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

1.1 Product identification:

Product name:	Polyester R 65.15 X
UFI code:	WX33-C0TJ-J00D-GHU4

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

Uses:	**unsaturated polyester resin - styrene solution**
Industrial use [SU3, SU12]:	Production of UP / VE resins and formulated resins. FRP production in an industrial environment, using UP / VE resins and/or formulated resins. ERC: 2, 6d. PROC: 1, 10, 12, 13, 14, 15, 3, 4, 5, 7, 8a, 8b, 9.
Professional use [SU12, SU22]:	FRP production in a professional environment, using UP / VE resins and/or formulated resins. ERC: 8b, 8c, 8f. PROC: 1, 10, 11, 3, 4, 5, 8a.
Uses advised against:	
Consumer use:	Use of liquid UP resins by consumers for repair work. Consumer use of paste resins as fillers / putties.

1.3 Details of the supplier of the safety data sheet:

Responsible distributor :	ASSYST bvba / A.S.O.W. bvba Hellegatstraat 13a 2590 Berlaar Belgium Tel: +32 495 50 61 14 / +32 496 83 70 27 Website: www.assyst.org / www.artsuppliesonweb.com Email: ao@assyst.org / vera.opsommer@assyst.org

1.4 Emergency phone number:

For Belgium:	Call the **Poison Control Center (070 245 245 - free)**, if not available: **02 264 96 30** (normal rate) or your doctor. In life-threatening situations, always call the European emergency number **112**.
NHS 24 Direct	For help from a GP, visit your GP surgery's website, use an online service to contact your GP, or call the surgery. **For urgent medical help**, use the NHS 111 online service, or **call 111** if you are unable to get help online. **For life-threatening emergencies, call 999** for an ambulance. There is more information about getting medical help on the NHS website.

SECTION 2: Identification of hazards

2.1 Classification of the substance or mixture:

Classification according to directive (EC) No 1272/2008 and its amendments.

The product is classified as hazardous under the provisions of Regulation (EC) 1272/2008 (CLP) (and subsequent amendments and modifications).

Therefore, a safety data sheet for the product is required in accordance with the provisions of Regulation (EU) 2020/878.

Any other information concerning health and/or environmental hazards is shown under chapters 11 and 12 of this sheet.

Classification in accordance with Regulation (EC) No 1272/2008 as amended.

Health hazards

Flammable liquid, category 3 - H226 Flammable liquid and vapour.

Reproductive toxicity, category 2 - H361d Suspected of damaging the unborn child.

Specific target organ toxicity on - repeated exposure, category 1 - H372 Causes damage to organs on prolonged or repeated exposure.
Eye irritation, category 2 - H319 Causes severe eye irritation.
Skin irritation, category 2 - H315 Causes skin irritation.
Specific target organ toxicity for - single exposure, category 3 - H335 May cause respiratory tract irritation.
Skin sensitisation, category 1A - H317 May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity category 3 - H412 Harmful to aquatic organisms, with long-lasting effects.
For the full text of H phrases referred to in this section, see section 16.

2.2 Labelling elements:

Labelling according to regulation (EC) No 1272/2008 [CLP/GHS]:

Hazard pictograms:

Signal word Danger.

Hazardous ingredients to be declared on the label:

- Styrene
- Maleic anhydride
- Phthalic Anhydride

Hazard statements:
H226 Flammable liquid and vapour.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs with prolonged or repeated exposure.
H319 Causes severe eye irritation.
H315 Causes skin irritation.
H335 May cause respiratory tract irritation.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long-lasting effects.

Precautions
Prevention:
P210 Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. Do not smoke.
P280 Wear protective gloves/clothing and eye/face protection.
P370+P378 In case of fire: extinguish with carbon dioxide, foam, chemical powder.
P501 Dispose of the product and / or container in accordance with national regulations.
P261 Avoid inhalation of dust / fumes / gas / mist / vapour / spray.
P201 Before using, refer to the special instructions.
Action:
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if possible. Continue rinsing.
P301+P330+P331 IF INHALED: Rinse mouth. DO NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): remove contaminated clothing immediately. Rinse skin with water [or shower off].
P308+P313 AFTER (possible) exposure: consult a doctor.
P241 Use explosion-proof, explosion-proof electrical equipment, ventilation and lighting equipment; the same applies to all material handling equipment.

2.3 Other hazards:

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.
The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

SECTION 3: Composition and information on ingredients

3.2 Mixtures:

Chemical Name	CAS No. EC No. Index no. REACH Registration number	Classification (Regulation (EC) No 1272/008)	Concentration (%)
Styrene	100-42-5 202-851-5 601-026-00-0 01-2119457861-32	Flam. Liq. 3 H226, Repr. 2 H361d, Acute Tox. 4 H332, STOT RE 1 H372, Asp. Tox. 1 H304, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Aquatic Chronic 3 H412, Note on classification according to Annex VI of the CLP Regulation: D LC50 Inhalation vapour: 11.8 mg/l/4h	41 ≤ x < 42
Phthalic Anhydride	85-44-9 201-607-5 607-009-00-4 01-2119457017-41	Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317 LD50 Oral: 1530 mg/kg	0,5 ≤ x < 1
Xylene, mixture of isomers	1330-20-7 215-535-7 601-022-00-9 01-2119488216-32	Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Asp. Tox. 1 H304, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Aquatic Acute 1 H400 M=1, Aquatic Chronic 3 H412, Note on classification according to Annex VI of the CLP Regulation: C STA Dermal: 1100 mg/kg, STA Inhalation vapour: 11 mg/l	0,1 ≤ x < 0,2
Maleic anhydride	108-31-6 203-571-6 607-096-00-9 01-2119472428-31	Acute Tox. 4 H302, STOT RE 1 H372, Skin Corr. 1B H314, Eye Dam. 1 H318, Resp. Sens. 1 H334, Skin Sens. 1A H317, EUH071 Skin Sens. 1A H317: ≥ 0.001% LD50 Oral: 1090 mg/kg	0,05 ≤ x < 0,08
Dipropylene glycol Monomethyl ether	34590-94-8 252-104-2 - 01-2119450011-60	Substance subject to a workplace exposure limit within the Community.	0,02 ≤ x < 0,05
Hydroquinone	123-31-9 204-617-8 604-005-00-4 01-2119524016-51	Carc. 2 H351, Muta. 2 H341, Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=1 LD50 Oral: 367 mg/kg	0 ≤ x < 0,03

The complete text of the hazard statements (H) is shown under section 16 of the sheet.
Styrene: The range refers to the maximum content of styrene.

SECTION 4: First aid measures

4.1 Description of first-aid measures:

Eyes:

Remove contact lenses, if present.
Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully.
Get medical advice/attention.

Skin:

Remove contaminated clothing.
Immediately shower off.
Consult a doctor immediately.

Ingestion:

Make them drink as much water as possible.
Consult a doctor immediately.
Do not induce vomiting if not expressly authorised by the doctor.

Inhalation:

Warn a doctor immediately.
Move the victim into fresh air as far away from the accident scene as possible.
In case of respiratory arrest, apply artificial respiration.
Take suitable precautions for the rescuer.

4.2 Main acute and delayed symptoms and effects:

Specific information on symptoms and effects caused by the product are unknown.

4.3 Indication of immediate medical attention and special treatment required:

Information not available.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media:

Suitable extinguishing agents

The extinguishing agents are: carbon dioxide, foam, chemical powder.
For leaks and spills of the product that have not ignited, water spray can be used to disperse flammable vapours and protect people working to stop the leak.

Unsuitable extinguishing agents

Do not use water jets.
Water is not effective to extinguish the fire, but it can be used to cool closed containers exposed to fire to prevent bursting and explosions.

5.2 Special hazards arising from the substance or mixture:

When heated or on fire, the product may develop toxic fumes.

In case of fire, the following can be released:

Carbon monoxide (CO)
Carbon dioxide (CO)
Under certain fire conditions, traces of other harmful substances cannot be ruled out.

5.3 Advice for firefighters:

General information

Cool containers with water jets to prevent product decomposition and the development of substances potentially hazardous to health.
Always wear full fire protection equipment.
Collect extinguishing water that should not be discharged into the sewerage system.
Dispose of contaminated water used for extinguishing and fire residues according to applicable regulations.

Equipment:

Normal firefighting clothing, such as open-circuit breathing apparatus (EN 137), flame-retardant suit (EN469), flame-retardant gloves (EN 659) and firefighter boots (HO A29 or A30).

SECTION 6: Measures in case of accidental release of the substance or mixture

6.1 Personal precautions, protective equipment and emergency procedures:

Stop the leak if there is no danger.
Wear suitable protective equipment (including personal protective equipment referred to in section 8 of the safety data sheet) to prevent contamination of skin, eyes and personal clothing.
These indications apply to both workers and emergency interventions.
Keep unprotected persons away.
Use explosion-proof equipment.
Remove all sources of ignition (cigarettes, flames, sparks, etc.) or heat from the place where the leak occurred.

6.2 Environmental precautions:

Prevent product from entering drains, surface water, groundwater.

6.3 Methods and materials for containment and cleaning:

Aspirate the spill into a suitable container.
Assess the compatibility of the container to be used with the product, check section 10.
Absorb the rest with inert absorbent material.
Ensure adequate ventilation of the area affected by the leak.
Contaminated material should be disposed of in accordance with the provisions of section 13.

6.4 Reference to other sections:

See chapter 7 for information on safe handling.
All information regarding personal protection and disposal is given in sections 8 and 13.

SECTION 7: Handling and storage:

7.1 Precautions for safe handling of the substance or mixture:

Store in a cool, humid place in perfectly sealed containers.
Protect from heat and direct sunlight.
Precise ventilation/exhaustion at the workplace.
Avoid aerosol formation.
Ensure good ventilation, including at floor level (fumes are heavier than air).

Information in case of fire and explosion:

Keep away from heat sources, no smoking.
Use explosion-proof equipment/tools and non-sparking tools.
Flammable mixtures may form in emptied containers.

7.2 Conditions for safe storage, including incompatibilities:

Storage:

Warehouse and container requirements:

Suitable material for containers and pipes: stainless steel.
Only store in original containers.
Take measures against electrostatic charges.
The vapours released during accidental spillage are heavier than air and may cause fire and/or explosion.
They can accumulate in low-lying areas or spread to ground level.
Ensure the presence of leakage monitors and check the absence of ignition sources.

Information on mixed storage:

Store separately from catalysts (organic peroxides).

Further information on storage conditions:

Keep cool, heating causes pressure increases and explosion hazard.
Store the product in the original, hermetically sealed containers, away from sunlight.
Storage outside, especially in translucent plastic containers (such as PE polyethylene or PP polypropylene), can cause the formation of freezing and significantly reduces (up to several weeks) the stability of the product.
The ideal storage temperature is 23°C.

Heating causes pressure increases and risks of explosions.
Store the containers in a well-ventilated place.
Proceed with caution to reopen barrels that have already been started.
Storage class TRGS 510 (Germany):
3
7.3 Specific end use:
Stir before use.
The material, stored in the original containers, protected from sunlight and at a temperature of 23°C, has a shelf life of 6 months from the date of delivery.

SECTION 8: Exposure controls/personal protection measures

8.1 Control parameters:
References Regulatory affairs:

BGR	България	НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. ЗА ЗАЩИТА НА РАБОТЕЩИТЕ ОТ РИСКОВЕ, СВЪРЗАНИ С ЕКСПОЗИЦИЯ НА ХИМИЧНИ АГЕНТИ ПРИ РАБОТА (изм. ДВ. бр.5 от 17 Януари 2020г.)
CZE	Czech Republic	Nařízení vlády č. 246/2018 Sb. Nařízení vlády, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů
DEU	Deutschland	TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST)
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
GRC	Ελλάδα	Π. Δ. 26/2020 (ΦΕΚ 50/Α` 6.3.2020) Εναρμόνιση της ελληνικής νομοθεσίας προς τις διατάξεις των οδηγιών 2017/2398/ΕΕ, 2019/130/ΕΕΕ και 2019/983/ΕΕ "για την τροποποίηση της οδηγίας 2004/37/ΕΚ ''σχετικά με την προστασία των εργαζομένων από τους κινδύνους που συνδέονται με την έκθεση σε καρκινογόνους ή μεταλλαξιγόνους παράγοντες κατά την εργασία'""
HRV	Hrvatska	Pravilnik o izmjenama i dopunama Pravilnika o zaštiti radnika od izloženosti opasnimkemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NLD	Netherlands	Regulation of the State Secretary for Social Affairs and Employment of 13 July 2018, 2018-0000118517 amending the Working Conditions Regulations in connection with the implementation of Directive 2017/164 in Annex XIII
PRT	Portugal	Decreto-Lei n.º 1/2021 de 6 de janeiro, valores-limite de exposição profissional indicativos para os agentes químicos. Decreto-Lei n.º 35/2020 de 13 de julho, proteção dos trabalhadores contra os riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos
POL	Polska	ROZPORZĄDZENIE MINISTRA RODZINY, PRACY I POLITYKI SPOŁECZNEJ z dnia 12 czerwca 2018 r
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum şi pentru modificarea şi completarea hotărârii guvernului nr. 1.093/2006
SVK	Slovensko	Nariadenie vlády č. 33/2018 Z. z. Nariadenie vlády Slovenskej republiky, ktorým sa mení a dopĺňa nariadenie vlády Slovenskej republiky č. 355/2006 Z. z. o ochrane zamestnancov pred rizikami súvisiacimi s expozíciou chemickým faktorom pri práci v znení neskorších predpisov
SVN	Slovenija	Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu (Uradni list RS, št. 100/01, 39/05, 53/07, 102/10, 43/11 - ZVZD-1, 38/15, 78/18 in 78/19)
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition, published 2018)
EU	OEL EU	Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive

		2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2020

Styrene

Threshold limit

Type	State	TWA/8h		STEL 15/min		Comments
		mg/m³	ppm	mg/m³	ppm	
TLV	CZE		24		94	
AGW	DEU	86	20		86	
VLA	ESP	86	20	172	40	
VLEP	FRA	100	23	200	46	
VLEP	ITA	85	20	170	40	A4, IBE
NDS/NDSCh	POL		12		47	
WEL	GBR	430	100	1080	250	
TLV-ACGIH		42	10	85	20	

Predicted no-effect concentration in the environment - PNEC

Reference value in freshwater	0,028 mg/l
Reference value in seawater	0,014 mg/l
Reference value for sediments in freshwater	0,614 mg/kg/d
Reference value for sediments in seawater	0,307 mg/kg/d
Normal value for water, intermittent release	0,04 mg/l
Reference value for micro-organisms STP	5 mg/l
Reference value for terrestrial compartment	0,2 mg/kg/d

Health - Derived no-effect doses - DNEL / DMEL

	Impact on consumers				Effects on the employee			
Route of exposure	Locally acute	System acute	Local chronic	System Chronic	Locally acute	System acute	Local chronic	System Chronic
Oral				2,1 mg/kg bw/d				
Inhalation	10 mg/m³	174,25 mg/m³	182,75 mg/m³	10,2 mg/m³	306 mg/m³	289 mg/m³	306	85 mg/m³
Skin				343 mg/kg/d				406 mg/kg/d

Phthalic Anhydride

Threshold limit

Type	State	TWA/8h		STEL 15/min		Comments
		mg/m³	ppm	mg/m³	ppm	
VLEP	ITA	0.002		0.005	40	INHALATION

Predicted no-effect concentration in the environment - PNEC

Reference value in freshwater	1 mg/l
Reference value in seawater	0,1 mg/l
Reference value for sediments in freshwater	3,8 mg/kg/d
Reference value for sediments in seawater	0,38 mg/kg/d
Reference value for water, intermittent release	5,6 mg/l
Reference value for micro-organisms STP	10 mg/l
Reference value for terrestrial compartment	0,173 mg/kg/d

Health - Derived no-effect doses - DNEL / DMEL

	Impact on consumers				Effects on the employee			
Route of exposure	Locally acute	System acute	Local chronic	System Chronic	Locally acute	System acute	Local chronic	System Chronic
Oral				5 mg/kg bw/d				
Inhalation				8,7 mg/m³				49,4 mg/m³
Skin				5 mg/kg bw/d				14 mg/kg bw/d

Maleic anhydride

Threshold limit

Type	State	TWA/8h		STEL 15/min		Comments	
		mg/m³	ppm	mg/m³	ppm		
OEL	EU	0.01	0.1				
TLV-ACGIH		0.4	0.01				

Predicted no-effect concentration in the environment - PNEC

Reference value in freshwater	0.038 mg/l
Reference value in seawater	0.004 mg/l
Reference value for sediments in freshwater	0.296 mg/kg/d
Reference value for sediments in seawater	0.03 mg/kg/d
Reference value for micro-organisms STP	4.46 mg/l
Reference value for terrestrial compartment	0.037 mg/kg/d

Health - Derived no-effect doses - DNEL / DMEL

	Impact on consumers				Effects on the employee			
Route of exposure	Locally acute	System acute	Local chronic	System Chronic	Locally acute	System acute	Local chronic	System Chronic
Oral		0.1 mg/kg bw/d		0.06 mg/kg bw/d				
Inhalation			0.08 mg/m³	0.05 mg/m³	0.2 mg/m³	0.2 mg/m³	0.081 mg/m³	0.081 mg/m³
Skin		0.1 mg/kg bw/d		0.1 mg/kg bw/d		0.2 mg/kg bw/d		0.2 mg/kg bw/d

Hydroquinone

Threshold limit

Type	State	TWA/8h		STEL 15/min		Comments	
		mg/m³	ppm	mg/m³	ppm		
TLV	CZE	2		4		SKIN	
VLA	ESP	2					
VLEP	FRA	2					
TLV	GRC	2		4			
TGG	NLD	2					
NDS/NDSCh	POL	1		2			
NOEL	SVK	2					
WEL	GBR	0.5					
OEL	EU	0.5					

Predicted no-effect concentration in the environment - PNEC

Reference value in freshwater	0.00057 mg/l
Reference value in seawater	0.000057 mg/l
Reference value for sediments in freshwater	0.0049 mg/kg
Reference value for sediments in seawater	0.00049 mg/kg
Reference value for water, discontinuous emission	0.00134 mg/l
Reference value for micro-organisms STP	0.00071 mg/l
Reference value for terrestrial compartment	0.00064 mg/kg

Health - Derived no-effect doses - DNEL / DMEL

	Impact on consumers				Effects on the employee			
Route of exposure	Locally acute	System acute	Local chronic	System Chronic	Locally acute	System acute	Local chronic	System Chronic
Oral				0.6 mg/kg bw/d				
Inhalation				1.05 mg/m³				2.1 mg/m³
Skin				1.66 mg/kg bw/d				3.33 mg/kg bw/d

Xylene, mixture of isomers

Threshold limit

Type	State	TWA/8h		STEL 15/min		Comments	
		mg/m³	ppm	mg/m³	ppm		
OEL	EU	221	50	442	100		

Predicted concentration with no effect in the environment - PNEC

Reference value in freshwater	0.327 mg/l
Reference value in seawater	0.327 mg/l
Reference value for sediments in freshwater	12.46 mg/kg
Reference value for sediments in seawater	12.46 mg/kg
Reference value for water, discontinuous emission	0.32 mg/l
Reference value for micro-organisms STP	6.58 mg/l
Reference value for terrestrial compartment	2.31 mg/kg

Health - Derived no-effect doses - DNEL / DMEL

	Impact on consumers				Effects on the employee			
Route of exposure	Locally acute	System acute	Local chronic	System Chronic	Locally acute	System acute	Local chronic	System Chronic
Oral				12,5 mg/kg bw/d				
Inhalation	260 mg/m³	260 mg/m³	65.3 mg/m³	65.3 mg/m³	442 mg/m³	442 mg/m³	221 mg/m³	221 mg/m³
Skin				125 mg/kg bw/d				212 mg/kg bw/d

Dipropylene glycol Monomethyl ether

Threshold limit

Type	State	TWA/8h		STEL 15/min		Comments	
		mg/m³	ppm	mg/m³	ppm		
TLV	BGR	308	50			SKIN	
TLV	CZE	270	44.55	550	90.75	SKIN	
AGW	DEU	310	50	310	50		
MAK	DEU	310	50	310	50		
VLA	ESP	308	50			SKIN	
VLEP	FRA	308	50			SKIN	
TLV	GRC	600	100	900	150		
GVI/KGVI	HRV	308	50			SKIN	
VLEP	ITA	308	50			SKIN	
TGG	NLD	300					
VLE	PRT	308	50			SKIN	
NDS/NDSCh	POL	240		480		SKIN	
NPEL	SVK	308	50			SKIN	
MV	SVN	308	50			SKIN	
WEL	GBR	308	50			SKIN	
OEL	EU	308	50	909	150	SKIN	
TLV-ACGIH		606	100	909	150	SKIN	

Predicted no-effect concentration in the environment - PNEC

Reference value in freshwater	19 mg/l
Reference value in seawater	1.9 mg/l
Reference value for sediments in freshwater	70.2 mg/kg
Reference value for sediments in seawater	7.02 mg/kg
Reference value for water, discontinuous emission	190 mg/l
Reference value for micro-organisms STP	4168 mg/l
Reference value for terrestrial compartment	2.74 mg/kg

Health - Derived no-effect doses - DNEL / DMEL

	Impact on consumers				Effects on the employee			
Route of exposure	Locally acute	System acute	Local chronic	System Chronic	Locally acute	System acute	Local chronic	System Chronic

Oral				36 mg/kg bw/d				
Inhalation				32.2 mg/m³				308 mg/m³
Skin				121 mg/kg bw/d				283 mg/kg bw/d

Legend:
(C) = CEILING ; INHAL = Inhalable fraction ; RESP = Inhalable fraction ; THORA = Thoracic fraction.
VND = identified hazard but no DNEL/PNEC available ; NEA = no expected exposure ; NPI = no identified hazard;
LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

8.2 Exposure control measures:

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.
In work environments it is suggested to evaluate the need to use ear protectors since the ototoxic action of STYRENE is amplified in the presence of noise and by the simultaneous presence of several ototoxic substances (see Section 11).
Provide an emergency shower with face and eye wash station.
Exposure levels must be kept as low as possible to avoid significant build-up in the organism.
Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

Personal protection:

Protective gloves

The glove material must be impermeable and stable against the product/substance/formulation.
Selection of glove material considering breakthrough times, permeation rates and degradation.

Glove material

Choosing suitable gloves depends not only on the material, but also on other quality characteristics that vary from manufacturer to manufacturer.
As the product represents a formulation of multiple substances, the stability of the glove materials does not it can be calculated in advance and must be tested before use.
Fluorinated rubber (Viton)
Nitrile rubber
Chloroprene rubber
Recommended material thickness:> = 0.2 mm

Penetration time of glove material

Ask the exact breakthrough time to be respected from the glove supplier.
For continuous contact, gloves made of the following materials are suitable:
Fluorinated rubber (Viton)
Recommended material thickness:> = 0.7 mm

Skin protection

Wear long-sleeved workwear and safety footwear for professional use category III (ref. Regulation 2016/425 and standard EN ISO 20344).
Wash with soap and water after removing clothes.
Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

Eye protection

Wear airtight protective goggles (see standard EN 166).
In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

Respiratory protection

If the threshold value (e.g. TLV-TWA) of the substance or of one or more substances present in the product is exceeded, it is advisable to use a type A filtered mask, the class (1, 2 or 3) of which is chosen on the basis of the concentration limit. (ref. standard EN 14387).
In the presence of gases or vapours of various kinds and/or gases or vapours with particles (aerosols, smoke, mist, etc.), combination filters should be used.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered.
The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138).
For a correct choice of respiratory protection device, see standard EN 529.

Environmental exposure controls

Emissions from production processes, including emissions from ventilation equipment, should be monitored as part of compliance with environmental protection legislation.
Product residues must not be disposed of uncontrolled in wastewater or waterways.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical state:	liquid
Colour:	variable
Odour:	characteristic
Odour threshold value:	0.1 ppm. Substance: Styrene
Melting/freezing point:	Not determined
Initial boiling point:	145°C. Substance: Styrene
Flammability:	not applicable
Lowest explosive limit:	1.2 % (v/v)
Highest explosion limit:	8.9 % (v/v)
Flash point:	31°C. Method: Closed vessel. Substance: Styrene
Self-ignition temperature:	480°C. Substance: Styrene
Decomposition temperature:	Not applicable
pH:	Not applicable. Reason for absence of given: the mixture is not soluble (in water)
Kinematic viscosity:	140-200 mm2/s. Mode: Kinematics. Note: Thixotropic Temperature: 25°C
Dynamic viscosity:	160-220 mPas. Mode: Dynamic. Note: Thixotropic Temperature: 25°C
Solubility:	slightly soluble. Note: in water Temperature: 20°C
Partition coefficient n-octanol/water:	Not applicable
Vapour pressure:	6.67 hPa. Substance: Styrene
Density and/or relative density:	1.1 g/cm³ Temperature: 20°C
Relative vapour density:	3.6. Note:(air = 1) Temperature: 20°C
Particle characteristics:	Not applicable

9.2 Other information

Information on physical hazard classes:

Information not available

Other safety features:

Evaporation rate:	Not applicable
VOC (Directive 2010/75/EC):	41.79 % - 459.68 g/litre

VOC (volatile carbon):	38.56 % - 424.19 g/litre
Explosive properties:	Product is not explosive, but formation of explosive vapour/air mixtures is possible.

SECTION 10: Stability and reactivity

10.1 Reactivity:
No other information available.
Dipropylene glycol Monomethyl ether
Forms peroxides with: air.
10.2 Chemical Stability:
Thermal degradation / conditions to be avoided:
The product does not decompose if handled and stored according to standards.
10.3 Potential Hazardous Reactions:
Reactions with oxidants.
Hazardous polymerization may occur under certain conditions, including increased heat, even at low concentrations of inhibitors and oxygen.
Dipropylene glycol Monomethyl ether
May react violently with: strong oxidising agents.
10.4 Conditions to avoid:
No other information available
Dipropylene glycol Monomethyl ether
Avoid exposure to: heat sources.
Possibility of explosion.
10.5 Chemically Interacting Materials:
Acids, caustic soda, metal salts, such as iron and aluminium chlorides, peroxides, oxidising materials in general.
10.6 Hazardous Decomposition Products:
Irritant gases/vapours, carbon oxides

SECTION 11: Toxicological information

In the absence of toxicological test data of the product, the possible human health hazards of the product are assessed on the basis of the properties of the substances contained therein, according to the criteria provided by the relevant legislation on classification.
For this reason, consider the concentration of individual potentially hazardous substances shown in section 3 when assessing the toxicological consequences of exposure to the product.
11.1 Information on toxicological effects:
Metabolism, kinetics, mode of action and other information
Information not available
Information on likely routes of exposure
Information not available
Delayed and immediate effects as well as chronic effects from short-term and long-term exposure
Information not available
Interactive effects
Information not available
Acute toxicity

ATE (Inhalation) of the mixture	> 20 mg/l
ATE (oral) of the mixture	Not classified (no relevant ingredient)
ATE (Dermal) of the mixture	Not classified (no relevant ingredient)
Styrene	
LD50 (Oral)	5000 mg/kg rat
LD50 (Dermal)	> 2000 mg/kg rat
LC50 (Inhalation vapours)	11.8 mg/l/4h rat (vapour)

Phthalic Anhydride	
LD50 (Oral):	1530 mg/kg (rat)
LC50 (Inhalation mists/powders):	> 2,14 mg/l/4h (rat)
Maleic anhydride	
LD50 (Oral)	1090 mg/kg rat
LD50 (Dermal)	2620 mg/kg rabbit
LC50 (Inhalation vapours)	4.35 mg/l/1h rat (vapour)
Hydroquinone	
LD50 (Oral)	367 mg/kg rat
LD50 (Dermal)	> 2000 mg/kg rabbit (OECD 402)
Xylene, mixture or isomers	
LD50 (Oral)	5627 mg/kg rat
LD50 (Dermal)	> 5000 mg/kg rabbit
STA (Dermal)	1100 mg/kg estimate in Table 3.1.2. of Annex I of the CLP Regulation (data used to calculate the acute toxicity estimate of the mixture)
LC50 (Inhalation vapours)	6700 ppm/4h rat
Dipropylene glycol Monomethyl ether	
LD50 (Oral)	> 5000 mg/kg rat
LD50 (Dermal)	> 9500 mg/kg rat
LC50 (Inhalation vapours)	> 275 mg/l/7h rat

Skin corrosion/irritation
Causes skin irritation
Serious eye damage/eye irritation
Causes severe eye irritation
Respiratory/skin sensitisation
Sensitising to the skin
Mutagenicity in gametes
Does not meet the criteria for classification in this hazard class
Carcinogenicity
Does not meet the criteria for classification in this hazard class
Reproductive toxicity
Suspected of harming the unborn child
Styrene
Inhalation NOAEC 500 ppm (rat)
Stot - at single exposure
May cause respiratory tract irritation
Stot - on repeated exposure
Causes damage to organs
Styrene
NOAEC inhalation (ototoxicity) 500 ppm (rat)
20 ppm (human)
Auditory system. Repeated inhalation exposure to low doses of the substance causes irreversible changes in auditory function, demonstrated in both animal and human studies (ECHA RAC).
In several occupational studies, the lowest exposure levels associated with hearing impairment are at or below the OEL values. The ototoxic effect is enhanced by the presence of noise (even at relatively low levels, e.g. below 85dBA) and by the presence simultaneous use of several ototoxic substances.
Aspiration hazard
Does not meet the criteria for classification in this hazard class Viscosity: 500-700 mPas.
11.2. Information on other hazards

Based on available data, the product does not contain any substances included in the main European lists of potential or suspected endocrine disruptors with human health effects being assessed.

SECTION 12: Ecological information

This product is dangerous for the environment and the aquatic organisms.
In the long term, it have negative effects on aquatic environment.
12.1 Toxicity:

Styrene	
LC50 - Fish	4.02 mg/l/96h Pesci - Pimephales promelas
EC50 - Crustaceans	4.7 mg/l/48h Invertebrati - Daphnia magna
EC50 - Algae / Aquatic plants	4.9 mg/l/72h Algae - Selenastrum Capricornutum
Chronic NOEC Fish	1.01 mg/l Invertebrati - Daphnia magna
Phthalic Anhydride	
EC50 - for Crustacea	640 mg/l/48h
Chronic NOEC for Fish	10 mg/l (60 days)
Chronic NOEC for Algae / Aquatic Plants	100 mg/l (72 h)
Maleic anhydride	
LC50 - Fish	75 mg/l/96h
EC50 - Crustaceans	42.81 mg/l/48h
EC50 - Algae / Aquatic plants	74.35 mg/l/72h
Chronic NOEC Crustaceans	10 mg/l 21 d
Hydroquinone	
LC50 - Fish	0.044 mg/l/96h Danio rerio
EC50 - Crustaceans	0.13 mg/l/48h Daphnia magna
EC50 - Algae / Aquatic plants	0.33 mg/l/72h Pseudokirchnerella subcapitata (growth rate)
Chronic NOEC Crustaceans	0.0057 mg/l Daphnia magna
Chronic NOEC Algae/ Aquatic plants	0.019 mg/l Pseudokirchneriella subcapitata
Xylene, mixture of isomers	
LC50 – Fish	> 2,6 mg/l/96h
EC50 - Crustaceans	10,389 mg/l/48h
EC10 for Crustacea	> 16 mg/l/28d
EC10 for Algae / Aquatic Plants	1,91 mg/l/21d
Chronic NOEC Fish	> 1.3 mg/l 56 day
Chronic NOEC for Algae / Aquatic Plants	1,57 mg/l
Dipropylene glycol Monomethyl ether	
EC50 - Crustaceans	1919 mg/l/48h Daphnia magna
EC50 - Algae / Aquatic plants	1000 mg/l/72h

12.2 Persistence and Degradability:
Styrene
Easily degradable
Phthalic Anhydride
Rapidly degradable
Maleic anhydride
Easily degradable
Hydroquinone
Solubility in water:
> 10000 mg/l
Easily degradable
Xylene, mixture of isomers
Easily degradable

Dipropylene glycol Monomethyl ether
Solubility in water:
1000 - 10000 mg/l
Easily degradable
12.3 Bioaccumulation:
Styrene
Partition coefficient: n-octanol/water:
2,96
BCF:
74
Maleic anhydride
Partition coefficient: n-octanol/water:
-2,78
Hydroquinone
Partition coefficient: n-octanol/water:
0,59
BCF:
3,162
Dipropylene glycol Monomethyl ether
Partition coefficient: n-octanol/water:
0,0043
12.4 Mobility in soil:
Toxic effects on the environment:
Comments: Harmful to fish.
Additional environmental information:
Additional information:
Class 2 (D) water hazard (self-classification): hazardous
Do not discharge into groundwater, watercourses or drains.
Danger to drinking water even if small quantities of product leak into the ground.
Harmful to aquatic organisms
Styrene
Partition coefficient: soil/water:
2,54
Hydroquinone
Partition coefficient: soil/water:
1,585
Xylene, mixture of isomers
Partition coefficient: soil/water:
2,73
12.5 Results of PBT and vPvB assessment:
Based on available data, the product does not contain any PBT or vPvB substances at a percentage ≥ than 0.1%.
12.6. Endocrine-disrupting properties
Based on available data, the product does not contain any substances included in the main European lists of potential or suspected endocrine disruptors with environmental effects being assessed.
12.7 Other Harmful Effects:
Information not available.

SECTION 13: Disposal instructions

13.1 Waste treatment methods:
Reuse, if possible.
Product residues should be considered as hazardous special waste.

The degree of hazardousness of waste, some of which contains this product, must be assessed under the legislation in force.
Dispose of by a licensed waste disposal company in accordance with national and, if applicable, local regulations.
Transport of the waste may be subject to ADR regulations.
Contaminated packaging material
Contaminated packaging material should be sent to recycling or treatment centres in accordance with national waste management regulations.

SECTION 14: Information relating to transport

14.1 UN number

ADR / RID, IMDG, IATA:	1866

14.2 Proper cargo name according to UN model regulations

ADR / RID:	RESIN SOLUTION
IMDG:	RESIN SOLUTION
IATA.	RESIN SOLUTION

14.3 Transport hazard class(es)

ADR/RID:	Class: 3	Label: 3
IMDG:	Class: 3	Label: 3
IATA.	Class: 3	Label: 3

14.4 Packing group

ADR / RID, IMDG, IATA:	III

14.5 Environmental hazards

ADR/RID:	NO
IMDG:	NO
IATA.	NO

14.6 Special precautions for the user

ADR/RID:	HIN - Kemler: 30 Limited Quantities: 5 L Restriction code in tunnels: (D/E) Special Provision: -
IMDG:	EMS: F-E, S-E Limited Quantities: 5 L
IATA.	Cargo: Maximum quantity. 220 L Packaging instructions: 366 Passengers: Maximum quantity. 60 L Packaging instructions: 355 Special provision: A3

14.7 Transport in bulk in accordance with Annex II to MARPOL 73/78 and the IBC Code
Information not applicable

SECTION 15: Statutory information

15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture:
Directive 2012/18 / EU (Seveso):
Threshold (tonnes) for application of the lower threshold conditions 5,000 tonnes
Threshold value (tonnes) for application of cap requirements 50,000 tonnes
Seveso category - Directive 2012/18/EC:
P5c
Restrictions on the product or substances contained according to Annex XVII Regulation (EC) 1907/2006:
Product:
Item 3 - 40
Contained substances:

Item: 75
Regulation (EC) No 2019/1148 - on the marketing and use of explosives precursors:
Not applicable
Substances in Candidate List (Art. 59 REACH):
Based on available data, the product does not contain any SVHC substances with a percentage ≥ than 0.1%.
Substances subject to authorisation (Annex XIV REACH):
None
Substances subject to export notification Ver. (EC) 649/2012:
None
Substances subject to the Rotterdam Convention:
None
Substances subject to the Stockholm Convention:
None
Sanitary inspections
Workers exposed to this chemical agent are not required to undergo medical surveillance, provided that the results of the hazard assessment show that there is only a limited risk to the safety and health of workers and that the measures prescribed by Directive 98/24/EC.
Classification for water pollution in Germany (AwSV, vom 18. April 2017):
WGK 3: Very hazardous for water
15.2 Chemical safety assessment:
A chemical safety assessment has been carried out for the following substances:

- ✓ Styrene
- ✓ Maleic anhydride
- ✓ Hydroquinone
- ✓ Xylene, mixture of isomers

SECTION 16: Other information

Text of hazard statements (H) cited in paragraph 2-3 of the sheet:

Flam. Liq. 3:	Flammable liquid, category 3
Carc. 2:	Carcinogenicity, category 2
Muta. 2:	Mutagenicity in germ cells, category 2
Repr. 2:	Reproductive toxicity, category 2
Acute Tox. 4:	Acute toxicity, category 4
STOT RE 1:	Specific target organ toxicity on - repeated exposure, category 1
Asp. Tox. 1:	Aspiration hazard, category 1
STOT RE 2:	Specific target organ toxicity on - repeated exposure, category 2
Skin Corr. 1B:	Skin corrosion, category 1B
Eye Dam. 1:	Serious eye damage, category 1
Eye Irrit. 2:	Eye irritation, category 2
Skin Irrit. 2:	Skin irritation, category 2
STOT SE 3:	Specific target organ toxicity for - single exposure, category 3
Resp. Sens. 1:	Respiratory sensitisation, category 1
Skin Sens. 1:	Skin sensitisation, category 1
Skin Sens. 1A:	Skin sensitisation, category 1A
Aquatic Acute 1:	Hazardous to the aquatic environment, toxicity acute, category 1
Aquatic Chronic 1:	Hazard to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 3:	Hazard to the aquatic environment, chronic toxicity, category 3

H226:	Flammable liquid and vapour.
H351:	Suspected of causing cancer.
H341:	Suspected of causing genetic damage.
H361d:	Suspected of damaging the unborn child.

H302:	Harmful if swallowed.
H312:	Harmful in contact with skin.
H332:	Harmful by inhalation.
H372:	Causes damage to organs with prolonged or repeated exposure.
H304:	May be fatal if swallowed and enters airways.
H373:	May cause damage to organs through prolonged or repeated exposure.
H314:	Causes severe burns and eye damage.
H318:	Causes serious eye damage.
H319:	Causes severe eye irritation.
H315:	Causes skin irritation.
H335:	May cause respiratory tract irritation.
H334:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317:	May cause an allergic skin reaction.
H400:	Very toxic to aquatic organisms.
H410:	Very toxic to aquatic organisms, with long-lasting effects.
H412:	Harmful to aquatic life with long lasting effects.
EUH071:	Corrosive to respiratory system.

Usage descriptor system:

ERC 2:	Formulation in a mixture
ERC 6d:	Use of reactive process regulator in polymerisation processes at industrial site (whether or not incorporated in or on object)
ERC 8b:	widespread use of reactive processing aid (no inclusion in or on object, indoors)
ERC 8c:	widespread use leading to inclusion in or on object (indoors)
ERC 8f:	widespread use leading to inclusion in or on object (outdoors)
PROC 1:	Chemical production or refining in a closed process where exposure is not likely or processes with similar containment conditions.
PROC 10:	Apply by roller or brush.
PROC 11:	Spraying outside industrial environments
PROC 12:	Use of blowing agents in foam manufacture
PROC 13:	Treatment of articles by dipping and pouring
PROC 14:	Pelleting, compression, extrusion, pelletisation, granulation
PROC 15:	Use as a laboratory reagent
PROC 3:	Manufacturing or formulating in the chemical industry in a closed discontinuous process with Occasional controlled exposure or processes with similar restriction conditions.
PROC 4:	Chemical production with risk of exposure
PROC 5:	Blending in discontinuous processes
PROC 7:	Spraying in an industrial environment
PROC 8a:	Transfer of a substance or mixture (filling/emptying into non-specialised facilities
PROC 8b:	Transfer of a substance or mixture (filling/emptying into specialised facilities
PROC 9:	Transfer of a substance or mixture into small containers (specialised filling line, including weighing)

LEGENDA:

ADR:	European agreement concerning the transport of dangerous goods by road
ATE:	Acute toxicity estimate
CAS:	Chemical Abstract Service number
CE50:	Concentration affecting 50% of tested populations
CE:	Identification number in ESIS (European Chemicals Information System)
CLP:	Regulation (EC) 1272/2008
DNEL:	Derived dose without effect
EmS:	Emergency Schedule

GHS:	Globally harmonised classification and labelling system for chemicals
IATA DGR:	International Air Transport Association Regulations on the Transport of Dangerous Goods
IC50:	Concentration of immobilisation of 50% of tested populations
IMDG:	International Maritime Dangerous Goods Code
IMO:	International Maritime Organisation
INDEX:	Identification number in Attachment VI of CLP
LC50:	Lethal concentration 50%
LD50:	Lethal dose 50%
OEL:	Occupational exposure level
PBT:	Persistent, bioaccumulative and toxic according to REACH
PEC:	predicted concentration in the environment
PEL:	Predicted exposure level
PNEC:	Predicted no-effect concentration
REACH:	Regulation (EC) 1907/2006
RID:	Regulations concerning the international carriage of dangerous goods by rail
TLV:	Threshold limit
TLV CEILING:	Concentration not to be exceeded at any time of occupational exposure
TWA STEL:	Limit value for short-term exposure
TWA:	Time-weighted average exposure limit value
VOC:	volatile organic compound
vPvB:	Very persistent and very bioaccumulative according to REACH
WGK:	Wassergefährdungsklassen (Deutschland).

GENERAL BIBLIOGRAPHY:

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4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 of the European Parliament (II Atp. CLP)
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- The Merck Index. - 10th edition
- Dealing with chemical safety
- INRS - Fiche Toxicologique (toxicological data sheet)
- Patty - Industrial hygiene and toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 edition

- IFA GESTIS website
- Website of the ECHA agency
- Database of SDS models of chemicals - Ministry of Health and National Institute of Health

User note:
The information contained in this safety data sheet is based on the knowledge available to us at the date of the latest version.
The user should ensure that the information is appropriate and complete in relation to the specific use made of the product.
The document should not be considered a guarantee of any specific property of the product.
As the use of the product is not directly under our control, it is the duty of the user to observe the laws and regulations, which apply to hygiene and safety.
Any liability for improper use is disclaimed.
Provide appropriate training for personnel in charge of using chemical products.

Classification calculation methods:
Physicochemical hazards:
The classification of the product is derived from the criteria of the CLP Regulation, Annex I, Part 2.
The assessment methods of chemical and physical properties are shown in Part 9.
Health hazards:
The classification of the product is based on the calculation methods in Annex I of CLP, Part 3, unless otherwise provided for in Part 11.
Environmental hazards:
The classification of the product is based on the calculation methods in Annex I of CLP, Part 4, unless otherwise provided for in Part 12.

Changes from the previous revision:
Changes have been made in the following sections:
01 / 03 / 09 / 11 / 12 / 15 / 16.