ISOPON BPO HARDENER

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Product Reference code:according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
SDS Ref. (EU): RBPO-R-SDS
Issue date: 20/04/2015 Revision date: 13/07/2020 Supersedes version of: 14/10/2019 Version: 8.0

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

1.1. Product identifier

Product form	:	Mixture
Trade name	:	ISOPON BPO HARDENER
UFI	:	S800-U0RP-S00A-1V0W
Type of product	:	Hardener
Product group	:	Organic peroxide
Other means of identification	:	Component of: P38/1, P38/S, P40/1, P40/S, P38/KIT, P38/PBX, P38/CART, P40/PBX, PBF/PBX, PBF/KIT, GL/SM/D, GL/LA/D, BRKIT, MET/S, PBF/250, ALWH/KIT, ALWH/PBX

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

1.2.1. Relevant identified uses

Intended for general public

Main use category	:	Industrial use,Professional use
Use of the substance/mixture	:	Fillers, putties, plasters, modelling clay
Function or use category	:	Hardener (Crosslinker)

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier
U-POL Limited
Denington Road
NN8 2QH Wellingborough - United Kingdom
T +44 (0) 1933 230310
technicalsupport@u-pol.com - www.u-pol.com

Importer
U-POL Netherlands B.V.
Hoorgoorddreef 15
1101BA Amsterdam - Netherlands
T +31 20 240 2216
technicalsupport@u-pol.com - www.u-pol.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: +44 (0) 870 8200418 (24 hrs)

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	NHS England, Scotland & Wales	-	Call 111 or a Doctor	In Northern Ireland, contact your local GP or pharmacist during normal hours (www.gpoutofhours.hscni.net)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Organic Peroxides, Type E	H242
Serious eye damage/eye irritation, Category 2	H319

Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Heating may cause a fire. May cause an allergic skin reaction. Causes serious eye irritation. Very toxic to aquatic life.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS02 GHS07 GHS09

Signal word (CLP) : Warning

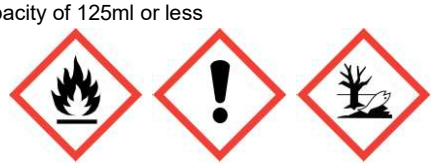
Contains : dibenzoyl peroxide; benzoyl peroxide

Hazard statements (CLP) : H242 - Heating may cause a fire.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) : P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P234 - Keep only in original packaging.
P280 - Wear eye protection, protective clothing, protective gloves.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P391 - Collect spillage.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Labelling according to: exemption for packages of a capacity of 125ml or less

Hazard pictograms (CLP) :



GHS02 GHS07 GHS09

Signal word (CLP) : Warning

Hazardous ingredients : dibenzoyl peroxide; benzoyl peroxide

Hazard statements (CLP) : H317 - May cause an allergic skin reaction.

Precautionary statements (CLP) : P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P280 - Wear eye protection, protective clothing, protective gloves.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Component	
ethanediol; ethylene glycol (107-21-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
dibenzoyl peroxide; benzoyl peroxide	(CAS-No.) 94-36-0 (EC-No.) 202-327-6 (EC Index-No.) 617-008-00-0 (REACH-no) 01-2119511472-50	25 – 75	Org. Perox. B, H241 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
ethanediol; ethylene glycol substance with a Community workplace exposure limit	(CAS-No.) 107-21-1 (EC-No.) 203-473-3 (EC Index-No.) 603-027-00-1 (REACH-no) 01-2119456816-28	0.1 – 10	Acute Tox. 4 (Oral), H302

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash with plenty of water. If skin irritation or rash occurs: Wash with plenty of water. Get medical advice/attention. Wash contaminated clothing before reuse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Get medical advice/attention. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation : May cause an allergic skin reaction.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye irritation. Eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Heating may cause a fire.
Hazardous decomposition products in case of fire : Carbon monoxide. Carbon dioxide. Benzene.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Protective clothing. Gloves.
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Avoid breathing fume, vapours.

6.1.2. For emergency responders

Protective equipment : 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".
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Do not allow to dry.
Methods for cleaning up : Mechanically recover the product. On land, sweep or shovel into suitable containers. Minimise generation of dust. Store away from other materials. Notify authorities if product enters sewers or public waters.
Other information : Ensure adequate ventilation. Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing fume, vapours. Take precautions against electrostatic charges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Avoid contact with skin and eyes.
Hygiene measures : Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Ignition sources, Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking, Heat sources, Keep only in original container. Keep container closed when not in use. Store away from other materials. Protect from sunlight. Keep only in original container. Keep cool. Store in a well-ventilated place.
Incompatible products	:	Keep away from reducing agents/(strong) acids /(strong) bases and metals.
Incompatible materials	:	Sources of ignition. Direct sunlight. combustible materials.
Storage temperature	:	5 – 25 °C (reccomended)
Storage area	:	Store in a well-ventilated place.
Special rules on packaging	:	Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

ISOPON BPO HARDENER	
United Kingdom - Occupational Exposure Limits	
Local name	Dibenzoyl peroxide
WEL TWA (OEL TWA) [1]	5 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

ethanediol; ethylene glycol (107-21-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Ethylene glycol
IOEL TWA	52 mg/m³
IOEL TWA [ppm]	20 ppm
IOEL STEL	104 mg/m³
IOEL STEL [ppm]	40 ppm
Notes	Skin
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Ireland - Occupational Exposure Limits	
Local name	Ethane-1,2-diol [Ethylene glycol]
OEL TWA [1]	10 mg/m³ particulate 52 mg/m³ vapour
OEL TWA [2]	20 ppm vapour
OEL STEL	104 mg/m³ vapour
OEL STEL [ppm]	40 ppm vapour
Notes (IE)	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body), IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2020
United Kingdom - Occupational Exposure Limits	
Local name	Ethane-1,2-diol

ethanediol; ethylene glycol (107-21-1)	
WEL TWA (OEL TWA) [1]	10 mg/m³ 52 mg/m³
WEL TWA (OEL TWA) [2]	20 ppm
WEL STEL (OEL STEL)	104 mg/m³
WEL STEL (OEL STEL) [ppm]	40 ppm
Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

dibenzoyl peroxide; benzoyl peroxide (94-36-0)	
Ireland - Occupational Exposure Limits	
Local name	Dibenzoyl peroxide [Benzoyl peroxide]
OEL TWA [1]	5 mg/m³
Notes (IE)	Sens. (In the workplace respiratory or dermal exposures to sensitising agents may occur. Sensitizers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The notation does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitizers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of personal protective equipment (PPE))
Regulatory reference	Chemical Agents Code of Practice 2020
United Kingdom - Occupational Exposure Limits	
Local name	Dibenzoyl peroxide
WEL TWA (OEL TWA) [1]	5 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Exposure limit values for the other components

dimethyl phthalate (131-11-3)		
Ireland - Occupational Exposure Limits		
Local name	Dimethyl phthalate	
OEL TWA [1]	5 mg/m³	
OEL STEL	10 mg/m³	
Regulatory reference	Chemical Agents Code of Practice 2020	
United Kingdom - Occupational Exposure Limits		
Local name	Dimethyl phthalate	
WEL TWA (OEL TWA) [1]	5 mg/m³	
WEL STEL (OEL STEL)	10 mg/m³	
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE	

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

ISOPON BPO HARDENER	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	13.3 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	39 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	2 mg/kg bodyweight
PNEC (Water)	
PNEC aqua (freshwater)	0.00002 mg/l
PNEC aqua (marine water)	0.000002 mg/l
PNEC aqua (intermittent, freshwater)	0.000602 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.0127 mg/kg dwt
PNEC sediment (marine water)	0.00127 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.0025 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.35 mg/l

ethanediol; ethylene glycol (107-21-1)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	106 mg/kg bodyweight/day
Long-term - local effects, inhalation	35 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects, dermal	53 mg/kg bodyweight/day
Long-term - local effects, inhalation	7 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	10 mg/l
PNEC aqua (marine water)	1 mg/l
PNEC aqua (intermittent, freshwater)	10 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	37 mg/kg dwt
PNEC sediment (marine water)	3.7 mg/kg dwt
PNEC (Soil)	
PNEC soil	1.53 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	199.5 mg/l

dibenzoyl peroxide; benzoyl peroxide (94-36-0)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	6.6 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	11.75 mg/m³

DNEL/DMEL (General population)	
Long-term - systemic effects,oral	1.65 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	2.9 mg/m³
Long-term - systemic effects, dermal	3.3 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.602 µg/l
PNEC aqua (marine water)	0.0602 µg/l
PNEC aqua (intermittent, freshwater)	0.602 µg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.338 mg/kg dwt
PNEC sediment (marine water)	0.0338 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.0758 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	6.67 mg/kg food
PNEC (STP)	
PNEC sewage treatment plant	0.35 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:
Avoid all unnecessary exposure. Gloves. Protective clothing. Safety glasses.
Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Chemical goggles or safety glasses. Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Wear protective gloves.

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Protective gloves	Neoprene rubber (HNBR), Nitrile rubber (NBR)	2 (> 30 minutes)	≥0.14mm		EN 374-3

Other skin protection
Materials for protective clothing:
Impermeable clothing

8.2.2.3. Respiratory protection

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

8.2.2.4. Thermal hazards
No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	red. white. Blue.
Appearance	:	Paste.
Odour	:	characteristic.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not applicable
Boiling point	:	Not available
Flammability	:	May cause fire,Non flammable,Heating may cause a fire.
Explosive limits	:	Not applicable
Lower explosive limit (LEL)	:	Not applicable
Upper explosive limit (UEL)	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	Not available
SADT	:	50 °C
pH	:	Not available
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable
Solubility	:	insoluble in water.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50 °C	:	Not available
Density	:	1.1 g/cm³
Relative density	:	Not applicable
Relative vapour density at 20 °C	:	Not applicable
Particle size	:	Not available
Particle size distribution	:	Not available
Particle shape	:	Not available
Particle aspect ratio	:	Not available
Particle aggregation state	:	Not available

Particle agglomeration state : Not available
Particle specific surface area : Not available
Particle dustiness : Not available

9.2. Other information

VOC content : 0 g/l

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

VOC content : 0 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

Heating may cause a fire.

10.2. Chemical stability

Heating may cause a fire. SADT.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases. Combustible materials.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Benzene.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

dimethyl phthalate (131-11-3)	
LD50 oral rat	8200 mg/kg bodyweight Animal: rat
LD50 dermal rabbit	> 12000 mg/kg bodyweight Animal: rabbit
LC50 Inhalation - Rat	> 10.4 mg/l (6 h, Rat, Experimental value, Inhalation (vapours))

ethanediol; ethylene glycol (107-21-1)	
LD50 oral rat	7712 mg/kg bodyweight Animal: rat
LD50 dermal	> 3500 mg/kg bodyweight (Mouse, Male / female, Experimental value, Dermal)
LC50 Inhalation - Rat	> 2.5 mg/l (6 h, Rat, Male / female, Experimental value, Inhalation (aerosol))

dibenzoyl peroxide; benzoyl peroxide (94-36-0)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Animal sex: male

Skin corrosion/irritation : Not classified
Additional information : Based on available data, the classification criteria are not met
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Additional information : Based on available data, the classification criteria are not met
Carcinogenicity : Not classified
Additional information : Based on available data, the classification criteria are not met

dibenzoyl peroxide; benzoyl peroxide (94-36-0)	
IARC group	3 - Not classifiable

ethanediol; ethylene glycol (107-21-1)	
NOAEL (chronic, oral, animal/male, 2 years)	1500 mg/kg bodyweight Animal: mouse, Animal sex: male, Remarks on results: other:Effect type: carcinogenicity (migrated information)

Reproductive toxicity : Not classified
Additional information : Based on available data, the classification criteria are not met

STOT-single exposure : Not classified
Additional information : Based on available data, the classification criteria are not met

STOT-repeated exposure : Not classified
Additional information : Based on available data, the classification criteria are not met

dimethyl phthalate (131-11-3)	
NOAEL (oral, rat, 90 days)	770 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard : Not classified
Additional information : Based on available data, the classification criteria are not met

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

11.2.2 Other information

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life.
Ecology - water : Very toxic to aquatic life.
Hazardous to the aquatic environment, short-term (acute) : Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic) : Very toxic to aquatic life with long lasting effects.

ethanediol; ethylene glycol (107-21-1)	
LC50 - Fish [1]	72860 mg/l Test organisms (species): Pimephales promelas

EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 96h - Algae [1]	3536 mg/l Test organisms (species): other:grenn algae
EC50 96h - Algae [2]	6500 – 13000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	≥ 1000 mg/l Test organisms (species): Americamysis bahia (previous name: Mysidopsis bahia) Duration: '23 d'

dibenzoyl peroxide; benzoyl peroxide (94-36-0)	
LC50 - Fish [1]	0.0602 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	0.11 mg/l Test organisms (species): Daphnia magna

12.2. Persistence and degradability

ISOPON BPO HARDENER	
Persistence and degradability	Not established.

ethanediol; ethylene glycol (107-21-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.47 g O_2/g substance
Chemical oxygen demand (COD)	1.24 g O_2/g substance
ThOD	1.29 g O_2/g substance
BOD (% of ThOD)	0.36

12.3. Bioaccumulative potential

ISOPON BPO HARDENER	
Bioaccumulative potential	Not established.

ethanediol; ethylene glycol (107-21-1)	
BCF - Fish [1]	10 (72 h, Leuciscus idus)
BCF - Other aquatic organisms [1]	0.21 – 0.6 (Procambarus sp., Chronic)
BCF - Other aquatic organisms [2]	190 (24 h, Algae)
Partition coefficient n-octanol/water (Log Pow)	-1.34 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

ethanediol; ethylene glycol (107-21-1)	
Surface tension	48 mN/m (20 °C)
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Results of PBT and vPvB assessment

Component	
ethanediol; ethylene glycol (107-21-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

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

14.1. UN number or ID number

UN-No. (ADR) : UN 3108
UN-No. (IMDG) : UN 3108
UN-No. (IATA) : UN 3108
UN-No. (ADN) : UN 3108
UN-No. (RID) : UN 3108

14.2. UN proper shipping name

Proper Shipping Name (ADR) : ORGANIC PEROXIDE TYPE E, SOLID
Proper Shipping Name (IMDG) : ORGANIC PEROXIDE TYPE E, SOLID
Proper Shipping Name (IATA) : Organic peroxide type e, solid
Proper Shipping Name (ADN) : ORGANIC PEROXIDE TYPE E, SOLID
Proper Shipping Name (RID) : ORGANIC PEROXIDE TYPE E, SOLID
Transport document description (ADR) : UN 3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2, (D), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG) : UN 3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA) : UN 3108 Organic peroxide type e, solid, 5.2, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN) : UN 3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID) : UN 3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 5.2
Danger labels (ADR) : 5.2

:

IMDG

Transport hazard class(es) (IMDG) : 5.2
Danger labels (IMDG) : 5.2

: 

IATA

Transport hazard class(es) (IATA) : 5.2

Danger labels (IATA) : 5.2

: 

ADN

Transport hazard class(es) (ADN) : 5.2

Danger labels (ADN) : 5.2

: 

RID

Transport hazard class(es) (RID) : 5.2

Danger labels (RID) : 5.2

: 

14.4. Packing group

Packing group (ADR) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

Packing group (ADN) : Not applicable

Packing group (RID) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : Yes

Marine pollutant : Yes

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : P1

Special provisions (ADR) : 122, 274

Limited quantities (ADR) : 500g

Excepted quantities (ADR) : E0

Packing instructions (ADR) : P520

Mixed packing provisions (ADR) : MP4

Transport category (ADR) : 2

Special provisions for carriage - Packages (ADR) : V1

Special provisions for carriage - Loading, unloading and handling (ADR) : CV15, CV22, CV24

Tunnel restriction code (ADR) : D

EAC code : 1W

Transport by sea

Special provisions (IMDG) : 122, 274

Packing instructions (IMDG) : P520

EmS-No. (Fire)	:	F-J
EmS-No. (Spillage)	:	S-R
Stowage category (IMDG)	:	D
Stowage and handling (IMDG)	:	SW1
Segregation (IMDG)	:	SG35, SG36
Properties and observations (IMDG)	:	Decomposes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.

Air transport

PCA Excepted quantities (IATA)	:	E0
PCA Limited quantities (IATA)	:	Forbidden
PCA limited quantity max net quantity (IATA)	:	Forbidden
PCA packing instructions (IATA)	:	570
PCA max net quantity (IATA)	:	10kg
CAO packing instructions (IATA)	:	570
CAO max net quantity (IATA)	:	25kg
Special provisions (IATA)	:	A20
ERG code (IATA)	:	5L

Inland waterway transport

Classification code (ADN)	:	P1
Special provisions (ADN)	:	122, 274
Limited quantities (ADN)	:	500 g
Excepted quantities (ADN)	:	E0
Equipment required (ADN)	:	PP, EX, A
Ventilation (ADN)	:	VE01
Number of blue cones/lights (ADN)	:	0

Rail transport

Classification code (RID)	:	P1
Special provisions (RID)	:	122, 274
Limited quantities (RID)	:	500g
Excepted quantities (RID)	:	E0
Packing instructions (RID)	:	P520
Mixed packing provisions (RID)	:	MP4
Transport category (RID)	:	2
Special provisions for carriage – Packages (RID)	:	W7
Special provisions for carriage - Loading, unloading and handling (RID)	:	CW22, CW24, CW29
Colis express (express parcels) (RID)	:	CE10
Hazard identification number (RID)	:	539

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:		
Reference code	Applicable on	Entry title or description
3(b)	ethylene glycol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10

Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances
Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.
Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 0 g/l

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Other information : None.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Org. Perox. B	Organic Peroxides, Type B
Org. Perox. E	Organic Peroxides, Type E
Skin Sens. 1	Skin sensitisation, Category 1
H241	Heating may cause a fire or explosion.
H242	Heating may cause a fire.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

For professional use only.

The information contained within this Safety Data Sheet (SDS) is believed to be correct as of the date issued however it is subject to change from time to time. It does not purport to be all inclusive or exhaustive and shall only be used as a guide. U-POL makes no warranties, expressed or implied, including but not limited to, any implied warranty of fitness for a given purpose or usage. It is the Buyers responsibility to ensure the suitability of the products for their own use and to check the information is up to date. U-POL cannot be held responsible for the suitability of use for any of its products, considering the wide range of factors such as application, substrates and handling methods. Since these conditions of use are outside of our control, the company shall not be held liable for any damage resulting from handling or from contact with the product detailed. Moreover, addition of reducers, hardeners or other additives over and above U-POL's recommendations for use, may substantially alter the composition and hazards of the product. U-POL data sheets are available via the U-POL website at WWW.U-POL.COM.

ISOPON FASTGLAS RESIN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Product Reference code:according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
SDS Ref. (EU): FASTGLAS-R-SDS
Issue date: 27/06/2016 Revision date: 31/08/2020 Supersedes version of: 20/08/2019 Version: 6.0

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

1.1. Product identifier

Product form	:	Mixture
Trade name	:	ISOPON FASTGLAS RESIN
UFI	:	XKR0-H0GP-200X-YQHF
Product code	:	RE/SM, RE/LA, RE/XL
Product group	:	Unsaturated polyester
Other means of identification	:	Component of: GL/LA/D, GL/SM/D

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

1.2.1. Relevant identified uses

Intended for general public

Main use category	:	Industrial use,Professional use,Consumer use
Use of the substance/mixture	:	Fillers, putties, plasters, modelling clay
Function or use category	:	Fillers

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier
U-POL Limited
Denington Road
NN8 2QH Wellingborough - United Kingdom
T +44 (0) 1933 230310
technicalsupport@u-pol.com - www.u-pol.com

Importer
U-POL Netherlands B.V.
Hoorgoorddreef 15
1101BA Amsterdam - Netherlands
T +31 20 240 2216
technicalsupport@u-pol.com - www.u-pol.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: +44 (0) 870 8200418 (24 hrs)

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	NHS England, Scotland & Wales	-	Call 111 or a Doctor	In Northern Ireland, contact your local GP or pharmacist during normal hours (www.gpoutofhours.hscni.net)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 3	H226
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319

Reproductive toxicity, Category 2	H361
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity — Repeated exposure, Category 1	H372
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. May cause respiratory irritation. Causes skin irritation. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS02 GHS07 GHS08

Signal word (CLP) : Danger

Contains : styrene

Hazard statements (CLP) : H226 - Flammable liquid and vapour.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H361 - Suspected of damaging fertility or the unborn child.
H372 - Causes damage to organs (hearing organs) through prolonged or repeated exposure (Inhalation).
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP) : P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 - Avoid breathing vapours, spray, fume.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear eye protection, protective clothing, protective gloves.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

EUH-statements : EUH208 - Contains phthalic anhydride. May produce an allergic reaction.

2.3. Other hazards

Component	
styrene (100-42-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
phthalic anhydride (85-44-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
styrene (Note D)	(CAS-No.) 100-42-5 (EC-No.) 202-851-5 (EC Index-No.) 601-026-00-0 (REACH-no) 01-2119457861-32	25 – 50	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT SE 3, H335 STOT RE 1, H372 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
phthalic anhydride	(CAS-No.) 85-44-9 (EC-No.) 201-607-5 (EC Index-No.) 607-009-00-4 (REACH-no) 01-2119457017-41	0.1 – 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335

Note D : Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words 'non-stabilised'.
Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after skin contact : Irritation.

Symptoms/effects after eye contact : Eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Protective clothing. Gloves.
Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe vapours, spray, fume. Avoid contact with skin and eyes.

6.1.2. For emergency responders

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

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable containers. Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe spray, vapours, fume. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Incompatible products : Oxidizing agent.
Storage temperature : < 25 °C
Storage area : Store in a well-ventilated place.
Special rules on packaging : Keep only in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

styrene (100-42-5)	
Ireland - Occupational Exposure Limits	
Local name	Styrene [Phenylethylene, Vinyl benzene]
OEL TWA [1]	85 mg/m³
OEL TWA [2]	20 ppm
OEL STEL	170 mg/m³
OEL STEL [ppm]	40 ppm
Regulatory reference	Chemical Agents Code of Practice 2020
Ireland - Biological limit values	
Local name	Propylene Oxide
BLV	3 Parameter: N-(3-hydroxypropyl) valine - Medium: blood haemoglobin
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
United Kingdom - Occupational Exposure Limits	
Local name	Styrene
WEL TWA (OEL TWA) [1]	430 mg/m³
WEL TWA (OEL TWA) [2]	100 ppm
WEL STEL (OEL STEL)	1080 mg/m³
WEL STEL (OEL STEL) [ppm]	250 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

phthalic anhydride (85-44-9)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Phtalic anhydride
Notes	Respiratory sensitizer; skin sensitizer. (Year of adoption 2010)
Regulatory reference	SCOEL Recommendations
Ireland - Occupational Exposure Limits	
Local name	Phthalic anhydride
OEL TWA [2]	1 ppm
OEL STEL	12 mg/m³
Notes (IE)	Sens. (In the workplace respiratory or dermal exposures to sensitising agents may occur. Sensitizers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The notation does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitizers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of personal protective equipment (PPE))
Regulatory reference	Chemical Agents Code of Practice 2020
United Kingdom - Occupational Exposure Limits	
Local name	Phthalic anhydride

phthalic anhydride (85-44-9)	
WEL TWA (OEL TWA) [1]	4 mg/m³
WEL STEL (OEL STEL)	12 mg/m³
Remark (WEL)	Sen (Capable of causing occupational asthma)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

styrene (100-42-5)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	289 mg/m³
Acute - local effects, inhalation	306 mg/m³
Long-term - systemic effects, dermal	406 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	85 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	174.25 mg/m³
Acute - local effects, inhalation	182.75 mg/m³
Long-term - systemic effects,oral	2.1 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	10.2 mg/m³
Long-term - systemic effects, dermal	343 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.028 mg/l
PNEC aqua (marine water)	0.014 mg/l
PNEC aqua (intermittent, freshwater)	0.04 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.614 mg/kg dwt
PNEC sediment (marine water)	0.307 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.2 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	5 mg/l

phthalic anhydride (85-44-9)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	10 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	32.2 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	8.6 mg/m³

Long-term - systemic effects, dermal	5 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	1 mg/l
PNEC aqua (marine water)	0.1 mg/l
PNEC aqua (intermittent, freshwater)	5.6 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	3.8 mg/kg dwt
PNEC sediment (marine water)	0.38 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.173 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

8.1.5. Control banding

No additional information available

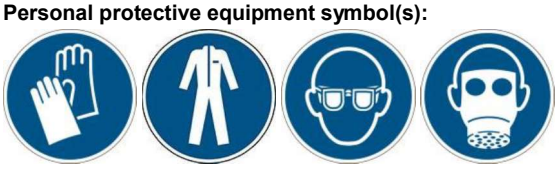
8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:
Gloves. Protective clothing. Safety glasses.
Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:
Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:					
Protective gloves					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Protective gloves	Nitrile rubber (NBR)	3 (> 60 minutes)	0.3		EN 374-3

Other skin protection **Materials for protective clothing:**
Impermeable clothing

8.2.2.3. Respiratory protection

Respiratory protection:			
[In case of inadequate ventilation] wear respiratory protection.			
Device	**Filter type**	**Condition**	**Standard**
Breathing apparatus	Type A - High-boiling (>65 °C) organic compounds		EN 14387

8.2.2.4. Thermal hazards
No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	dark yellow.
Appearance	:	Liquid.
Odour	:	characteristic.
Odour threshold	:	Not available
Melting point	:	-30 °C
Freezing point	:	Not available
Boiling point	:	145 °C
Flammability	:	Not applicable
Explosive limits	:	Not available
Lower explosive limit (LEL)	:	Not available
Upper explosive limit (UEL)	:	Not available
Flash point	:	31 °C
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	Not available
Viscosity, kinematic	:	477 – 624 mm²/s
Viscosity, dynamic	:	≈ 600 (520 – 680) mPa·s
Solubility	:	Insoluble in water. Soluble in aromatic hydrocarbons.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	6 hPa
Vapour pressure at 50 °C	:	Not available
Density	:	1.09 g/cm³
Relative density	:	Not available
Relative vapour density at 20 °C	:	3.6
Particle size	:	Not applicable
Particle size distribution	:	Not applicable
Particle shape	:	Not applicable
Particle aspect ratio	:	Not applicable
Particle aggregation state	:	Not applicable
Particle agglomeration state	:	Not applicable
Particle specific surface area	:	Not applicable
Particle dustiness	:	Not applicable

9.2. Other information

VOC content : 345 g/l

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

VOC content : 345 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

styrene (100-42-5)	
LD50 oral	> 6000 mg/kg bodyweight Animal: hamster, Syrian, Animal sex: male
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	11.8 mg/l (4 h, Rat, Inconclusive, insufficient data, Inhalation (vapours))

phthalic anhydride (85-44-9)	
LD50 oral rat	1530 mg/kg bodyweight Animal: rat, Animal sex: male
LD50 dermal rabbit	> 3160 mg/kg (Rabbit, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 2.14 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

1,4-naphthoquinone (130-15-4)	
LD50 oral rat	190 mg/kg bodyweight (Rat, Literature study, Oral)
LD50 dermal rat	202 mg/kg
LC50 Inhalation - Rat (Vapours)	0.046 mg/l/4h

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

styrene (100-42-5)	
IARC group	2B - Possibly carcinogenic to humans

phthalic anhydride (85-44-9)	
NOAEL (chronic, oral, animal/male, 2 years)	3570 mg/kg bodyweight Animal: mouse, Animal sex: male, Remarks on results: other:Effect type: carcinogenicity (migrated information)
NOAEL (chronic, oral, animal/female, 2 years)	1785 mg/kg bodyweight Animal: mouse, Animal sex: female, Remarks on results: other:Effect type: carcinogenicity (migrated information)

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

phthalic anhydride (85-44-9)	
NOAEL (animal/male, F0/P)	3570 mg/kg bodyweight Animal: mouse, Animal sex: male, Remarks on results: other:Generation: all major orans incl. reproductive organs were examined (migrated information)
NOAEL (animal/female, F0/P)	1785 mg/kg bodyweight Animal: mouse, Animal sex: female, Remarks on results: other:Generation: all major orans incl. reproductive organs were examined (migrated information)

STOT-single exposure : May cause respiratory irritation.

styrene (100-42-5)	
STOT-single exposure	May cause respiratory irritation.

phthalic anhydride (85-44-9)	
STOT-single exposure	May cause respiratory irritation.

1,4-naphthoquinone (130-15-4)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Causes damage to organs (hearing organs) through prolonged or repeated exposure (Inhalation).

styrene (100-42-5)	
LOAEL (oral, rat, 90 days)	2000 mg/kg bodyweight Animal: rat
LOAEC (inhalation, rat, vapour, 90 days)	0.21 mg/l air Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat
NOAEL (subchronic, oral, animal/male, 90 days)	10 mg/kg bodyweight Animal: mouse, Animal sex: male
STOT-repeated exposure	Causes damage to organs (hearing sense) through prolonged or repeated exposure (if inhaled).

phthalic anhydride (85-44-9)	
LOAEL (oral, rat, 90 days)	2500 mg/kg bodyweight Animal: rat, Animal sex: male

Aspiration hazard : Not classified

ISOPON FASTGLAS RESIN	
Viscosity, kinematic	477 – 624 mm²/s

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.

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

Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

styrene (100-42-5)	
LC50 - Fish [1]	10 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	4.7 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	4.9 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	6.3 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	4.9 mg/l (EPA OTS 797.1050, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
LOEC (chronic)	2.06 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	1.01 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

phthalic anhydride (85-44-9)	
LC50 - Fish [1]	560 mg/l (OECD 210: Fish, Early-Life Stage Toxicity Test, 7 day(s), Danio rerio, Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	> 640 mg/l Test organisms (species): Daphnia magna
NOEC (chronic)	16 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	10 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '60 d'

12.2. Persistence and degradability

styrene (100-42-5)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Chemical oxygen demand (COD)	2.8 g O_2/g substance
ThOD	3.07 g O_2/g substance
BOD (% of ThOD)	0.42 (Literature study)

phthalic anhydride (85-44-9)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.26 g O_2/g substance
ThOD	1.51 g O_2/g substance

12.3. Bioaccumulative potential

styrene (100-42-5)	
BCF - Fish [1]	35.5 (Carassius auratus, Literature study)
Partition coefficient n-octanol/water (Log Pow)	2.96 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

phthalic anhydride (85-44-9)	
BCF - Other aquatic organisms [1]	3.4 (EPIWIN BCF (v 2.15), Calculated value)
Partition coefficient n-octanol/water (Log Pow)	1.6 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

styrene (100-42-5)	
Surface tension	0.032 N/m (20 °C)
Partition coefficient n-octanol/water (Log Koc)	2.55 (log Koc, Estimated value)
Ecology - soil	Low potential for adsorption in soil.

phthalic anhydride (85-44-9)	
Partition coefficient n-octanol/water (Log Koc)	0.3 – 1.49 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

Component	
styrene (100-42-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
phthalic anhydride (85-44-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Flammable vapours may accumulate in the container.

SECTION 14: Transport information

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

14.1. UN number or ID number

UN-No. (ADR)	:	UN 1866
UN-No. (IMDG)	:	UN 1866
UN-No. (IATA)	:	UN 1866
UN-No. (ADN)	:	UN 1866
UN-No. (RID)	:	UN 1866

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	RESIN SOLUTION
Proper Shipping Name (IMDG)	:	RESIN SOLUTION
Proper Shipping Name (IATA)	:	Resin solution
Proper Shipping Name (ADN)	:	RESIN SOLUTION
Proper Shipping Name (RID)	:	RESIN SOLUTION
Transport document description (ADR)	:	UN 1866 RESIN SOLUTION, 3, III, (D/E)
Transport document description (IMDG)	:	UN 1866 RESIN SOLUTION, 3, III
Transport document description (IATA)	:	UN 1866 Resin solution, 3, III
Transport document description (ADN)	:	UN 1866 RESIN SOLUTION, 3, III
Transport document description (RID)	:	UN 1866 RESIN SOLUTION, 3, III

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	:	3
Danger labels (ADR)	:	3

:

IMDG

Transport hazard class(es) (IMDG)	:	3
Danger labels (IMDG)	:	3

:

IATA

Transport hazard class(es) (IATA)	:	3
Danger labels (IATA)	:	3

:

ADN

Transport hazard class(es) (ADN)	:	3
Danger labels (ADN)	:	3

:

RID

Transport hazard class(es) (RID)	:	3
Danger labels (RID)	:	3

:

14.4. Packing group

Packing group (ADR)	:	III
Packing group (IMDG)	:	III
Packing group (IATA)	:	III
Packing group (ADN)	:	III
Packing group (RID)	:	III

14.5. Environmental hazards

Dangerous for the environment	:	No
Marine pollutant	:	No
Other information	:	No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR)	:	F1
Special provisions (ADR)	:	640E
Limited quantities (ADR)	:	5l
Excepted quantities (ADR)	:	E1
Packing instructions (ADR)	:	P001, IBC03, LP01, R001
Special packing provisions (ADR)	:	PP1
Mixed packing provisions (ADR)	:	MP19
Portable tank and bulk container instructions (ADR)	:	T2
Portable tank and bulk container special provisions (ADR)	:	TP1
Tank code (ADR)	:	LGBF
Vehicle for tank carriage	:	FL
Transport category (ADR)	:	3
Special provisions for carriage - Packages (ADR)	:	V12
Special provisions for carriage - Operation (ADR)	:	S2
Hazard identification number (Kemler No.)	:	30
Orange plates	:	30 1866
Tunnel restriction code (ADR)	:	D/E
EAC code	:	•3YE

Transport by sea

Special provisions (IMDG)	:	223, 955
Limited quantities (IMDG)	:	5 L
Excepted quantities (IMDG)	:	E1
Packing instructions (IMDG)	:	P001, LP01
Special packing provisions (IMDG)	:	PP1
IBC packing instructions (IMDG)	:	IBC03
Tank instructions (IMDG)	:	T2
Tank special provisions (IMDG)	:	TP1
EmS-No. (Fire)	:	F-E
EmS-No. (Spillage)	:	S-E
Stowage category (IMDG)	:	A
Properties and observations (IMDG)	:	Miscibility with water depends upon the composition.

Air transport

PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Y344
PCA limited quantity max net quantity (IATA)	:	10L
PCA packing instructions (IATA)	:	355
PCA max net quantity (IATA)	:	60L

CAO packing instructions (IATA)	:	366
CAO max net quantity (IATA)	:	220L
Special provisions (IATA)	:	A3
ERG code (IATA)	:	3L

Inland waterway transport

Classification code (ADN)	:	F1
Special provisions (ADN)	:	640E
Limited quantities (ADN)	:	5 L
Excepted quantities (ADN)	:	E1
Equipment required (ADN)	:	PP, EX, A
Ventilation (ADN)	:	VE01
Number of blue cones/lights (ADN)	:	0

Rail transport

Classification code (RID)	:	F1
Special provisions (RID)	:	640E
Limited quantities (RID)	:	5L
Excepted quantities (RID)	:	E1
Packing instructions (RID)	:	P001, IBC03, LP01, R001
Special packing provisions (RID)	:	PP1
Mixed packing provisions (RID)	:	MP19
Portable tank and bulk container instructions (RID)	:	T2
Portable tank and bulk container special provisions (RID)	:	TP1
Tank codes for RID tanks (RID)	:	LGBF
Transport category (RID)	:	3
Special provisions for carriage – Packages (RID)	:	W12
Colis express (express parcels) (RID)	:	CE4
Hazard identification number (RID)	:	30

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

Reference code	Applicable on	Entry title or description
3(a)	ISOPON FASTGLAS RESIN ; styrene	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	ISOPON FASTGLAS RESIN ; styrene	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	ISOPON FASTGLAS RESIN ; styrene	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
40.	ISOPON FASTGLAS RESIN ; styrene	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.
Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 345 g/l

15.1.2. National regulations

No additional information available

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
BLV	Biological limit value
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Repr. 2	Reproductive toxicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
EUH208	Contains phthalic anhydride. May produce an allergic reaction.

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