Safety Data Sheet

Inslogic High Detail Resin

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

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

1.1 Product identifier

Product Name: High Detail Resin

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

Relevant identified uses: For use in LCD, SLA, and DLP 3D Printers in the range of 385-405 nm.

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

1.3 Details of the manufacturer/supplier of the safety data sheet

Manufacturer: Inslogic International Holding Co., Ltd.
3, 13/F, Grand City Plaza
1-17 Sai Lau Kok Road
Tsuen Wan, New Territories
Hong Kong
+852-6268-5255

Importer: Sea&Mew Accounting Ltd
London
Electric Avenue Vision 25,
Enfield EN3 7GD
+44 7399648608
info@seamew.net

1.4 Emergency telephone number: No additional information available.

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture:

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

Acute toxicity (oral), Category 4
Skin corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 1
Skin sensitisation, Category 1
Specific target organ toxicity - Single exposure, Category 3,
Respiratory tract irritation
Specific target organ toxicity - Repeated exposure, Category 2

Additional Information: May cause damage to organs through prolonged or repeated exposure. Harmful if swallowed. May cause respiratory irritation. Causes skin irritation. May cause an allergic skin reaction. May cause serious eye damage.

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP)

Hazard pictograms:

GHS05 GHS07 GHS08

Signal Word: Warning

Hazard statements:

H302 - Harmful if swallowed
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

Precautionary statements:

P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection

2.3 Other hazards: None known.

SECTION 3: Composition/information on ingredients

3.1 Substance: Not applicable.

3.2 Mixture:

Identification	Name	Classification according to Regulation (EC) No. 1272/2008 (CLP)	Weight %
CAS-No.: 68987-79-1	2-Oxepanone, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethylcyclohexane, 2-hydroxyethyl acrylate-terminated	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335	35
CAS-No.: 51852-81-4	1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with bis(isocyanatomethyl) benzene	Not classified	34
CAS-No.: 5117-12-4 EC-No.: 418-140-1 EC Index-No.: 613-222-00-3	Morpholine, 4-(1-oxo-2-propenyl)	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Eye Dam. 1, H318 Skin Sens. 1, H317 STOT RE 2, H373	30.5
CAS-No.: 13463-67-7 EC-No.: 236-675-5 EC Index-No.: 022-006-00-2	Titanium dioxide	Carc. 2, H351 If in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm	0.5

CAS-No.: 1333-86-4 EC-No.: 215-609-9	Carbon black	Not classified	0.1

Additional information: None.

Full Text of H and EUH statements: See section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes:

Show this Safety Data Sheet to the doctor in attendance. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a poison center or a doctor if you feel unwell.

Following inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. If respiratory symptoms develop or persist, seek medical advice/attention.

Following skin contact:

Wash affected area with plenty of soap and water. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, seek medical advice/attention.

Following eye contact:

Immediately rinse eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. If eye irritation develops or persists, seek medical advice/attention.

Following ingestion:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects:

Harmful if swallowed.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Delayed symptoms and effects:

Effects are dependent on exposure (dose, concentration, contact time).

4.3 Indication of any immediate medical attention and special treatment needed Specific treatment:

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media:

Do not use water jet.

5.2 Special hazards arising from the substance or mixture:

Toxic fumes may be released. Thermal decomposition can lead to the release of irritating gases and vapours.

5.3 Advice for firefighters

Personal protection equipment:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA).

Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel

Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection". Wear suitable protective clothing. For further information refer to section 8: "Exposure controls/personal protection". Ventilate spillage area. Evacuate unnecessary personnel. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

For emergency responders

Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

6.4 Reference to other sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

7.2 Conditions for safe storage, including any incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

7.3 Specific end use(s):

Refer to Section 1 (Recommended Use).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Only those substances with limit values have been included below.

National occupational exposure and biological limit values:

Titanium dioxide (13463-67-7)	
Austria - Occupational Exposure Limits	
Local name	Titandioxid (Alveolarstaub)
MAK (OEL TWA)	5 mg/m³(alveolar dust, respirable fraction)
MAK (OEL STEL)	10 mg/m³(alveolar dust, respirable fraction)
Regulatory reference	BGBl. II Nr. 156/2021

Titanium dioxide (13463-67-7)	
Belgium - Occupational Exposure Limits	
Local name	Titane (dioxyde de) # Titaandioxide
OEL TWA	10 mg/m³
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Bulgaria - Occupational Exposure Limits	
Local name	Титанов диоксид
OEL TWA	10 mg/m³(respirable dust)
Regulatory reference	Наредба № 13 от 30.12.2003 г . за защита на работещите от рискове, свързани секспозиция на химични агенти при работа (изм . и доп . ДВ . бр . 47 от 2021 г ., в сила от 04.06.2021 г .)
Croatia - Occupational Exposure Limits	
Local name	Titanov dioksid
GVI (OEL TWA)	10 mg/m³(total dust, inhalable particles) 4 mg/m³(respirable dust)
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
Denmark - Occupational Exposure Limits	
Local name	Titandioxid
OEL TWA	6 mg/m³
OEL STEL	12 mg/m³
Remark	K (betyder, at stoffet anses for at kunne væ re kræftfremkaldende)
Regulatory reference	BEK nr 202 af 21/02/2023
Estonia - Occupational Exposure Limits	
Local name	Titaanoksiid
OEL TWA	5 mg/m³
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21. 12.2022, 3)
France - Occupational Exposure Limits	
OEL chemical category	Carcinogen category 2
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA)	1.25 mg/m³(respirable fraction (dust) 10 mg/m³(inhalable fraction (dust)
Greece - Occupational Exposure Limits	
Local name	Τιτανίου διοξείδιο
OEL TWA	10 mg/m³(inhalable fraction) 5 mg/m³(respirable fraction)
Regulatory reference	Π .Δ . 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Ireland - Occupational Exposure Limits	
Local name	Titanium dioxide
OEL TWA	10 mg/m³(total inhalable dust) 4 mg/m³(respirable dust)
OEL STEL	30 mg/m³(calculated-respirable dust) 12 mg/m³(calculated)
Regulatory reference	Chemical Agents Code of Practice 2021

Titanium dioxide (13463-67-7)	
Latvia - Occupational Exposure Limits	
Local name	Titāna dioksīds
OEL TWA	10 mg/m³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92)
Lithuania - Occupational Exposure Limits	
Local name	Titano dioksidas
IPRV (OEL TWA)	5 mg/m³
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	10 mg/m³
Poland - Occupational Exposure Limits	
Local name	Ditlenek tytanu
NDS (OEL TWA)	10 mg/m³(the concentration of the respirable Crystalline silica fraction is determined simultaneously-inhalable fraction)
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia. Obowiązuje jednoczesne oznaczanie stężeń frakcji respirabilnej krzemionki krystalicznej.
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Dióxido de titânio
OEL TWA	10 mg/m³
OEL chemical category	A4 - Not Classifiable as a Human Carcinogen
Remark	A4 (Agente não classificável como carcinogénico no Homem)
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Dioxid de titan
OEL TWA	10 mg/m³
OEL STEL	15 mg/m³
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Slovakia - Occupational Exposure Limits	
Local name	Oxid titaničitý
NPHV (OEL TWA)	5 mg/m³
Regulatory reference	Nariadenie vlády č . 355/2006 Z. z. (236/2020 Z. z.)
Spain - Occupational Exposure Limits	
Local name	Dióxido de titanio
VLA-ED (OEL TWA)	10 mg/m³
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Sweden - Occupational Exposure Limits	
Local name	Titandioxid
NGV (OEL TWA)	5 mg/m³(total dust)
Remark	3 (Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, Arbetarskyddsstyrelsen, numera Arbetsmiljöverket. Filterdiametern är normalt 37 mm, men kan även vara 25 mm. Trots sitt namn provtas inte den totala mängden luftburna partiklar med denna metod)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)

Titanium dioxide (13463-67-7)	
United Kingdom - Occupational Exposure Limits	
Local name	Titanium dioxide
WEL TWA (OEL TWA)	10 mg/m³(total inhalable) 4 mg/m³(respirable)
WEL STEL (OEL STEL)	30 mg/m³(calculated-total inhalable) 12 mg/m³(calculated-respirable)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Carbon black (1333-86-4)	
Belgium - Occupational Exposure Limits	
Local name	Carbone (noir de) # Koolzwart
OEL TWA	3 mg/m³
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Croatia - Occupational Exposure Limits	
Local name	Ugljik-crni
GVI (OEL TWA)	3.5 mg/m³
KGVI (OEL STEL)	7 mg/m³
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
Czech Republic - Occupational Exposure Limits	
Local name	Amorfníuhlík (Carbon Black)
PEL (OEL TWA)	10 mg/m³
Remark	Prachy s převážně nespecifickým účinkem.
Regulatory reference	Nařízení vlády č . 361/2007 Sb. (Předpis 195/2021 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Carbon black
OEL TWA	3.5 mg/m³
OEL STEL	7 mg/m³
Remark	K (betyder, at stoffet anses for at kunne væ re kræftfremkaldende)
Regulatory reference	BEK nr 202 af 21/02/2023
Estonia - Occupational Exposure Limits	
OEL TWA	3 mg/m³
Finland - Occupational Exposure Limits	
Local name	Nokimusta
HTP (OEL TWA)	3.5 mg/m³
HTP (OEL STEL)	7 mg/m³
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Noir de carbone
VME (OEL TWA)	3.5 mg/m³
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 6443, 2022; Outil65)

Carbon black (1333-86-4)	
Greece - Occupational Exposure Limits	
Local name	Αιθάλη
OEL TWA	3.5 mg/m³
OEL STEL	7 mg/m³
Regulatory reference	Π .Δ . 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	Ipari korom [„Carbon Black”]
AK (OEL TWA)	3 mg/m³ belélegezhető koncentráció
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Carbon black
OEL TWA	3 mg/m³I (Inhalable Fraction)
OEL STEL	15 mg/m³(calculated-inhalable fraction)
Regulatory reference	Chemical Agents Code of Practice 2021
Poland - Occupational Exposure Limits	
Local name	Sadza techniczna
NDS (OEL TWA)	4 mg/m³frakcja wdychalna
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia.
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Carbono, preto (Negro de fumo)
OEL TWA	3 mg/m³I (Fraçao inalável)
OEL chemical category	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Remark	A3 (Agente carcinogénico confirmado nos animais de laboratorio con relevância desconhecida no Homem)
Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA)	2 mg/m³(respirable fraction, 5% or less fibrogenic component) 10 mg/m³(respirable fraction, greater than 5% fibrogenic component) 10 mg/m³(total aerosol)
Spain - Occupational Exposure Limits	
Local name	Negro de humo
VLA-ED (OEL TWA)	3.5 mg/m³
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	3 mg/m³(inhalable fraction)
United Kingdom - Occupational Exposure Limits	
Local name	Carbon black
WEL TWA (OEL TWA)	3.5 mg/m³
WEL STEL (OEL STEL)	7 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Personal protection equipment

Eye and face protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Skin and body protection:

Impervious clothing and chemical resistant gloves

Respiratory protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

General hygienic measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Colour	Grey
Odour	Not determined or not available.
Odour threshold	Not determined or not available.
Melting point	Not determined or not available.
Freezing point	Not determined or not available.
Boiling point	Not determined or not available.
Flammability	Non flammable.
Lower explosion limit	Not determined or not available.
Upper explosion limit	Not determined or not available.
Flash point	Not determined or not available.
Auto-ignition temperature	Not determined or not available.
Decomposition temperature	Not determined or not available.
pH	Not determined or not available.
Viscosity, kinematic	Not determined or not available.
Solubility	Not determined or not available.
Partition coefficient n-octanol/water	Not determined or not available.
Vapour pressure	Not determined or not available.
Vapour pressure at 50°C	Not determined or not available.
Density	Not determined or not available.
Relative density	Not determined or not available.
Relative vapour density at 20°C	Not determined or not available.
Particle characteristics	Not determined or not available.

9.2 Other information

9.2.1 Information with regard to physical hazard classes
No data available/Not applicable

9.2.2. Other safety characteristics
No additional information available

SECTION 10: Stability and reactivity

10.1 Reactivity:
Not reactive under recommended handling and storage conditions.

10.2 Chemical stability:
Stable under recommended handling and storage conditions.

10.3 Possibility of hazardous reactions:
Hazardous reactions are not anticipated under recommended conditions of handling and storage. Stable under recommended handling and storage conditions.

10.4 Conditions to avoid:
None under recommended storage and handling conditions (see section 7).

10.5 Incompatible materials:
No additional information available

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

SECTION 11: Toxicological information

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

Morpholine, 4-(1-oxo-2-propenyl)- (5117-12-4)	
LD50 dermal rat	> 2000 mg/kg (Source: ECHA_API)
ATE CLP (oral)	500 mg/kg bodyweight
Titanium dioxide (13463-67-7)	
LD50 oral rat	> 10000 mg/kg (Source: IUCLID)
LD50 oral	> 5000 mg/kg bodyweight
LD50 dermal	> 10000 mg/kg bodyweight
LC50 Inhalation - Rat	5.09 mg/l/4h
Carbon black (1333-86-4)	
LD50 oral rat	> 15400 mg/kg (Source: NLM_CIP)

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye damage.
Respiratory or skin sensitisation: May cause an allergic skin reaction.
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified

Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans
Carbon black (1333-86-4)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity: Not classified.
STOT-single exposure: May cause respiratory irritation.
STOT-repeated exposure: May cause damage to organs through prolonged or repeated exposure.

Morpholine, 4-(1-oxo-2-propenyl)- (5117-12-4)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: Not classified.

11.2 Information on other hazards

Endocrine disrupting properties: No data available.

Other information: No data available.

SECTION 12: Ecological information

12.1 Toxicity

Hazardous to the aquatic environment, short–term (acute): Not classified.

Hazardous to the aquatic environment, long–term (chronic): Not classified.

Titanium dioxide (13463-67-7)	
LC50 - Fish [1]	155 mg/l Test organisms (species): other:Japanese Medaka
EC50 - Other aquatic organisms [1]	> 100 mg/l Test organisms (species):
EC50 - Other aquatic organisms [2]	> 10000 mg/l
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
Carbon black (1333-86-4)	
EC50 72h - Algae [1]	> 10000 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	> 10000 mg/l Test organisms (species):
ErC50 algae	> 10000 mg/l 72 hours OECD 201

12.2 Persistence and degradability

Product data: No data available.

Morpholine, 4-(1-oxo-2-propenyl)- (5117-12-4)	
Persistence and degradability	Not Rapidly degradable.

12.3 Bioaccumulative potential

Product data: No data available.

Morpholine, 4-(1-oxo-2-propenyl)- (5117-12-4)	
Partition coefficient n-octanol/water (Log Pow)	-0.46 (at 21 °C)

12.4 Mobility in soil

Product data: No data available.

12.5 Results of PBT and vPvB assessment

Product data:

PBT assessment: This product does not contain any substances that are assessed to be a PBT.

vPvB assessment: This product does not contain any substances that are assessed to be a vPvB.

12.6 Endocrine disrupting properties

Substance data: No data available.

12.7 Other adverse effects:

Additional information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal:

Dispose contaminated packages in a safe manner in accordance with local and national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

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

14.1 UN number or ID number: Not regulated for transport.

ADR	IMDG	IATA	ADN	RID
UN number or ID number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

14.2 Special precautions for user

Overland transport: Not regulated.

Transport by sea: Not regulated.

Air transport: Not regulated

Inland waterway transport: Not regulated

Rail transport: Not regulated

14.3 Maritime transport in bulk according to IMO instruments: Not applicable.

SECTION 15: Regulatory information

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

European regulations

REACH Annex XVII (Restriction List):

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions).

REACH Annex XIV (Authorisation List):

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

REACH Candidate List (SVHC):

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

PIC Regulation (Prior Informed Consent):

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

POP Regulation (Persistent Organic Pollutants):

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

Ozone Regulation (1005/2009):

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

Dual-Use Regulation (428/2009):

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

Explosives Precursors Regulation (2019/1148):

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

Drug Precursors Regulation (273/2004):

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

National regulations

Germany

Employment restrictions: Observe restrictions according Act on the Protection of Working Mothers (MuSchG). Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).
Water hazard class (WGK): WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1).
Hazardous Incident Ordinance (12. BImSchV): Is not subject of the Hazardous Incident Ordinance (12. BImSchV).

Netherlands

SZW-lijst van kankerverwekkende stoffen: None of the components are listed.
SZW-lijst van mutagene stoffen: None of the components are listed.
SZW-lijst van reprotoxische stoffen - Borstvoeding: None of the components are listed.
SZW-lijst van reprotoxische stoffen - Vruchtbaarheid: None of the components are listed.
SZW-lijst van reprotoxische stoffen - Ontwikkeling: None of the components are listed.

Denmark

Danish National Regulations: Young people under 18 years are not allowed to use the product. Pregnant/breastfeeding women working with the product must not be in direct contact with it.

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Effective concentration for 50 percent of test population (median effective concentration)
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal concentration for 50 percent of test population (median lethal concentration)
LD50	Lethal dose for 50 percent of test population (median lethal dose)
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulation concerning the International Carriage of Dangerous Goods by Railways
SDS	Safety Data Sheet
STP	Sewage treatment plant

Abbreviations and acronyms:	
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1B	Skin sensitisation, category 1B
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

Disclaimer:

This product has been classified in accordance with REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

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End of Safety Data Sheet