipment for fire-fighters**

Cool containers with flooding quantities of water until well after fire is out. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Move containers from fire area if you can do it without risk. Use personal protection equipment. 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.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions**

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

**Other Information**

Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**

**Environmental precautions**

See Section 12 for additional Ecological Information.

**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**

Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling**

Handle in accordance with good industrial hygiene and safety practice.

**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.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Limits**

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure

limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 10 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
2-Propenoic acid 79-10-7	TWA: 2 ppm S*	(vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m <sup>3</sup> (vacated) S*	TWA: 2 ppm TWA: 6 mg/m <sup>3</sup>

### Appropriate engineering controls

**Engineering controls**                      Showers  
    Eyewash stations  
    Ventilation systems.

### Individual protection measures, such as personal protective equipment

**Eye/face protection**                      Tight sealing safety goggles.

**Hand Protection**                              Wear suitable gloves.

**Skin and body protection**                      Wear suitable protective 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**                      Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Physical state**                                      liquid  
**Appearance**                                      Ink cartridge  
**Odor**    Characteristic  
**Color**    White  
**Odor threshold**                                      No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	N/A	
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point / boiling range</b>	No data available	None known
<b>Flash point</b>	>= 100 - < 250 °C / >= 212 - < 482 °F	
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability limit:</b>	No data available	
<b>Lower flammability limit:</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Vapor density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water solubility</b>	Insoluble in water	
<b>Solubility in other solvents</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known

<b>Decomposition temperature</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b>Explosive properties</b>	No information available	
<b>Oxidizing properties</b>	No information available	

**Other Information**

<b>Softening point</b>	No information available
<b>Molecular weight</b>	No information available
<b>VOC Content (%)</b>	No information available
<b>Liquid Density</b>	No information available
<b>Bulk density</b>	No information available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	Heating may cause a fire.
<b>Chemical stability</b>	Decomposes on exposure to light. Unstable if heated.
<b>Possibility of hazardous reactions</b>	Uncured ink will polymerize on exposure to light.
<b>Conditions to avoid</b>	None known based on information supplied.
<b>Incompatible materials</b>	None known based on information supplied.
<b>Hazardous decomposition products</b>	Thermal Decomposition Products. Combustion: oxides of carbon.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Harmful if swallowed. (based on components). Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Information on toxicological effects**

<b>Symptoms</b>	Redness. Burning. May cause blindness. Itching. Rashes. Hives.
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**Numerical measures of toxicity****Acute toxicity**

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

<b>ATEmix (oral)</b>	1,691.00 mg/kg
<b>ATEmix (dermal)</b>	4,037.00 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	55.10 mg/l

<b>Unknown acute toxicity</b>	0 % of the mixture consists of ingredient(s) of unknown toxicity
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**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Exo-1,7,7-trimethylbicyclo[2.2.1]	= 4890 mg/kg ( Rat )	> 3000 mg/kg ( Rabbit )	-

hept-2-yl acrylate 5888-33-5			
4-(1-Oxo-2-propenyl)-morpholin e 5117-12-4	= 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	>2000 mg/kg (Rat)	>2000 mg/kg	-
Proprietary	= 2.000 mg/kg (Rat) (Method: OECD Test Guideline 423)	= 2.000 mg/kg (Rat)(Method: OECD Test Guideline 402)	-
Proprietary	rat (oral): > 2,500 mg/kg (OECD Guideline 423)	> 5,000 mg/kg (OECD Guideline 402)	> 1 mg/l 4 h (OECD Guideline 403)
Proprietary	> 5,000 mg/kg (Rat) (OECD Guideline 401)	> 2,000 mg/kg (Rat) (OECD Guideline 402)	-
Titanium dioxide 13463-67-7	> 10000 mg/kg > 10000 mg/kg ( Rat )	-	-
2-Propenoic acid 79-10-7	= 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
camphene 79-92-5	> 5 g/kg ( Rat )	> 2500 mg/kg ( Rabbit )	= 17100 mg/m <sup>3</sup> ( Rat ) 1 h

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

**Skin corrosion/irritation** No information available.

**Serious eye damage/eye irritation** No information available.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Titanium dioxide 13463-67-7	-	Group 2B	-	X
2-Propenoic acid 79-10-7	-	Group 3	-	-

#### **IARC (International Agency for Research on Cancer)**

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

## 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate 5888-33-5	1.98 mg/l Fresh water	0.704 mg/l Fresh water	-	0.524 mg/l Fresh water

4-(1-Oxo-2-propenyl)-morpholine 5117-12-4	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	14.4 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)	24 mg/l, Brachydanio rerio (Directive 92/69/EEC, C.1, static)	-	53.9 mg/l, Daphnia magna (OECD Guideline 202, part 1, semistatic)
Proprietary	> 2.01 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)	6.53 mg/l, Oryzias latipes (JIS K 0102-71, semistatic)	-	3.53 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
2-Propenoic acid 79-10-7	0.04: 72 h Desmodesmus subspicatus mg/L EC50 0.17: 96 h Pseudokirchneriella subcapitata mg/L EC50	222: 96 h Brachydanio rerio mg/L LC50 semi-static	-	95: 48 h Daphnia magna mg/L EC50 270: 24 h Daphnia magna mg/L LC50 Static
camphene 79-92-5	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

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

#### Component Information

Chemical name	Partition coefficient
2-Propenoic acid 79-10-7	0.46

**Other adverse effects** No information available.

### 13. DISPOSAL CONSIDERATIONS

#### 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.

**US EPA Waste Number** U008

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
2-Propenoic acid 79-10-7	-	-	-	U008

### 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

**DOT**

**UN/ID no.** UN3082  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Hazard Class** 9  
**Packing group** III  
**Special Provisions** 8, 146, 173, 335, IB3, T4, TP1, TP29  
**Description** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid), 9, III, Marine pollutant  
**Emergency Response Guide Number** 171

**TDG**

**UN/ID no.** UN3082  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Hazard Class** 9  
**Packing group** III  
**Description** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid), 9, III

**MEX**

**UN/ID no.** UN3082  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Hazard Class** 9  
**Special Provisions** 274, 331, 335  
**Packing group** III  
**Description** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid), 9, III

**ICAO (air)**

**UN/ID no.** UN3082  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Hazard Class** 9  
**Packing group** III  
**Special Provisions** A97, A158, A197  
**Description** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid), 9, III

**IATA**

**UN Number** UN3082  
**Transport hazard class(es)** 9  
**Packing group** III  
**ERG Code** 9L  
**Special Provisions** A197  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (2-Propenoic acid), 9, III

**IMDG**

**UN Number** UN3082  
**Transport hazard class(es)** 9  
**Packing group** III  
**EmS-No.** F-A, S-F  
**Special Provisions** 274, 335, 969  
**Description** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid, STABILIZER), 9, III, Marine pollutant

**RID**

**UN Number** UN3082  
**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Transport hazard class(es)** 9

<b>Packing group</b>	III
<b>Classification code</b>	M6
<b>Description</b>	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid), 9, III (STABILIZER, PROPRIETARY STABILIZER)
<b>Labels</b>	9

**ADR**

<b>UN Number</b>	UN3082
<b>UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
<b>Transport hazard class(es)</b>	9
<b>Packing group</b>	III
<b>Classification code</b>	M6
<b>Tunnel restriction code</b>	(E)
<b>Special Provisions</b>	274, 335, 601, 375
<b>Description</b>	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid), 9, III (STABILIZER, PROPRIETARY STABILIZER)
<b>Labels</b>	9

**ADN**

<b>UN/ID no</b>	UN3082
<b>UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
<b>Transport hazard class(es)</b>	9
<b>Packing group</b>	III
<b>Classification code</b>	M6
<b>Special Provisions</b>	274, 335, 375, 601
<b>Description</b>	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Propenoic acid), 9, III (STABILIZER, PROPRIETARY STABILIZER)
<b>Hazard label(s)</b>	9
<b>Limited quantity (LQ)</b>	5 L



## 15. REGULATORY INFORMATION

**International Inventories**

<b>TSCA</b>	Complies
<b>DSL/NDL</b>	Complies
<b>EINECS/ELINCS</b>	No information available
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	No information available
<b>PICCS</b>	No information available
<b>AICS</b>	Complies

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
2-Propenoic acid 79-10-7	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

**US State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Titanium dioxide - 13463-67-7	Carcinogen

**U.S. State Right-to-Know Regulations****US State Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
2-Propenoic acid 79-10-7	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

<b>NFPA</b>	Health hazards 3	Flammability 1	Instability 0	Physical and chemical properties -
<b>HMIS</b>	Health hazards 3 *	Flammability 1	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>	<i>* = Chronic Health Hazard</i>			

Revision Date 08-Nov-2017

Revision Note No information available.

**Disclaimer**

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**End of Safety Data Sheet**