ALEC TIRANTI LIMITED

TOOLS, MATERIALS & EQUIPMENT FOR MODELLING, CARVING, SCULPTURE
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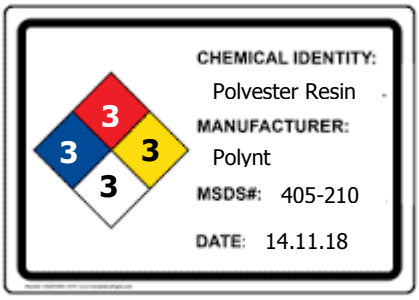
Material Safety Data Sheet

Clear Casting Resin

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description:	POLYLITE® 32032-00
SAP ID(s):	4887 ; 203623
Chemical Family:	Polyester Resin



FIRE	3
REACTIVITY	3
HEALTH	3
PROTECTION	3

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

Intended Use	Casting Resin
Sector of use	SU 3 - Industrial uses SU12 - Manufacture of plastics products, including compounding and conversion SU 22 - Professional uses
Product category	PC32 - Polymer Mixtures and Compounds
Process categories	PROC1 - Use in closed process, no likelihood of exposure PROC3 - Use in closed batch process (synthesis or formulation); Industrial setting PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) PROC7 - Industrial spraying PROC8a - Transfer of substance or mixture (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC 8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing

PROC11 - Non industrial spraying
PROC14 - Production of mixtures or articles by tabletting, compression, extrusion, pelletization
PROC15 - Use as a laboratory reagent
PROC13 - Treatment of articles by dipping and pouring

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier
Polynt Composites UK Ltd.
Laporte Road
Stallingborough - Near Grimsby
North East Lincolnshire, England DN41 8DR
Tel: +39 035 652111
E-mail address msds@polynt.com : +39 035 652111

1.4. Emergency telephone number

CareChem24) +44(0)1235 239670
Poison Center Information Number United Kingdom - Contact CareChem24

2. HAZARDS IDENTIFICATION

2.1. - Classification of the substance or mixture

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitisation	Category 1B
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Chronic aquatic toxicity	Category 3
flammable liquid	Category 3

2.2. Label Elements

Signal Word Danger
Contains Methyl Methacrylate
Styrene

Hazard Statements
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H361d - Suspected of damaging the unborn child
H372 - Causes damage to hearing through prolonged or repeated exposure if inhaled
H412 - Harmful to aquatic life with long lasting effects
H226 - Flammable liquid and vapour

0% of the mixture consists of ingredient(s) of unknown toxicity.
63.8% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking
P260 - Do not breathe mist, vapors, spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

2.3. Other hazards
No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	CAS-No	Weight %	EU - GHS Substance Classification	REACH No.
Styrene	202-851-5	100-42-5	30-34	skinn Irrit. 2 (H315) Flam. Liq. 3 (H226) Eye Irrit. 2 (H319) Acute Tox. 4 (H332) STOT SE 3 (H335) STOT RE 1 (H372) Repr. 2 (H361d) Asp. Tox. 1 (H304) Aquatic Chronic 3(H412	01-2119457861-32
Methyl methacrylate	201-297-1	80-62-6	4-6	Skin Irrit. 2 (H315) Flam. Liq. 2 (H225) STOT SE 3 (H335) Skin Sens. 1 (H317)	01-2119452498-28

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact:
Immediately flush eyes for at least 15 minutes. Get medical attention.
Skin contact:
Wash off with warm water and soap. Remove contaminated clothing and shoes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse
Ingestion:
DO NOT INDUCE VOMITING. This material may enter the lungs during vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
Inhalation:
Remove person to fresh air. Keep patient warm and at rest. If breathing is labored, administer oxygen. If not breathing, give artificial respiration. Get medical attention immediately. In case of unconsciousness bring patient into stable side position for transport.

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

Irritating to eyes, respiratory system and skin. May cause allergic skin reaction. May cause cancer. Repeated exposure to styrene may cause hearing effects. Harmful by inhalation, in contact with skin and if swallowed.

4.3. Indication of immediate medical attention and special treatment needed

Notes To physician
Treat symptomatically

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media:
Carbon dioxide (CO2), Foam, Dry chemical, Water spray

Extinguishing media which must not be used for safety reasons:
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
Flammable. Vapors may form explosive mixture with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Combustion may produce carbon monoxide, carbon dioxide, irritating or toxic vapors and gases. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

5.3. Advice for firefighters

Special protective equipment for fire-fighters
wear self-contained breathing apparatus and full and protective suit.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Remove all sources of ignition. Evacuate personnel to safe areas. Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Avoid contact with skin and eyes. All equipment used when handling the product must be grounded.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.3. Methods and material for containment and cleaning up
A vapor suppressing foam may be used to reduce vapors. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Use clean non-sparking tools to collect absorbed material.

6.4. Reference to other sections
See Section 12 for additional information

7. HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Handling:
Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Ensure adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage.
Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld,

braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed. Do not use compressed air for filling, discharging or handling.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. No smoking. Keep away from direct sunlight. Store away from incompatible materials. Keep containers tightly closed in a cool, well-ventilated place. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 25°C.

7.3. Specific End Use(s)

Other Guidelines No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters
Exposure limits
Components with workplace control parameters

Styrene

Austria	80 ppm STEL
	340 mg/m3 STEL
	20 ppm MAK
	85 mg/m3 MAK
Belgium	25 ppm TWA
	108 mg/m3 TWA
	(skin)80 ppm STEL
	346 mg/m3 STEL
Bulgaria	85.0 mg/m3 TWA
	215.0 mg/m3 STEL
Croatia	250 ppm STEL KGVI
	1080 mg/m3 STEL KGVI
	100 ppm TWA GVI
	430 mg/m3 TWA GVI
Czech Republic	400 mg/m3 Ceiling
	100 mg/m3 TWA
	(skin)
Denmark	25 ppm Ceiling
	105 mg/m3 Ceiling
	(skin)
Estonia	20 ppm TWA
	90 mg/m3 TWA
	50 ppm STEL
	200 mg/m3 STEL
	skin)
Finland	20 ppm TWA
	86 mg/m3 TWA
	100 ppm STEL
	430 mg/m3 STEL
France	23.3 ppm TWA
	100 mg/m3 TWA
	46.6 ppm STEL
	200 mg/m3 STEL
Germany	20 ppm TWA
	86 mg/m3 TWA
Greece	100 ppm TWA
	425 mg/m3 TWA
	250 ppm STEL
	1050 mg/m3 STEL
Hungary	50 mg/m3 TWA AK
	50 mg/m3 STEL CK
Ireland	20 ppm TWA

	85 mg/m3 TWA
	40 ppm STEL
	170 mg/m3 STEL
Italy	20 ppm TWA
	85 mg/m3 TWA
	40 ppm STEL
	170 mg/m3 STEL
Latvia	10 mg/m3 TWA
	30 mg/m3 STEL
Lithuania	20 ppm TWA (IPRD)
	90 mg/m3 TWA (IPRD)
	10 ppm TWA (IPRD)
	50 ppm STEL (TPRD)
	200 mg/m3 STEL (TPRD)
	(skin)
Norway	25 ppm TWA
	105 mg/m3 TWA
	25 ppm STEL
	105 mg/m3 STEL
Poland	200 mg/m3 STEL
	50 mg/m3 TWA
	(skin)
Portugal OELs Data	20 ppm
	40 ppm STEL
Romania	12 ppm TWA
	50 mg/m3 TWA
	35 ppm STEL
	150 mg/m3 STEL
Russia	10 mg/m3 TWA (vapor)
	30 mg/m3 STEL (vapor)
Slovakia	20 ppm TWA
	86 mg/m3 TWA
	200 mg/m3 Ceiling
Slovenia	20 ppm TWA
	86 mg/m3 TWA
	80 ppm STEL
	344 mg/m3 STEL
Spain	20 ppm VLA-ED
	86 mg/m3 VLA-ED
	40 ppm VLA-EC
	172 mg/m3 VLA-EC
Sweden	10 ppm LLV
	43 mg/m3 LLV
	20 ppm STV
	86 mg/m3 STV(skin)
Switzerland	40 ppm STEL
	170 mg/m3 STEL
	20 ppm MAK
	85 mg/m3 MAK
United Kingdom	100 ppm TWA
	430 mg/m3 TWA
	250 ppm STEL
	1080 mg/m3 STEL
ACGIH - TLV	20 ppm TWA
	40 ppm STEL

Methyl methacrylate

European Union	100 ppm Indicative
	50 ppm Indicative
Austria	100 ppm STEL
	420 mg/m3 STEL
	50 ppm TWA
	210 mg/m3 TWA
Belgium	50 ppm TWA
	208 mg/m3 TWA
	100 ppm STEL
	416 mg/m3 STEL
Bulgaria	50.0 mg/m3 TWA
	100 ppm STEL
Croatia	100 ppm STEL KGVI
	50 ppm TWA GVI
Czech Republic	150 mg/m3 Ceiling
	50 mg/m3 TWA
	(skin)
Denmark	25 ppm

	102 mg/m3
	(skin)
Estonia	50 ppm TWA
	200 mg/m3 TWA
	150 ppm STEL
	600 mg/m3 STEL (skin)
Finland	10 ppm TWA
	42 mg/m3 TWA
	50 ppm STEL
	210 mg/m3 STEL
France	50 ppm TWA
	205 mg/m3 TWA
	100 ppm
	410 mg/m3
Germany	50 ppm TWA
	210 mg/m3 TWA
Greece	50 ppm TWA
	100 ppm STEL
Hungary	208 mg/m3 TWA AK
	415 mg/m3 STEL CK
	(skin)
Ireland	50 ppm TWA
	100 ppm STEL
Italy	50 ppm TWA
	100 ppm STEL
Latvia	10 mg/m3 TWA
Lithuania	50 ppm TWA (IPRD)
	200 mg/m3 TWA (IPRD)
	100 ppm STEL (TPRD)
	400 mg/m3 STEL (TPRD)
Luxembourg	50 ppm TWA
	100 ppm STEL
The Netherlands	410 mg/m3 STEL
	205 mg/m3 TWA
Norway	25 ppm TWA
	100 mg/m3 TWA
	A
	25 ppm STEL
	100 mg/m3 STEL
	(skin)
Poland	300 mg/m3 STEL
	100 mg/m3 TWA
Portugal OELs Data	50 ppm
	100 ppm STEL
Romania	0 ppm TWA
	205 mg/m3 TWA
	100 ppm STEL
	410 mg/m3 STEL
Russia	10 mg/m3 TWA (vapor)
	20 mg/m3 STEL (vapor)
Slovakia	50 ppm TWA
	205 mg/m3 TWA
	410 mg/m3 Ceiling
Slovenia	50 ppm TWA
	210 mg/m3 TWA
	100 ppm STEL
	420 mg/m3 STEL
Spain	50 ppm TWA
	100 ppm STEL
Sweden	50 ppm LLV
	200 mg/m3 LLV
	150 ppm STV
	600 mg/m3 STV
	(skin)
Switzerland	100 ppm STEL
	420 mg/m3 STEL
	50 ppm TWA
	210 mg/m3 TWA
United Kingdom	50 ppm TWA
	208 mg/m3 TWA
	100 ppm STEL
	416 mg/m3 STEL
ACGIH - TLV	50 ppm TWA
	100 ppm STEL

Legend:
ACGIH - American Conference of Industrial Hygienists
TLV - Threshold Limit Value
TWA - Time weighted average
STEL: Short Term Exposure Limit
MAK - Maximum Occupational Exposure Limits
SKIN: Skin Absorption

Biological occupational exposure limits

Component Styrene
Bulgaria
BEI: 600 mg/g Creatinine, DETERMINANT: Mandelic acid and Phenylglyoxylic acid - together in urine, SAMPLING TIME: at the end of exposure or end of shift, in remote exposure - after several shifts
Finland
BEI: 1.2 mmol/L, DETERMINANT: MAPGA in urine, SAMPLING TIME: prior to shift, NOTE: MAPGA equals sum of urinary mandelic and phenylglyoxylic acids
France
BEI: 0.55 mg/L, DETERMINANT: Styrene in venous blood, SAMPLING TIME: end of shift, NOTE: Semi-quantitative (ambiguous interpretation)
BEI: 0.02 mg/L, DETERMINANT: Styrene in venous blood, SAMPLING TIME: prior to shift, NOTE: Semi-quantitative (ambiguous interpretation)
BEI: 800 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: end of shift, NOTE: Non-specific (observed after the exposure to other substances)
BEI: 300 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: prior to shift, NOTE: Non-specific (observed after the exposure to other substances)
BEI: 240 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: end of shift, NOTE: Non-specific (observed after the exposure to other substances)
BEI: 100 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: prior to shift, NOTE
Germany
BEI: 600 mg/g, DETERMINANT: Mandelic acid plus Phenylglyoxylic acid in urine, SAMPLING TIME: end of shift, NOTE: measured as mg/g Creatinine
BEI: 600 mg/g, DETERMINANT: Mandelic acid plus Phenylglyoxylic acid in urine, SAMPLING TIME: end of several shifts, NOTE: measured as mg/g Creatinine; for long-term exposures
Latvia
BEI: 0.8 g/g Creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: end of shift
BEI: 0.55 mg/g, DETERMINANT: Styrene in blood, SAMPLING TIME: end of shift
Romania
BEI: 800 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: end of shift
BEI: 300 mg/g creatinine, DETERMINANT: Mandelic acid in urine, SAMPLING TIME: beginning of second shift
BEI: 100 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: end of shift
BEI: 100 mg/g creatinine, DETERMINANT: Phenylglyoxylic acid in urine, SAMPLING TIME: beginning of second shift
BEI: 0.55 mg/L, DETERMINANT: Styrene in blood, SAMPLING TIME: end of shift
BEI: 0.02 mg/L, DETERMINANT: Styrene in blood, SAMPLING TIME: beginning of second shift
Slovakia
BEI: 600 mg/g creatinine, DETERMINANT: Mandelic acid and phenylglycolic acid in urine, SAMPLING TIME: after all work shifts, NOTE: for long-term exposure
BEI: 600 mg/g creatinine, DETERMINANT: Mandelic acid and phenylglycolic acid in urine, SAMPLING TIME: end of exposure or work shift, NOTE:

Component	Derived No Effect Level (DNEL)	Predicted No Effect Concentration (PNEC)
Styrene	End Use: Workers Exposure Route: Inhalation Exposure Type: Acute, systemic effects Value: 289 mg/m3 (68 ppm) End Use: Workers Exposure Route: Inhalation Exposure Type: Acute, local effects Value: 306 mg/m3 (72 ppm) End Use: Workers Exposure Route: Inhalation Exposure Type: Long term, systemic effects Value: 85 mg/m3 (20 ppm) End Use: Workers Exposure Route: Dermal Exposure Type: Long term, systemic effects Value: 406 mg/kg bw/day End Use: General Population Exposure Route: Inhalation Exposure Type: Acute, systemic effects Value: 174.25 mg/m3 (41 ppm) End Use: General Population Exposure Route: Inhalation Exposure Type: Acute, local effects Value: 182.75 mg/m3 (43 ppm) End Use: General Population Exposure Route: Inhalation Exposure Type: Long term, systemic effects Value: 10.2 mg/m3 (2.4 ppm) End Use: General Population Exposure Route: Dermal Exposure Type: Long term, systemic effects Value: 343 mg/kg bw/day	Fresh water Value: 0.028 mg/l Assessment factor: 10 Sea water Value: 0.0028 mg/l Assessment factor: 100 Water Value: 0.04 mg/l Intermittent Releases Assessment factor: 100 Fresh water sediment Value: 0.614 mg/kg dw Sea sediment Value: 0.0614 mg/kg dw Sewage Treatment Plant Value: 5 mg/l Assessment factor: 100 Soil Value: 0.2 mg/kg dw

Methyl methacrylate	End Use: Workers Exposure Route: Dermal Exposure Type: Acute, local effects Value: 1.5 mg/cm2 End Use: Workers Exposure Route: Dermal Exposure Type: Long term, systemic effects Value: 13.67 mg/kg bw/day End Use: Workers Exposure Route: Inhalation Exposure Type: Long term, systemic	Fresh water Value: 0.94 mg/l Marine water Value: 0.094 mg/l Intermittent releases Value: 0.94 mg/l Sewage Treatment Plant Value: 10 mg/l Fresh water sediment Value: 5.74 mg/kg dw

	effects Value: 210 mg/m3 (51.3 ppm) End Use: Workers Exposure Route: Dermal Exposure Type: Long term, local effects Value: 1.5 mg/cm2 End Use: Workers Exposure Route: Inhalation Exposure Type: Long term, local effects Value: 210 mg/m3 (51.3 ppm) End Use: General Population Exposure Route: Dermal Exposure Type: Acute, local effects Value: 1.5 mg/cm2 End Use: General Population Exposure Route: Dermal Exposure Type: Long term, systemic effects Value: 8.2 mg/kg bw/day End Use: General Population Exposure Route: Inhalation Exposure Type: Long term, systemic effects Value: 74.3 mg/m3 (18.2 ppm) End Use: General Population Exposure Route: Dermal Exposure Type: Long term, local effects Value: 1.5 mg/cm2 End Use: General Population Exposure Route: Inhalation Exposure Type: Long term, local effects Value: 105 mg/m3 (25.7 ppm)	Soil Value: 1.47 mg/kg dw

8.2. Exposure controls

Engineering Controls: Use general ventilation to maintain airborne concentrations to levels that are below regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations. Use explosion-proof equipment.

Personal protective equipment

Eye Protection Safety glasses with side-shields conforming to EN166. If splashes are likely to occur, wear: Tightly fitting safety goggles (EN166). Ensure that eyewash stations and safety showers are close to the workstation location.

Skin Protection: Impervious clothing

Hand Protection: Protective gloves complying with EN 374. Wear chemical-resistant gloves such as polyvinyl alcohol or Viton. Gloves made of nitrile rubber or polyvinyl chloride (PVC) may be used for splash protection and brief or intermittent contact with styrenated polyester resin. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

	Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Respiratory Protection:	None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Wear an approved air-purifying respirator with organic vapor cartridges and particulate filters where airborne concentrations may exceed exposure limits in Section 8 and/or there is exposure to dust or mists due to sanding, grinding, cutting, or spraying. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.
Recommended Filter type:	Type A (EN141) and Type P2 (EN143)

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance:	Blue green Clear Pale White	**Physical State:**	Liquid
Odor:	Pungent	**Odor Threshold:**	0.2ppm (styrene) 0.05 - 0.21 ppm (Methyl Methacrylate)

		Remarks/Method
pH:	Not Applicable	None known
Melting point/Freezing Point:	Not Applicable	None known
Boiling Point/Boiling Range:	100°C - 146°C	None known
Flash Point:	26ºC	Seta closed cup (ISO 3679)
Evaporation Rate:	0.49- 3.1 (BuAc = 1)	None known
Flammability limits in air:		
Upper:	12.5% 6.1% (Styrene)	None known
Lower:	1.1% 1.1% (Styrene)	None known
Vapor Pressure:	6.7 - 27 hPa @ 20°C	None known
Vapor Density:	3.6 - 3.94 (Air = 1)	None known
Specific Gravity:	1.05 - 1.12 @ 23°C	None known
Solubility:	Insoluble in water	None known
Partition coefficient: n-octanol/water:	no data available	None known
Autoignition temperature:	430°C - 490°C	(DIN 51794)
Decomposition temperature:	No data available	None known
Viscosity:	175 - 200 mPa·s @ 23°C	Cone & Plate
Explosive Properties:	No information available	
Oxidizing Properties:	No information available	

9.2. Other information

No information available

10. STABILITY AND REACTIVITY

10.1. Reactivity
Unstable upon depletion of inhibitor.

10.2. Chemical Stability
Stable under normal conditions. Stable under recommended storage conditions

10.3. Possibility of Hazardous Reactions
Polymerization can occur. Hazardous polymerization will occur if contaminated with peroxides, metal salts and polymerization catalysts. Product will undergo hazardous polymerization at temperatures

above 150 F (65 C). Hazardous polymerization may
occur upon depletion of inhibitor - may cause heat and pressure build-up in closed containers.

10.4. Conditions to Avoid
Heat, flames and sparks. Contamination by those materials referred to under Incompatible materials. Unstable upon depletion of inhibitor. Elevated temperatures

10.5. Incompatible materials
Strong acids. Strong oxidizing agents. Metal salts. Polymerization initiators. Copper. Copper alloys. Brass.

10.6. Hazardous Decomposition Products
Hydrocarbons. Carbon monoxide. Carbon dioxide (CO2). Thermal decomposition can lead to release of irritating toxic gases and vapours.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity

Inhalation	Harmful by inhalation. May cause irritation of respiratory tract. Inhalation of high vapour concentrations can cause CNS depression and narcosis.
Eye Contact	Irritating to eyes
Skin Contact	Causes skin irritation. May cause sensitization by skin contact. Prolonged skin contact may defat the skin and produce dermatitis
I**ngestion**	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard if swallowed - can enter lungs and cause damage.

Styrene

LD50 Oral:	= 5000 mg/kg (Rat)
LD50 Dermal:	= > 2000 mg/kg (Rat)
LC50 Inhalation:	= 11.8 mg/l (4 H) Rat

Methyl methacrylate:

LD50 Oral	= 7872 mg/kg (Rat)

Irritation	Irritating to eyes and skin
Corrosivity	Not corrosive
Sensitization:	May cause an allergic skin reaction. Contains methacrylates, which are known to be weak sensitizers. Not sensitizing. May cause sensitization of susceptible persons by skin contact.
Carcinogenic Effects	There is no convincing evidence that styrene possesses significant carcinogenic potential in humans
Repeated Dose Toxicity:	In humans, styrene may cause a transient decrease in color discrimination and effects on hearing. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to defatting properties of the product. May cause damage to the liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled.
Neurological Effects	Repeated or prolonged exposure may cause central nervous system damage.
Mutagenic Effects:	Styrene has given mixed positive and negative results in a number of mutagenicity tests. Styrene was not mutagenic without metabolic activation but gave negative and positive mutagenic results with metabolic activation
Reproductive Toxicity	Product is or contains a chemical which is a known or suspected reproductive hazard. Category 2: Substances which should be regarded as if they impair fertility in humans. Possible risk of impaired fertility. Possible risk of harm to the unborn child. This product may cause adverse reproductive effects..
Target Organ(s):	Liver, Central nervous system (CNS), Respiratory system, skin

Numerical measures of toxicity - Product Information

Unknown acute toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.

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

ATEmix (oral) 16756 mg/kg

ATEmix (dermal) 6706 mg/kg

ATEmix (inhalation-vapour) 36.5 mg/l

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Styrene

Freshwater Algae EC50 0.46 - 4.3 mg/L (Pseudokirchneriella subcapitata) (72h)
EC50 = 1.4 mg/L (Pseudokirchneriella subcapitata) (72h)

Freshwater Fish LC50 19.03-33.53 mg/L (Lepomis macrochirus) (96 h) static
LC50 3.24-4.99 mg/L (Pimephales promelas) (96 h) flow-through
LC50 58.75-95.32 mg/L (Poecilia reticulata) (96 h) static
LC50 6.75-14.5 mg/L (Pimephales promelas) (96 h) static

Aquatic Invertebrates EC50 3.3 - 7.4 mg/L (Daphnia magna) (48h)

Methyl methacrylate

Freshwater Fish LC50 243 - 275 mg/L (Pimephales promelas) (96 h) flow-through
LC50 125.5 - 190.7 mg/L (Pimephales promelas) (96 h) static
LC50 170 - 206 mg/L (Lepomis macrochirus) (96 h) flow-through
LC50 153.9 - 341.8 mg/L (Lepomis macrochirus) (96 h) static
LC50 > 79 mg/L (Oncorhynchus mykiss) (96 h) flow-through
LC50 > 79 mg/L (Oncorhynchus mykiss) (96 h) static
LC50 326.4 - 426.9 mg/L (Poecilia reticulata) (96 h) static

Aquatic Invertebrates EC50 = 69 mg/L (Daphnia magna) (48h)

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

Bioaccumulation is unlikely

Styrene

Log Kow 2.95
Bioconcentration factor (BCF) 74

Methyl methacrylate

Log Kow 0.7

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products

This material and its container must be disposed of as hazardous waste. Dispose of in accordance with local regulations. Can be incinerated, when in compliance with local regulations.

Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal
EWC Waste Disposal No	07 00 00 WASTES FROM ORGANIC CHEMICAL PROCESSES 07 02 00 Wastes from MFSU of plastics, synthetic rubber and man-made fibres 07 02 99 Wastes not otherwise specified

14. TRANSPORT INFORMATION

ADR/RID

UN-No	UN1866
Proper Shipping Name	RESIN SOLUTION
Hazard Class	3
Packing Group	II
Environmental hazard	None
Classification Code	F1
Hazard Identification No:	
(kemler No.)	33
Tunnel Restriction Code	D/E
ADR Exception	This material meets the viscosity criteria specified in ADR 2.2.3.1.5 and may be classed as "not dangerous" when packaged in containers of less than 450 liters.

IMDG/IMO

UN-No	UN1866
Proper Shipping Name	RESIN SOLUTION.
Hazard Class	3
Packing Group	PG II
Environmental hazard	None
EmS No.	F-E,S-E
IMDG Exception	This material meets the viscosity criteria specified in IMDG Code 2.3.2.5 and may be exempt from the marking, labelling and package testing requirements if transported in containers of 30 liters or less.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available.

IATA

UN-No	UN1866
Proper Shipping Name	RESIN SOLUTION
Hazard Class	3
Packing Group	II
Packing Instructions	355;366

15. REGULATORY INFORMATION

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

Denmark
List of substances and processes that are considered to be carcinogenic

Component	Status
Styrene (CAS #: 100-42-5)	Present

Additional information
Must not be used by youngsters under the age of 18, ref. the notification from the Ministry of Labour regarding work by youngsters. The user must have undergone special training approved by the Labour Inspection Authority (AT) in order to work with products containing carcinogenic substances.

Germany
WGK Classification (VwVwS)
Hazardous to water/Class 2

Netherlands

List of Carcinogens, Mutagens and Reproductive Toxins
No information available
No information available

Water Hazard Class
10-May cause long-term adverse effects in the aquatic environment.

International Inventories

TSCA Inventory Status:	All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.
Canadian Inventory Status:	All components of this material are listed on the Canadian Domestic Substances List (DSL).
Australian Inventory Status:	This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances. This product contains one or more chemicals currently not on the Australian Inventory of Chemical Substances.
Korean Inventory Status:	This product contains only chemicals which are currently listed on the Korean Chemical Substances List. This product contains one or more chemicals currently not on the Korean Chemical Substances List.
Philippine Inventory:	This product contains one or more chemicals currently not on the Philippine Inventory of Chemicals and Chemical Substances..
Japan ENCS:	This product contains only chemicals that are currently listed on the Japanese Inventory of Existing and New Chemical Substances. This product contains one or more chemicals currently not on the Japanese Inventory of Existing and New Chemical Substances.
Chinese IECS:	This product contains only chemicals that are currently listed on the Chinese Inventory of Existing Chemical Substances. This product contains one or more chemicals currently not on the Chinese Inventory of Existing Chemical Substances.
New Zealand Inventory:	This product contains only chemicals which are currently listed on the New Zealand Inventory of Chemicals. This product contains one or more chemicals currently not on the New Zealand Inventory of Chemicals.

Product Registrations

Norway	Not Applicable
Denmark	PR-No.: 4081101

16. OTHER INFORMATION

Classification procedure:

Acute toxicity - Inhalation (Vapours)	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Skin sensitisation	Calculation method
Reproductive Toxicity	Weight of evidence
Specific target organ toxicity (single exposure)	Calculation method
Specific target organ toxicity (repeated exposure)	Calculation method
Chronic aquatic toxicity	Calculation method
flammable liquid	On basis of test data

Full text of H-Statements referred to under sections 2 and 3
H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
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 if inhaled
H412 - Harmful to aquatic life with long lasting effects

Denmark Arbejdstilsynet Order no. 908 of 27 September 2005 with subsequent amendments

Revision date	**14.11.2018**
Revision Note	**SDS sections updated: 14.11.2018**

This safety data sheet complies with the requirements of regulation (EC) No. 1272/2008

Disclamer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publlications. The information given is deisgned only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
End of safety data sheet.

MSDS 405-210 Clear Casting Resin