OPERATIONAL INSTRUCTION

according to § 20 GefStoffV (Germany)

Gelcoat

Material number LRPOLO22-GC

Field of activity:

Hazard to man and environment

Danger

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
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.

Preventive measures and rules of conduct

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P312	Call a POISON CENTER/doctor if you feel unwell.
P403+P235	Store in a well-ventilated place. Keep cool.

Provide good ventilation and/or an exhaust system in the work area.

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

Field of activity:

Reaction in case of danger

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

Extinguishing media:
Foam, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

Accidental release measures:
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

First aid

General information:	If medical advice is needed, have product container or label at hand. Take off contaminated clothing and wash it before reuse.
In case of inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.
Following skin contact:	Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.
After swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

Appropriate disposal

Waste key number	07 02 04* other organic solvents, washing liquids and mother liquors * = Evidence for disposal must be provided.
Product:	Dispose of waste according to applicable legislation. Do not dispose of with household waste.
Contaminated packaging:	Dispose of waste according to applicable legislation. Handle empty containers with care. Incineration may cause explosion. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

OPERATIONAL INSTRUCTION

according to § 20 GefStoffV (Germany)

Isophthalic Polyester Resin

Material number LRPOLO22-ISO

Field of activity:

Hazard to man and environment

Danger

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
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.

Preventive measures and rules of conduct

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P312	Call a POISON CENTER/doctor if you feel unwell.
P403+P235	Store in a well-ventilated place. Keep cool.

Provide good ventilation and/or an exhaust system in the work area.

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

Field of activity:

Reaction in case of danger

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

Extinguishing media:
Foam, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

Accidental release measures:
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

First aid

General information:	If medical advice is needed, have product container or label at hand. Take off contaminated clothing and wash it before reuse.
In case of inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.
Following skin contact:	Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.
After swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

Appropriate disposal

Waste key number	07 02 04* other organic solvents, washing liquids and mother liquors * = Evidence for disposal must be provided.
Product:	Dispose of waste according to applicable legislation. Do not dispose of with household waste.
Contaminated packaging:	Dispose of waste according to applicable legislation. Handle empty containers with care. Incineration may cause explosion. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

OPERATIONAL INSTRUCTION

according to § 20 GefStoffV (Germany)

Orthophthalic Polyester Resin

Material number LRPOLO22-O

Field of activity:

Hazard to man and environment

Danger

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
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.

Preventive measures and rules of conduct

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P312	Call a POISON CENTER/doctor if you feel unwell.
P403+P235	Store in a well-ventilated place. Keep cool.

Provide good ventilation and/or an exhaust system in the work area.

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

Field of activity:

Reaction in case of danger

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

Extinguishing media:
Foam, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

Accidental release measures:
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

First aid

General information:	If medical advice is needed, have product container or label at hand. Take off contaminated clothing and wash it before reuse.
In case of inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.
Following skin contact:	Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.
After swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

Appropriate disposal

Waste key number	07 02 04* other organic solvents, washing liquids and mother liquors * = Evidence for disposal must be provided.
Product:	Dispose of waste according to applicable legislation. Do not dispose of with household waste.
Contaminated packaging:	Dispose of waste according to applicable legislation. Handle empty containers with care. Incineration may cause explosion. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

OPERATIONAL INSTRUCTION

according to § 20 GefStoffV (Germany)

Vinyl Ester Resin

Material number LRPOLO22-V

Field of activity:

Hazard to man and environment

Danger

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
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.

Preventive measures and rules of conduct

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P312	Call a POISON CENTER/doctor if you feel unwell.
P403+P235	Store in a well-ventilated place. Keep cool.

Provide good ventilation and/or an exhaust system in the work area.

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

Field of activity:

Reaction in case of danger

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

Extinguishing media:
Foam, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

Accidental release measures:
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

First aid

General information:	If medical advice is needed, have product container or label at hand. Take off contaminated clothing and wash it before reuse.
In case of inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.
Following skin contact:	Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.
After swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

Appropriate disposal

Waste key number	07 02 04* other organic solvents, washing liquids and mother liquors * = Evidence for disposal must be provided.
Product:	Dispose of waste according to applicable legislation. Do not dispose of with household waste.
Contaminated packaging:	Dispose of waste according to applicable legislation. Handle empty containers with care. Incineration may cause explosion. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

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

1.1 Product identifier

Trade name: Gelcoat

UFI: N000-50S4-Y004-UTU4

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

General use: Moulding
Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Company name: H.I.T. - Hagen GmbH
Street/POB-No.: P.O.Box 1221
Postal Code, city: 21271 Hanstedt
Germany
WWW: www.hit-hagen.com
E-mail: info@hit-hagen.com
Telephone: +49-4184-8424

Department responsible for information:
E-mail: info@hit-hagen.com, Telephone: +49-4184-8424

1.4 Emergency telephone number

Poisons Information Centre of Ireland
Telephone: 01 809 2566

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Flam. Liq. 3; H226	Flammable liquid and vapour.
Acute Tox. 4; H332	Harmful if inhaled.
Skin Irrit. 2; H315	Causes skin irritation.
Eye Irrit. 2; H319	Causes serious eye irritation.
Repr. 2; H361d	Suspected of damaging the unborn child.
STOT SE 3; H335	May cause respiratory irritation.
STOT RE 1; H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3; H412	Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (CLP)

Signal word: **Danger**

Hazard statements:	H226	Flammable liquid and vapour.
	H315	Causes skin irritation.
	H319	Causes serious eye irritation.
	H332	Harmful if inhaled.
	H335	May cause respiratory irritation.
	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P260	Do not breathe mist/vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	P312	Call a POISON CENTER/doctor if you feel unwell.
	P403+P235	Store in a well-ventilated place. Keep cool.

Special labelling

Text for labelling: Contains Styrene.

2.3 Other hazards

Potentially explosive mixtures may form if adequate ventilation is not provided.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:
No data available

SECTION 3: Composition/information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation: Unsaturated polyester polymer, dissolved in styrene

Hazardous ingredients:

Identifiers	Designation Classification	Content
REACH 01-2119457861-32-xxxx EC No. 202-851-5 CAS 100-42-5	Styrene Flam. Liq. 3; H226. Acute Tox. 4; 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.	30 - 45 %

Full text of H- and EUH-statements: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: If medical advice is needed, have product container or label at hand.
Take off contaminated clothing and wash it before reuse.

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.

Following skin contact: Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.

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, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapour. With air, vapours form potentially explosive mixtures, which are heavier than air. Vapours may proceed on the ground over great distances and cause fire and backflashes.
May form dangerous gases and vapours in case of fire. Furthermore, there may develop: Smoke, halogenated compounds, carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:
Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Heating will lead to pressure increase: Danger of bursting and explosion. Keep containers cool with water spray.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains. Danger of explosion!
In case of release, notify competent authorities.

6.3 Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.

Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Obtain special instructions before use. Provide adequate ventilation, and local exhaust as needed.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Precautions against fire and explosion:
Keep away from sources of ignition - No smoking. Take action to prevent static discharges.
Use only explosion-protected equipment/instruments. Do not weld.
In partially filled containers explosive mixtures may form.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:
Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight. Store containers in upright position.
Recommended storage temperature: 10 - 27 °C

Hints on joint storage: keep away from: strong acids, strong bases, oxidizing agents, peroxides, metal salts
Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
100-42-5	Styrene	Ireland: 15 minutes Ireland: 8 hours	170 mg/m³; 40 ppm 85 mg/m³; 20 ppm

DNEL/DMEL:

Information about Styrene:
DNEL workers, long-term, systemic, inhalative: 85 mg/m³
DNEL workers, short-term, systemic, inhalative: 289 mg/m³
DNEL workers, short-term, local, inhalative: 306 mg/m³
DNEL workers, long-term, systemic, dermal: 406 mg/kg bw/d
DNEL consumers, long-term, systemic, inhalative: 10.2 mg/m³
DNEL consumers, short-term, systemic, inhalative: 174.25 mg/m³
DNEL consumers, short-term, local, inhalative: 182.75 mg/m³
DNEL consumers, long-term, systemic, dermal: 343 mg/kg bw/d
DNEL consumers, long-term, systemic, oral: 2.1 mg/kg bw/d

PNEC:

Information about Styrene:
PNEC water (freshwater): 0.028 mg/L
PNEC water (marine water): 0.014 mg/L
PNEC sewage treatment plant: 5 mg/L
PNEC sediment (freshwater): 0.614 mg/kg dw
PNEC sediment (marine water): 0.307 mg/kg dw
PNEC soil: 0.2 mg/kg dw

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

General protection and hygiene measures:

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Environmental exposure controls

Refer to "6.2 Environmental precautions".

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	liquid
Colour:	white

Odour:	Stinging
Odour threshold:	No data available
Melting point/freezing point:	-31 °C (Styrene)
Initial boiling point and boiling range:	145 °C (Styrene)
Flammability:	Flammable liquid and vapour.
Upper/lower flammability or explosive limits:	LEL (Lower Explosion Limit): 1.10 Vol-% (Styrene) UEL (Upper Explosive Limit): 8.00 Vol-% (Styrene)
Flash point/flash point range:	31 °C (Styrene)
Decomposition temperature:	No data available
pH:	No data available
Viscosity, dynamic:	10000 - 15000 mPa*s
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	at 25 °C: 2.96 log P(o/w) (Styrene) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.
Vapour pressure:	at 20 °C: 6.67 hPa (Styrene)
Density:	at 25 °C: 1.0 - 1.3 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

9.2 Other information

Explosive properties:	Vapours can form explosive mixtures with air.
Oxidizing characteristics:	No data available
Auto-ignition temperature:	490 °C (Styrene)
Evaporation rate:	No data available
Additional information:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Flammable liquid and vapour.
Vapours can form explosive mixtures with air.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerizations may occur.

10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.
Protect from direct sunlight.

10.5 Incompatible materials

Strong acids, strong bases, strong oxidizing agents, peroxides, metal salts

10.6 Hazardous decomposition products

No decomposition when used properly.

Thermal decomposition: No data available

SECTION 11: Toxicological information

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

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix (calculated): approx. 5,000 mg/kg

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix (calculated): > 2,000 mg/kg

Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled.

Skin corrosion/irritation: Skin Irrit. 2; H315 = Causes skin irritation.

Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Repr. 2; H361d = Suspected of damaging the unborn child.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): STOT RE 1; H372 = Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information: Information about Styrene:
LC50 Rat, oral: approx. 5,000 mg/kg
LD50 Rat, dermal: > 2,000 mg/kg
LC50 Rat, inhalative: 11.8 mg/L/4h

Symptoms

Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
In case of inhalation:
headache, dizziness, fatigue, nausea, vomiting, amyosthenia, Impaired consciousness.
In case of ingestion: abdominal pain, nausea, vomiting, Irritation of throat.
After contact with skin:
redness. Prolonged/repetitive skin contact may cause skin defattening or dermatitis.
After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity: Information about Styrene:
Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 4.02 mg/L/96h
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 4.7 mg/L/48h (OECD 202)
NOEC Daphnia magna (Big water flea): 1.01 mg/L/21d (OECD 211)
Algae toxicity:
EC50 Raphidocelis subcapitata, growth rate: 4.9 mg/L/72h

12.2 Persistence and degradability

Further details: Information about Styrene:
Biodegradability: 100%/28d, readily biodegradable

12.3 Bioaccumulative potential

Bioconcentration factor (BCF): Information about Styrene:
Bioconcentration factor (BCF): 74

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

AOX reference: The product contains organically bound halogen.Thus it may add to the AOX value.
General information: Do not allow to enter into ground-water, surface water or drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 07 02 04* = other organic solvents, washing liquids and mother liquors
* = Evidence for disposal must be provided.
Recommendation: Dispose of waste according to applicable legislation.
Do not dispose of with household waste.

Package

Recommendation: Dispose of waste according to applicable legislation. Handle empty containers with care.
Incineration may cause explosion.
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID, IMDG, IATA-DGR: UN 1866

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: UN 1866, RESIN SOLUTION

14.3 Transport hazard class(es)

ADR/RID: Class 3, Code: F1
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3

14.4 Packing group

ADR/RID, IMDG, IATA-DGR: III

14.5 Environmental hazards

Dangerous for the environment: Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant: no

14.6 Special precautions for user

Land transport (ADR/RID)

Warning board:	ADR/RID: Kemmler-number 30, UN number UN 1866
Hazard label:	3
Special Provisions:	640E
Limited quantities:	5 L
EQ:	E1
Package - Instructions:	P001 IBC03 LP01 R001
Package - Special Provisions:	PP1
Special provisions for packing together:	MP19
Portable tanks - Instructions:	T2
Portable tanks - Special Provisions:	TP1
Tank coding:	LGBF
Tunnel restriction code:	D/E

Sea transport (IMDG)

EmS:	F-E, S-E
Special Provisions:	223 955
Limited quantities:	5 L
Excepted quantities:	E1
Package - Instructions:	P001, LP01
Package - Provisions:	PP1
IBC - Instructions:	IBC03
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T2
Tank instructions - Provisions:	TP1
Stowage and handling:	Category A.
Properties and observations:	Miscibility with water depends upon the composition.
Segregation group:	none

Air transport (IATA)

Hazard label:	Flamm. liquid
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y344 - Max. Net Qty/Pkg. 10 L
Passenger and Cargo Aircraft:	Pack.Instr. 355 - Max. Net Qty/Pkg. 60 L
Cargo Aircraft only:	Pack.Instr. 366 - Max. Net Qty/Pkg. 220 L
Special Provisions:	A3
Emergency Response Guide-Code (ERG):	3L

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

National regulations - EC member states

Volatile organic compounds (VOC):

30 - 45 %

Labelling of packaging with <= 125mL content

Signal word: **Danger**

Hazard statements:	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P260	Do not breathe mist/vapours/spray.
	P281	Use personal protective equipment as required.
	P314	Get medical advice/attention if you feel unwell.

Further regulations, limitations and legal requirements:

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]
Physical hazards: Code P5c, Quantity threshold 5 000 000 kg / 50 000 000 kg

Use restriction according to REACH annex XVII, no.: 3, 40, 75

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: Other information

Wording of the H-phrases under paragraph 2 and 3:

H226 = Flammable liquid and vapour.
H304 = May be fatal if swallowed and enters airways.
H315 = Causes skin irritation.
H319 = Causes serious eye irritation.
H332 = Harmful if inhaled.
H335 = May cause respiratory irritation.
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.

Date of first version: 5/9/2023

Department issuing data sheet: see section 1: Department responsible for information

Abbreviations and acronyms:

Acute Tox.: Acute toxicity
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
AOX: Adsorbable Organic Halogens
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
Asp. Tox.: Aspiration toxicity
BCF: Bioconcentration Factor
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EN: European Standard
EQ: Excepted quantities
EU: European Union
Eye Irrit.: Eye irritation
Flam. Liq.: Flammable liquid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
LEL: Lower Explosion Limit
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
NOEC: No Observed Effect Concentration
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.: Skin irritation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

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

1.1 Product identifier

Trade name: Isophthalic Polyester Resin

UFI: V300-P0FJ-800N-G5E6

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

General use: Moulding
Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Company name: H.I.T. - Hagen GmbH
Street/POB-No.: P.O.Box 1221
Postal Code, city: 21271 Hanstedt
Germany
WWW: www.hit-hagen.com
E-mail: info@hit-hagen.com
Telephone: +49-4184-8424

Department responsible for information:
E-mail: info@hit-hagen.com, Telephone: +49-4184-8424

1.4 Emergency telephone number

Poisons Information Centre of Ireland
Telephone: 01 809 2566

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Flam. Liq. 3; H226	Flammable liquid and vapour.
Acute Tox. 4; H332	Harmful if inhaled.
Skin Irrit. 2; H315	Causes skin irritation.
Eye Irrit. 2; H319	Causes serious eye irritation.
Repr. 2; H361d	Suspected of damaging the unborn child.
STOT SE 3; H335	May cause respiratory irritation.
STOT RE 1; H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3; H412	Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (CLP)

Signal word: **Danger**

Hazard statements:	H226	Flammable liquid and vapour.
	H315	Causes skin irritation.
	H319	Causes serious eye irritation.
	H332	Harmful if inhaled.
	H335	May cause respiratory irritation.
	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P260	Do not breathe mist/vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	P312	Call a POISON CENTER/doctor if you feel unwell.
	P403+P235	Store in a well-ventilated place. Keep cool.

Special labelling

Text for labelling: Contains Styrene.

2.3 Other hazards

Potentially explosive mixtures may form if adequate ventilation is not provided.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

No data available

SECTION 3: Composition/information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation: Unsaturated polyester polymer, dissolved in styrene

Hazardous ingredients:

Identifiers	Designation Classification	Content
REACH 01-2119457861-32-xxxx EC No. 202-851-5 CAS 100-42-5	Styrene Flam. Liq. 3; H226. Acute Tox. 4; 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.	30 - 45 %

Full text of H- and EUH-statements: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: If medical advice is needed, have product container or label at hand.
Take off contaminated clothing and wash it before reuse.

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.

Following skin contact: Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.

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, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapour. With air, vapours form potentially explosive mixtures, which are heavier than air. Vapours may proceed on the ground over great distances and cause fire and backflashes.
May form dangerous gases and vapours in case of fire. Furthermore, there may develop: Smoke, halogenated compounds, carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:
Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Heating will lead to pressure increase: Danger of bursting and explosion. Keep containers cool with water spray.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains. Danger of explosion!
In case of release, notify competent authorities.

6.3 Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.

Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Obtain special instructions before use. Provide adequate ventilation, and local exhaust as needed.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Precautions against fire and explosion:
Keep away from sources of ignition - No smoking. Take action to prevent static discharges.
Use only explosion-protected equipment/instruments. Do not weld.
In partially filled containers explosive mixtures may form.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:
Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight. Store containers in upright position.
Recommended storage temperature: 10 - 27 °C

Hints on joint storage: keep away from: strong acids, strong bases, oxidizing agents, peroxides, metal salts
Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
100-42-5	Styrene	Ireland: 15 minutes Ireland: 8 hours	170 mg/m³; 40 ppm 85 mg/m³; 20 ppm

DNEL/DMEL:

Information about Styrene:
DNEL workers, long-term, systemic, inhalative: 85 mg/m³
DNEL workers, short-term, systemic, inhalative: 289 mg/m³
DNEL workers, short-term, local, inhalative: 306 mg/m³
DNEL workers, long-term, systemic, dermal: 406 mg/kg bw/d
DNEL consumers, long-term, systemic, inhalative: 10.2 mg/m³
DNEL consumers, short-term, systemic, inhalative: 174.25 mg/m³
DNEL consumers, short-term, local, inhalative: 182.75 mg/m³
DNEL consumers, long-term, systemic, dermal: 343 mg/kg bw/d
DNEL consumers, long-term, systemic, oral: 2.1 mg/kg bw/d

PNEC:

Information about Styrene:
PNEC water (freshwater): 0.028 mg/L
PNEC water (marine water): 0.014 mg/L
PNEC sewage treatment plant: 5 mg/L
PNEC sediment (freshwater): 0.614 mg/kg dw
PNEC sediment (marine water): 0.307 mg/kg dw
PNEC soil: 0.2 mg/kg dw

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

General protection and hygiene measures:

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Environmental exposure controls

Refer to "6.2 Environmental precautions".

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa: liquid

Colour: yellow
clear

Odour:	Stinging
Odour threshold:	No data available
Melting point/freezing point:	-31 °C (Styrene)
Initial boiling point and boiling range:	145 °C (Styrene)
Flammability:	Flammable liquid and vapour.
Upper/lower flammability or explosive limits:	LEL (Lower Explosion Limit): 1.10 Vol-% (Styrene) UEL (Upper Explosive Limit): 8.00 Vol-% (Styrene)
Flash point/flash point range:	31 °C (Styrene)
Decomposition temperature:	No data available
pH:	No data available
Viscosity, dynamic:	400 - 600 mPa*s
Viscosity, kinematic:	375 - 575 mm²/s
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	at 25 °C: 2.96 log P(o/w) (Styrene) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.
Vapour pressure:	at 20 °C: 6.67 hPa (Styrene)
Density:	at 25 °C: 1.15 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

9.2 Other information

Explosive properties:	Vapours can form explosive mixtures with air.
Oxidizing characteristics:	No data available
Auto-ignition temperature:	490 °C (Styrene)
Evaporation rate:	No data available
Additional information:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Flammable liquid and vapour.
Vapours can form explosive mixtures with air.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerizations may occur.

10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.
Protect from direct sunlight.

10.5 Incompatible materials

Strong acids, strong bases, strong oxidizing agents, peroxides, metal salts

10.6 Hazardous decomposition products

No decomposition when used properly.

Thermal decomposition:	No data available

SECTION 11: Toxicological information

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

Toxicological effects:

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix (calculated): approx. 5,000 mg/kg

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix (calculated): > 2,000 mg/kg

Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled.

Skin corrosion/irritation: Skin Irrit. 2; H315 = Causes skin irritation.

Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Repr. 2; H361d = Suspected of damaging the unborn child.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): STOT RE 1; H372 = Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information:

Information about Styrene:
LC50 Rat, oral: approx. 5,000 mg/kg
LD50 Rat, dermal: > 2,000 mg/kg
LC50 Rat, inhalative: 11.8 mg/L/4h

Symptoms

Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
In case of inhalation:
headache, dizziness, fatigue, nausea, vomiting, amyosthenia, Impaired consciousness.
In case of ingestion: abdominal pain, nausea, vomiting, Irritation of throat.
After contact with skin:
redness. Prolonged/repetitive skin contact may cause skin defattening or dermatitis.
After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Information about Styrene:
Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 4.02 mg/L/96h
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 4.7 mg/L/48h (OECD 202)
NOEC Daphnia magna (Big water flea): 1.01 mg/L/21d (OECD 211)
Algae toxicity:
EC50 Raphidocelis subcapitata, growth rate: 4.9 mg/L/72h

12.2 Persistence and degradability

Further details: Information about Styrene:
Biodegradability: 100%/28d, readily biodegradable

12.3 Bioaccumulative potential

Bioconcentration factor (BCF): Information about Styrene:
Bioconcentration factor (BCF): 74

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

AOX reference: The product contains organically bound halogen.Thus it may add to the AOX value.
General information: Do not allow to enter into ground-water, surface water or drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 07 02 04* = other organic solvents, washing liquids and mother liquors
* = Evidence for disposal must be provided.
Recommendation: Dispose of waste according to applicable legislation.
Do not dispose of with household waste.

Package

Recommendation: Dispose of waste according to applicable legislation. Handle empty containers with care.
Incineration may cause explosion.
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID, IMDG, IATA-DGR: UN 1866

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: UN 1866, RESIN SOLUTION

14.3 Transport hazard class(es)

ADR/RID: Class 3, Code: F1
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3

14.4 Packing group

ADR/RID, IMDG, IATA-DGR: III

14.5 Environmental hazards

Dangerous for the environment: Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant: no

14.6 Special precautions for user

Land transport (ADR/RID)

Warning board:	ADR/RID: Kemmler-number 30, UN number UN 1866
Hazard label:	3
Special Provisions:	640E
Limited quantities:	5 L
EQ:	E1
Package - Instructions:	P001 IBC03 LP01 R001
Package - Special Provisions:	PP1
Special provisions for packing together:	MP19
Portable tanks - Instructions:	T2
Portable tanks - Special Provisions:	TP1
Tank coding:	LGBF
Tunnel restriction code:	D/E

Sea transport (IMDG)

EmS:	F-E, S-E
Special Provisions:	223 955
Limited quantities:	5 L
Excepted quantities:	E1
Package - Instructions:	P001, LP01
Package - Provisions:	PP1
IBC - Instructions:	IBC03
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T2
Tank instructions - Provisions:	TP1
Stowage and handling:	Category A.
Properties and observations:	Miscibility with water depends upon the composition.
Segregation group:	none

Air transport (IATA)

Hazard label:	Flamm. liquid
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y344 - Max. Net Qty/Pkg. 10 L
Passenger and Cargo Aircraft:	Pack.Instr. 355 - Max. Net Qty/Pkg. 60 L
Cargo Aircraft only:	Pack.Instr. 366 - Max. Net Qty/Pkg. 220 L
Special Provisions:	A3
Emergency Response Guide-Code (ERG):	3L

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

National regulations - EC member states

Volatile organic compounds (VOC):

30 - 45 %

Labelling of packaging with <= 125mL content

Signal word: **Danger**

Hazard statements:	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P260	Do not breathe mist/vapours/spray.
	P281	Use personal protective equipment as required.
	P314	Get medical advice/attention if you feel unwell.

Further regulations, limitations and legal requirements:

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]
Physical hazards: Code P5c, Quantity threshold 5 000 000 kg / 50 000 000 kg

Use restriction according to REACH annex XVII, no.: 3, 40, 75

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: Other information

Wording of the H-phrases under paragraph 2 and 3:

H226 = Flammable liquid and vapour.
H304 = May be fatal if swallowed and enters airways.
H315 = Causes skin irritation.
H319 = Causes serious eye irritation.
H332 = Harmful if inhaled.
H335 = May cause respiratory irritation.
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.

Date of first version: 14/9/2023

Department issuing data sheet: see section 1: Department responsible for information

Abbreviations and acronyms:

Acute Tox.: Acute toxicity
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
AOX: Adsorbable Organic Halogens
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
Asp. Tox.: Aspiration toxicity
BCF: Bioconcentration Factor
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EN: European Standard
EQ: Excepted quantities
EU: European Union
Eye Irrit.: Eye irritation
Flam. Liq.: Flammable liquid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
LEL: Lower Explosion Limit
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
NOEC: No Observed Effect Concentration
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.: Skin irritation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

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

1.1 Product identifier

Trade name: Orthophthalic Polyester Resin

UFI: C800-P0UA-V00M-TUKA

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

General use: Moulding
Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Company name: H.I.T. - Hagen GmbH
Street/POB-No.: P.O.Box 1221
Postal Code, city: 21271 Hanstedt
Germany
WWW: www.hit-hagen.com
E-mail: info@hit-hagen.com
Telephone: +49-4184-8424

Department responsible for information:
E-mail: info@hit-hagen.com, Telephone: +49-4184-8424

1.4 Emergency telephone number

Poisons Information Centre of Ireland
Telephone: 01 809 2566

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Flam. Liq. 3; H226	Flammable liquid and vapour.
Acute Tox. 4; H332	Harmful if inhaled.
Skin Irrit. 2; H315	Causes skin irritation.
Eye Irrit. 2; H319	Causes serious eye irritation.
Repr. 2; H361d	Suspected of damaging the unborn child.
STOT SE 3; H335	May cause respiratory irritation.
STOT RE 1; H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3; H412	Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (CLP)

Signal word: **Danger**

Hazard statements:	H226	Flammable liquid and vapour.
	H315	Causes skin irritation.
	H319	Causes serious eye irritation.
	H332	Harmful if inhaled.
	H335	May cause respiratory irritation.
	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P260	Do not breathe mist/vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	P312	Call a POISON CENTER/doctor if you feel unwell.
	P403+P235	Store in a well-ventilated place. Keep cool.

Special labelling

Text for labelling: Contains Styrene.

2.3 Other hazards

Potentially explosive mixtures may form if adequate ventilation is not provided.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

No data available

SECTION 3: Composition/information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation: Unsaturated polyester polymer, dissolved in styrene

Hazardous ingredients:

Identifiers	Designation Classification	Content
REACH 01-2119457861-32-xxxx EC No. 202-851-5 CAS 100-42-5	Styrene Flam. Liq. 3; H226. Acute Tox. 4; 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.	30 - 45 %

Full text of H- and EUH-statements: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: If medical advice is needed, have product container or label at hand.
Take off contaminated clothing and wash it before reuse.

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.

Following skin contact: Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.

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, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapour. With air, vapours form potentially explosive mixtures, which are heavier than air. Vapours may proceed on the ground over great distances and cause fire and backflashes.
May form dangerous gases and vapours in case of fire. Furthermore, there may develop: Smoke, halogenated compounds, carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:
Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Heating will lead to pressure increase: Danger of bursting and explosion. Keep containers cool with water spray.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains. Danger of explosion!
In case of release, notify competent authorities.

6.3 Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.

Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Obtain special instructions before use. Provide adequate ventilation, and local exhaust as needed.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Precautions against fire and explosion:
Keep away from sources of ignition - No smoking. Take action to prevent static discharges.
Use only explosion-protected equipment/instruments. Do not weld.
In partially filled containers explosive mixtures may form.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:
Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight. Store containers in upright position.
Recommended storage temperature: 10 - 27 °C

Hints on joint storage: keep away from: strong acids, strong bases, oxidizing agents, peroxides, metal salts
Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
100-42-5	Styrene	Ireland: 15 minutes Ireland: 8 hours	170 mg/m³; 40 ppm 85 mg/m³; 20 ppm

DNEL/DMEL:

Information about Styrene:
DNEL workers, long-term, systemic, inhalative: 85 mg/m³
DNEL workers, short-term, systemic, inhalative: 289 mg/m³
DNEL workers, short-term, local, inhalative: 306 mg/m³
DNEL workers, long-term, systemic, dermal: 406 mg/kg bw/d
DNEL consumers, long-term, systemic, inhalative: 10.2 mg/m³
DNEL consumers, short-term, systemic, inhalative: 174.25 mg/m³
DNEL consumers, short-term, local, inhalative: 182.75 mg/m³
DNEL consumers, long-term, systemic, dermal: 343 mg/kg bw/d
DNEL consumers, long-term, systemic, oral: 2.1 mg/kg bw/d

PNEC:

Information about Styrene:
PNEC water (freshwater): 0.028 mg/L
PNEC water (marine water): 0.014 mg/L
PNEC sewage treatment plant: 5 mg/L
PNEC sediment (freshwater): 0.614 mg/kg dw
PNEC sediment (marine water): 0.307 mg/kg dw
PNEC soil: 0.2 mg/kg dw

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

General protection and hygiene measures:

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Environmental exposure controls

Refer to "6.2 Environmental precautions".

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa:

liquid
Form: viscous

Colour:

Varying

Odour:	Stinging
Odour threshold:	No data available
Melting point/freezing point:	-31 °C (Styrene)
Initial boiling point and boiling range:	145 °C (Styrene)
Flammability:	Flammable liquid and vapour.
Upper/lower flammability or explosive limits:	LEL (Lower Explosion Limit): 1.10 Vol-% (Styrene) UEL (Upper Explosive Limit): 8.00 Vol-% (Styrene)
Flash point/flash point range:	31 °C (Styrene)
Decomposition temperature:	No data available
pH:	No data available
Viscosity, dynamic:	400 - 600 mPa*s
Viscosity, kinematic:	375 - 575 mm²/s
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	at 25 °C: 2.96 log P(o/w) (Styrene) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.
Vapour pressure:	at 20 °C: 6.67 hPa (Styrene)
Density:	at 25 °C: 1.06 - 1.12 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

9.2 Other information

Explosive properties:	Vapours can form explosive mixtures with air.
Oxidizing characteristics:	No data available
Auto-ignition temperature:	490 °C (Styrene)
Evaporation rate:	No data available
Additional information:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Flammable liquid and vapour.
Vapours can form explosive mixtures with air.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerizations may occur.

10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.
Protect from direct sunlight.

10.5 Incompatible materials

Strong acids, strong bases, strong oxidizing agents, peroxides, metal salts

10.6 Hazardous decomposition products

No decomposition when used properly.

Thermal decomposition:	No data available

SECTION 11: Toxicological information

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

Toxicological effects:

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix (calculated): approx. 5,000 mg/kg

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix (calculated): > 2,000 mg/kg

Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled.

Skin corrosion/irritation: Skin Irrit. 2; H315 = Causes skin irritation.

Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Repr. 2; H361d = Suspected of damaging the unborn child.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): STOT RE 1; H372 = Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information:

Information about Styrene:
LC50 Rat, oral: approx. 5,000 mg/kg
LD50 Rat, dermal: > 2,000 mg/kg
LC50 Rat, inhalative: 11.8 mg/L/4h

Symptoms

Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
In case of inhalation:
headache, dizziness, fatigue, nausea, vomiting, amyosthenia, Impaired consciousness.
In case of ingestion: abdominal pain, nausea, vomiting, Irritation of throat.
After contact with skin:
redness. Prolonged/repetitive skin contact may cause skin defattening or dermatitis.
After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Information about Styrene:
Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 4.02 mg/L/96h
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 4.7 mg/L/48h (OECD 202)
NOEC Daphnia magna (Big water flea): 1.01 mg/L/21d (OECD 211)
Algae toxicity:
EC50 Raphidocelis subcapitata, growth rate: 4.9 mg/L/72h

12.2 Persistence and degradability

Further details: Information about Styrene:
Biodegradability: 100%/28d, readily biodegradable

12.3 Bioaccumulative potential

Bioconcentration factor (BCF): Information about Styrene:
Bioconcentration factor (BCF): 74

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

AOX reference: The product contains organically bound halogen.Thus it may add to the AOX value.
General information: Do not allow to enter into ground-water, surface water or drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 07 02 04* = other organic solvents, washing liquids and mother liquors
* = Evidence for disposal must be provided.
Recommendation: Dispose of waste according to applicable legislation.
Do not dispose of with household waste.

Package

Recommendation: Dispose of waste according to applicable legislation. Handle empty containers with care.
Incineration may cause explosion.
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID, IMDG, IATA-DGR: UN 1866

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: UN 1866, RESIN SOLUTION

14.3 Transport hazard class(es)

ADR/RID: Class 3, Code: F1
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3

14.4 Packing group

ADR/RID, IMDG, IATA-DGR: III

14.5 Environmental hazards

Dangerous for the environment: Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant: no

14.6 Special precautions for user

Land transport (ADR/RID)

Warning board:	ADR/RID: Kemmler-number 30, UN number UN 1866
Hazard label:	3
Special Provisions:	640E
Limited quantities:	5 L
EQ:	E1
Package - Instructions:	P001 IBC03 LP01 R001
Package - Special Provisions:	PP1
Special provisions for packing together:	MP19
Portable tanks - Instructions:	T2
Portable tanks - Special Provisions:	TP1
Tank coding:	LGBF
Tunnel restriction code:	D/E

Sea transport (IMDG)

EmS:	F-E, S-E
Special Provisions:	223 955
Limited quantities:	5 L
Excepted quantities:	E1
Package - Instructions:	P001, LP01
Package - Provisions:	PP1
IBC - Instructions:	IBC03
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T2
Tank instructions - Provisions:	TP1
Stowage and handling:	Category A.
Properties and observations:	Miscibility with water depends upon the composition.
Segregation group:	none

Air transport (IATA)

Hazard label:	Flamm. liquid
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y344 - Max. Net Qty/Pkg. 10 L
Passenger and Cargo Aircraft:	Pack.Instr. 355 - Max. Net Qty/Pkg. 60 L
Cargo Aircraft only:	Pack.Instr. 366 - Max. Net Qty/Pkg. 220 L
Special Provisions:	A3
Emergency Response Guide-Code (ERG):	3L

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

National regulations - EC member states

Volatile organic compounds (VOC):

30 - 45 %

Labelling of packaging with <= 125mL content

Signal word: **Danger**

Hazard statements:	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P260	Do not breathe mist/vapours/spray.
	P281	Use personal protective equipment as required.
	P314	Get medical advice/attention if you feel unwell.

Further regulations, limitations and legal requirements:

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]
Physical hazards: Code P5c, Quantity threshold 5 000 000 kg / 50 000 000 kg

Use restriction according to REACH annex XVII, no.: 3, 40, 75

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: Other information

Wording of the H-phrases under paragraph 2 and 3:

H226 = Flammable liquid and vapour.
H304 = May be fatal if swallowed and enters airways.
H315 = Causes skin irritation.
H319 = Causes serious eye irritation.
H332 = Harmful if inhaled.
H335 = May cause respiratory irritation.
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.

Date of first version: 13/9/2023

Department issuing data sheet: see section 1: Department responsible for information

Abbreviations and acronyms:

Acute Tox.: Acute toxicity
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
AOX: Adsorbable Organic Halogens
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
Asp. Tox.: Aspiration toxicity
BCF: Bioconcentration Factor
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EN: European Standard
EQ: Excepted quantities
EU: European Union
Eye Irrit.: Eye irritation
Flam. Liq.: Flammable liquid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
LEL: Lower Explosion Limit
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
NOEC: No Observed Effect Concentration
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.: Skin irritation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

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

1.1 Product identifier

Trade name: Vinyl Ester Resin

UFI: 1600-604X-K004-5H08

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

General use: Moulding
Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Company name: H.I.T. - Hagen GmbH
Street/POB-No.: P.O.Box 1221
Postal Code, city: 21271 Hanstedt
Germany
WWW: www.hit-hagen.com
E-mail: info@hit-hagen.com
Telephone: +49-4184-8424

Department responsible for information:
E-mail: info@hit-hagen.com, Telephone: +49-4184-8424

1.4 Emergency telephone number

Poisons Information Centre of Ireland
Telephone: 01 809 2566

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Flam. Liq. 3; H226	Flammable liquid and vapour.
Acute Tox. 4; H332	Harmful if inhaled.
Skin Irrit. 2; H315	Causes skin irritation.
Eye Irrit. 2; H319	Causes serious eye irritation.
Repr. 2; H361d	Suspected of damaging the unborn child.
STOT SE 3; H335	May cause respiratory irritation.
STOT RE 1; H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3; H412	Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (CLP)

Signal word: **Danger**

Hazard statements:	H226	Flammable liquid and vapour.
	H315	Causes skin irritation.
	H319	Causes serious eye irritation.
	H332	Harmful if inhaled.
	H335	May cause respiratory irritation.
	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P260	Do not breathe mist/vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	P312	Call a POISON CENTER/doctor if you feel unwell.
	P403+P235	Store in a well-ventilated place. Keep cool.

Special labelling

Text for labelling: Contains Styrene.

2.3 Other hazards

Potentially explosive mixtures may form if adequate ventilation is not provided.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:
No data available

SECTION 3: Composition/information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation: Unsaturated polyester polymer, dissolved in styrene

Hazardous ingredients:

Identifiers	Designation Classification	Content
REACH 01-2119457861-32-xxxx EC No. 202-851-5 CAS 100-42-5	Styrene Flam. Liq. 3; H226. Acute Tox. 4; 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.	30 - 45 %

Full text of H- and EUH-statements: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: If medical advice is needed, have product container or label at hand.
Take off contaminated clothing and wash it before reuse.

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.

Following skin contact: Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical treatment in case of troubles.

4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.

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, extinguishing powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:
Water

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapour. With air, vapours form potentially explosive mixtures, which are heavier than air. Vapours may proceed on the ground over great distances and cause fire and backflashes.
May form dangerous gases and vapours in case of fire. Furthermore, there may develop: Smoke, halogenated compounds, carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:
Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Heating will lead to pressure increase: Danger of bursting and explosion. Keep containers cool with water spray.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. If possible, eliminate leakage.
Do not breathe mist/vapours/spray. Avoid contact with the substance.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.
Cordon off downwind area at risk and warn inhabitants.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains. Danger of explosion!
In case of release, notify competent authorities.

6.3 Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).
Beware of reignition. Thoroughly clean surrounding area.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.

Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Obtain special instructions before use. Provide adequate ventilation, and local exhaust as needed.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Precautions against fire and explosion:
Keep away from sources of ignition - No smoking. Take action to prevent static discharges.
Use only explosion-protected equipment/instruments. Do not weld.
In partially filled containers explosive mixtures may form.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:
Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight. Store containers in upright position.
Recommended storage temperature: 10 - 27 °C

Hints on joint storage: keep away from: strong acids, strong bases, oxidizing agents, peroxides, metal salts
Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
100-42-5	Styrene	Ireland: 15 minutes Ireland: 8 hours	170 mg/m³; 40 ppm 85 mg/m³; 20 ppm

DNEL/DMEL:

Information about Styrene:
DNEL workers, long-term, systemic, inhalative: 85 mg/m³
DNEL workers, short-term, systemic, inhalative: 289 mg/m³
DNEL workers, short-term, local, inhalative: 306 mg/m³
DNEL workers, long-term, systemic, dermal: 406 mg/kg bw/d
DNEL consumers, long-term, systemic, inhalative: 10.2 mg/m³
DNEL consumers, short-term, systemic, inhalative: 174.25 mg/m³
DNEL consumers, short-term, local, inhalative: 182.75 mg/m³
DNEL consumers, long-term, systemic, dermal: 343 mg/kg bw/d
DNEL consumers, long-term, systemic, oral: 2.1 mg/kg bw/d

PNEC:

Information about Styrene:
PNEC water (freshwater): 0.028 mg/L
PNEC water (marine water): 0.014 mg/L
PNEC sewage treatment plant: 5 mg/L
PNEC sediment (freshwater): 0.614 mg/kg dw
PNEC sediment (marine water): 0.307 mg/kg dw
PNEC soil: 0.2 mg/kg dw

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
In case of inadequate ventilation wear respiratory protection.
Recommendation: Use combination filter type A-P according to EN 14387.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection:

Protective gloves according to BS EN 374.
Glove material: fluoro rubber (0.7 mm)
Breakthrough time: > 480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to BS EN ISO 16321-1:2022.

Body protection:

Flame retardant, antistatic and chemical resistant protective clothing.

General protection and hygiene measures:

Obtain special instructions before use.
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling.
Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.
Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Environmental exposure controls

Refer to "6.2 Environmental precautions".

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa: liquid

Colour: yellow
clear

Odour:	Stinging
Odour threshold:	No data available
Melting point/freezing point:	-31 °C (Styrene)
Initial boiling point and boiling range:	145 °C (Styrene)
Flammability:	Flammable liquid and vapour.
Upper/lower flammability or explosive limits:	LEL (Lower Explosion Limit): 1.10 Vol-% (Styrene) UEL (Upper Explosive Limit): 8.00 Vol-% (Styrene)
Flash point/flash point range:	31 °C (Styrene)
Decomposition temperature:	No data available
pH:	No data available
Viscosity, dynamic:	400 - 600 mPa*s
Viscosity, kinematic:	375 - 575 mm²/s
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	at 25 °C: 2.96 log P(o/w) (Styrene) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.
Vapour pressure:	at 20 °C: 6.67 hPa (Styrene)
Density:	at 25 °C: 1.0 - 1.3 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

9.2 Other information

Explosive properties:	Vapours can form explosive mixtures with air.
Oxidizing characteristics:	No data available
Auto-ignition temperature:	490 °C (Styrene)
Evaporation rate:	No data available
Additional information:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Flammable liquid and vapour.
Vapours can form explosive mixtures with air.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerizations may occur.

10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.
Protect from direct sunlight.

10.5 Incompatible materials

Strong acids, strong bases, strong oxidizing agents, peroxides, metal salts

10.6 Hazardous decomposition products

No decomposition when used properly.

Thermal decomposition:	No data available

SECTION 11: Toxicological information

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

Toxicological effects:

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix (calculated): approx. 5,000 mg/kg

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix (calculated): > 2,000 mg/kg

Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled.

Skin corrosion/irritation: Skin Irrit. 2; H315 = Causes skin irritation.

Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Repr. 2; H361d = Suspected of damaging the unborn child.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): STOT RE 1; H372 = Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information:

Information about Styrene:
LC50 Rat, oral: approx. 5,000 mg/kg
LD50 Rat, dermal: > 2,000 mg/kg
LC50 Rat, inhalative: 11.8 mg/L/4h

Symptoms

Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.
In case of inhalation:
headache, dizziness, fatigue, nausea, vomiting, amyosthenia, Impaired consciousness.
In case of ingestion: abdominal pain, nausea, vomiting, Irritation of throat.
After contact with skin:
redness. Prolonged/repetitive skin contact may cause skin defattening or dermatitis.
After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Information about Styrene:
Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 4.02 mg/L/96h
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 4.7 mg/L/48h (OECD 202)
NOEC Daphnia magna (Big water flea): 1.01 mg/L/21d (OECD 211)
Algae toxicity:
EC50 Raphidocelis subcapitata, growth rate: 4.9 mg/L/72h

12.2 Persistence and degradability

Further details: Information about Styrene:
Biodegradability: 100%/28d, readily biodegradable

12.3 Bioaccumulative potential

Bioconcentration factor (BCF): Information about Styrene:
Bioconcentration factor (BCF): 74

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

AOX reference: The product contains organically bound halogen.Thus it may add to the AOX value.
General information: Do not allow to enter into ground-water, surface water or drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 07 02 04* = other organic solvents, washing liquids and mother liquors
* = Evidence for disposal must be provided.
Recommendation: Dispose of waste according to applicable legislation.
Do not dispose of with household waste.

Package

Recommendation: Dispose of waste according to applicable legislation. Handle empty containers with care.
Incineration may cause explosion.
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID, IMDG, IATA-DGR: UN 1866

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: UN 1866, RESIN SOLUTION

14.3 Transport hazard class(es)

ADR/RID: Class 3, Code: F1
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3

14.4 Packing group

ADR/RID, IMDG, IATA-DGR: III

14.5 Environmental hazards

Dangerous for the environment: Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant: no

14.6 Special precautions for user

Land transport (ADR/RID)

Warning board:	ADR/RID: Kemmler-number 30, UN number UN 1866
Hazard label:	3
Special Provisions:	640E
Limited quantities:	5 L
EQ:	E1
Package - Instructions:	P001 IBC03 LP01 R001
Package - Special Provisions:	PP1
Special provisions for packing together:	MP19
Portable tanks - Instructions:	T2
Portable tanks - Special Provisions:	TP1
Tank coding:	LGBF
Tunnel restriction code:	D/E

Sea transport (IMDG)

EmS:	F-E, S-E
Special Provisions:	223 955
Limited quantities:	5 L
Excepted quantities:	E1
Package - Instructions:	P001, LP01
Package - Provisions:	PP1
IBC - Instructions:	IBC03
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T2
Tank instructions - Provisions:	TP1
Stowage and handling:	Category A.
Properties and observations:	Miscibility with water depends upon the composition.
Segregation group:	none

Air transport (IATA)

Hazard label:	Flamm. liquid
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y344 - Max. Net Qty/Pkg. 10 L
Passenger and Cargo Aircraft:	Pack.Instr. 355 - Max. Net Qty/Pkg. 60 L
Cargo Aircraft only:	Pack.Instr. 366 - Max. Net Qty/Pkg. 220 L
Special Provisions:	A3
Emergency Response Guide-Code (ERG):	3L

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

National regulations - EC member states

Volatile organic compounds (VOC):

30 - 45 %

Labelling of packaging with <= 125mL content

Signal word: **Danger**

Hazard statements:	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.
Precautionary statements:	P201	Obtain special instructions before use.
	P260	Do not breathe mist/vapours/spray.
	P281	Use personal protective equipment as required.
	P314	Get medical advice/attention if you feel unwell.

Further regulations, limitations and legal requirements:

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]
Physical hazards: Code P5c, Quantity threshold 5 000 000 kg / 50 000 000 kg

Use restriction according to REACH annex XVII, no.: 3, 40, 75

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: Other information

Wording of the H-phrases under paragraph 2 and 3:

H226 = Flammable liquid and vapour.
H304 = May be fatal if swallowed and enters airways.
H315 = Causes skin irritation.
H319 = Causes serious eye irritation.
H332 = Harmful if inhaled.
H335 = May cause respiratory irritation.
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.

Date of first version: 13/9/2023

Department issuing data sheet: see section 1: Department responsible for information

Abbreviations and acronyms:

Acute Tox.: Acute toxicity
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
AOX: Adsorbable Organic Halogens
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
Asp. Tox.: Aspiration toxicity
BCF: Bioconcentration Factor
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EN: European Standard
EQ: Excepted quantities
EU: European Union
Eye Irrit.: Eye irritation
Flam. Liq.: Flammable liquid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
LEL: Lower Explosion Limit
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
NOEC: No Observed Effect Concentration
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.: Skin irritation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.