SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

Metal Plastic Universal

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

1.1 Product identifier:

Product name : Metal Plastic Universal
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Sealant

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

SOUDAL N.V.
Everdongenlaan 18-20
B-2300 Turnhout
☎ +32 14 42 42 31
+32 14 42 65 14
msds@soudal.com

Manufacturer of the product

SOUDAL N.V.
Everdongenlaan 18-20
B-2300 Turnhout
☎ +32 14 42 42 31
+32 14 42 65 14
msds@soudal.com

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Flam. Liq.	category 3	H226: Flammable liquid and vapour.
Repr.	category 2	H361d: Suspected of damaging the unborn child.
STOT RE	category 1	H372: Causes damage to the ears (hearing damage) through prolonged or repeated exposure if inhaled.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
Skin Irrit.	category 2	H315: Causes skin irritation.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC
R10 - Flammable.
Repr. Cat. 3; R63 - Possible risk of harm to the unborn child.
Xn; R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.

2.2 Label elements:

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

Contains: styrene.
Signal word Danger
H-statements

H226	Flammable liquid and vapour.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to the ears (hearing damage) through prolonged or repeated exposure if inhaled.
H319	Causes serious eye irritation.
H315	Causes skin irritation.

P-statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves, protective clothing and eye protection/face protection.
P260	Do not breathe vapours/mist.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation.

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Labels

Harmful

Contains: styrene.

R-phrases

10	Flammable
48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
63	Possible risk of harm to the unborn child

S-phrases

(02)	(Keep out of the reach of children)
(46)	(If swallowed, seek medical advice immediately and show this container or label)

2.3 Other hazards:

CLP

May be ignited by sparks

DSD/DPD

May be ignited by sparks

SECTION 3: Composition/information on ingredients

3.1 Substances:

Not applicable

3.2 Mixtures:

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
styrene	100-42-5 202-851-5	10%<C<20%	Repr. Cat. 3; R63 Xn; R20 - 48/20 Xi; R36/38 R10	Flam. Liq. 3; H226 Repr. 2; H361d STOT RE 1; H372 Acute Tox. 4; H332 Eye Irrit. 2; H319 Skin Irrit. 2; H315	(1)(2)(10)	Constituent

(1) For R-phrases and H-statements in full: see heading 16
(2) Substance with a Community workplace exposure limit
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

If you feel unwell, seek medical advice.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse immediately with plenty of water. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

ON CONTINUOUS EXPOSURE/CONTACT: Headache. Nausea.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Irritation of the eye tissue.

After ingestion:

Nausea.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Polyvalent foam. ABC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture:

Upon combustion: CO and CO2 are formed.

5.3 Advice for firefighters:

5.3.1 Instructions:

No specific fire-fighting instructions required.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Safety glasses. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Safety glasses. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain leaking substance. Dam up the liquid spill. Use appropriate containment to avoid environmental contamination. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

Take up liquid spill into inert absorbent material. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Insufficient ventilation: take precautions against electrostatic charges. Gas/vapour heavier than air at 20°C. Observe strict hygiene. Keep container tightly closed. Remove contaminated clothing immediately. Do not discharge the waste into the drain.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Store at room temperature. Meet the legal requirements. Max. storage time: 1 year(s).

7.2.2 Keep away from:
Heat sources, ignition sources.

7.2.3 Suitable packaging material:
Tin.

7.2.4 Non suitable packaging material:
No data available

7.3 Specific end use(s):
If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:
8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

The Netherlands

Styreen	Time-weighted average exposure limit 8 h (Private occupational exposure limit value)	25 ppm
	Time-weighted average exposure limit 8 h (Private occupational exposure limit value)	107 mg/m³

Belgium

Styrène (monomère)	Time-weighted average exposure limit 8 h	25 ppm
	Time-weighted average exposure limit 8 h	108 mg/m³
	Short time value	50 ppm
	Short time value	216 mg/m³

USA (TLV-ACGIH)

Styrene, monomer	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	20 ppm
	Short time value (TLV - Adopted Value)	40 ppm

Germany

Styrol	Time-weighted average exposure limit 8 h (TRGS 900)	20 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	86 mg/m³

France

Styrène	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	50 ppm
	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	215 mg/m³

UK

Styrene	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	100 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	430 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	250 ppm
	Short time value (Workplace exposure limit (EH40/2005))	1080 mg/m³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

Styrene (Diffusive Samplers)	OSHA	1014
Styrene (organic and inorganic gases by Extractive FTIR)	NIOSH	3800
Styrene (Phenylethylene) (Hydrocarbons, aromatic)	NIOSH	1501
Styrene	NON	37
Styrene	OSHA	89
Styrene	OSHA	9

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL - Workers

styrene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	85 mg/m³	
	Acute systemic effects inhalation	289 mg/m³	
	Acute local effects inhalation	306 mg/m³	
	Long-term systemic effects dermal	406 mg/kg bw/day	

DNEL - General population

styrene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	10.2 mg/m³	
	Acute systemic effects inhalation	174.25 mg/m³	
	Acute local effects inhalation	182.75 mg/m³	
	Long-term systemic effects dermal	343 mg/kg bw/day	
	Long-term systemic effects oral	2.1 mg/kg bw/day	

PNEC

styrene

Compartments	Value	Remark
Fresh water	0.028 mg/l	
Marine water	0.014 mg/l	
Aqua (intermittent releases)	0.04 mg/l	
STP	5 mg/l	
Fresh water sediment	0.614 mg/kg sediment dw	
Marine water sediment	0.307 mg/kg sediment dw	
Soil	0.2 mg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Insufficient ventilation: take precautions against electrostatic charges. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit.

b) Hand protection:

Gloves.

c) Eye protection:

Safety glasses.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Viscous
Odour	Solvent-like odour
Odour threshold	No data available
Colour	Variable in colour, depending on the composition
Particle size	No data available
Explosion limits	1.1 - 6.1 vol %
Flammability	Flammable liquid and vapour.
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	No data available
Flash point	34 °C
Evaporation rate	No data available
Relative vapour density	> 1
Vapour pressure	5 hPa ; 20 °C
Solubility	water ; insoluble
Relative density	1.9
Decomposition temperature	No data available

Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

9.2 Other information:

Absolute density	1900 kg/m³

SECTION 10: Stability and reactivity

10.1 Reactivity:

May be ignited by sparks.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

No data available.

10.4 Conditions to avoid:

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Insufficient ventilation: take precautions against electrostatic charges.

10.5 Incompatible materials:

No data available.

10.6 Hazardous decomposition products:

Upon combustion: CO and CO2 are formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

Metal Plastic Universal

No (test)data on the mixture available

styrene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		>6000 mg/kg bw		Rat (male)	Weight of evidence	
Oral	LD50		>6000 mg/kg bw		Hamster (male)	Experimental value	
Dermal	LD50	OECD 402	>2000 mg/kg bw	24 h	Rat (male/female)	Experimental value	
Inhalation	LC50		2770 ppm	4 h	Rat	Literature study	
Inhalation (vapours)	LC50		11.8 mg/l air	4 h	Rat	Inconclusive, insufficient data	
Inhalation (vapours)	LC50		21 mg/l air	2 h	Mouse	Inconclusive, insufficient data	
Inhalation			category 4			Annex VI	

Judgement is based on the relevant ingredients

Conclusion

Not classified for acute toxicity

Corrosion/irritation

Metal Plastic Universal

No (test)data on the mixture available

styrene

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating; category 2					Annex VI	
Skin	Irritating; category 2					Annex VI	

Classification is based on the relevant ingredients

Conclusion

Causes skin irritation.

Causes serious eye irritation.

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

Metal Plastic Universal

No (test)data on the mixture available

styrene

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing			24 hours	Guinea pig (male)	Experimental value	

Judgement is based on the relevant ingredients

Conclusion

Not classified as sensitizing for inhalation

Not classified as sensitizing for skin

Specific target organ toxicity

Metal Plastic Universal

No (test)data on the mixture available

styrene

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL		1000 mg/kg bw/day		No effect	78-103 week(s)	Rat (male/female)	Experimental value
Oral (stomach tube)	LOAEL		2000 mg/kg bw/day	Liver	Histopathology	78-103 week(s)	Rat (male/female)	Experimental value
Oral (stomach tube)	NOAEL systemic effects		150 mg/kg bw/day		No adverse systemic effects	78 week(s)	Mouse (male/female)	Experimental value
Oral	LOAEL systemic effects		300 mg/kg bw/day	Liver	Histopathology	78 week(s)	Mouse (male/female)	Experimental value
Oral (stomach tube)	NOAEL		10 mg/kg bw/day		No effect	5 day(s)	Mouse (male)	Experimental value
Inhalation (vapours)	NOAEC	Subchronic toxicity test	0.85 mg/l air	Nose	No effect	13 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value
Inhalation (vapours)	NOAEC	Subchronic toxicity test	2.13 mg/l air	General	No effect	13 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value
Inhalation (vapours)	LOAEC local effects	Equivalent to OECD 453	0.21 mg/l air	Nose	Affection of the nasal septum	104 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value
Inhalation (vapours)	NOAEC	Equivalent to OECD 412	1.296 mg/l air		No effect	4 weeks (5 days/week)	Rat (male)	Experimental value
Inhalation (vapours)	NOAEC	Subacute toxicity test	3.47 mg/l air		No effect	4 weeks (6h/day, 5 days/week)	Rat (male)	Experimental value
Inhalation (vapours)	NOAEC	Subchronic toxicity test	2.13 mg/l air	Auditory organs	No effect	4 weeks (6h/day, 5 days/week)	Rat (male)	Experimental value

Classification is based on the relevant ingredients

Conclusion

Causes damage to the ears (hearing damage) through prolonged or repeated exposure if inhaled.

Mutagenicity (in vitro)

Metal Plastic Universal

No (test)data on the mixture available

styrene

Result	Method	Test substrate	Effect	Value determination
Negative	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value
Positive	Equivalent to OECD 473	Human lymphocytes		Experimental value
Positive	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value
Positive	Equivalent to OECD 479	Human lymphocytes		Experimental value

Mutagenicity (in vivo)

Metal Plastic Universal

No (test)data on the mixture available

styrene

Result	Method	Exposure time	Test substrate	Organ	Value determination
Positive		6 h	Mouse (male)	Liver; lungs	Experimental value
Positive		3 weeks (6h/day, 7 days/week)	Mouse (male)	Liver; lungs	Experimental value
Negative	OECD 474	21 days (6h/day)	Mouse (male)	Bone marrow	Experimental value
Negative	OECD 486	6 h	Mouse (female)	Liver	Experimental value
Positive		14 days (6h/day)	Rat (female)	Blood	Experimental value
Negative		6 h	Rat (male)	Liver; lungs	Experimental value

Carcinogenicity

Metal Plastic Universal

No (test)data on the mixture available

styrene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation (vapours)	LOAEC	Equivalent to OECD 453	0.09 mg/l air	98 weeks (6h/day, 5 days/week)	Mouse (female)	Experimental value	Respiratory tract	Carcinogenicity
Inhalation (vapours)	NOAEC	Equivalent to OECD 453	0.09 mg/l air	104 weeks (6h/day, 5 days/week)	Mouse (male)	Experimental value	Respiratory tract	No carcinogenic effect
Inhalation (vapours)	LOAEC	Equivalent to OECD 453	0.18 mg/l air	104 weeks (6h/day, 5 days/week)	Mouse (male)	Experimental value	Respiratory tract	Carcinogenicity
Inhalation (vapours)	NOAEC	Equivalent to OECD 453	>=4.34 mg/l air	104 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value		No carcinogenic effect
Oral	NOAEL	Not further determined	>=2000 mg/kg bw/day	78-103 week(s)	Rat (male/female)	Experimental value		No carcinogenic effect

Reproductive toxicity

Metal Plastic Universal

No (test)data on the mixture available

styrene

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEC	Developmental toxicity study	0.21 mg/l air	111 days (6h/day)	Rat	No effect	Foetus	Experimental value
	NOAEC	Developmental toxicity study	0.64 mg/l air	111 days (6h/day)	Rat	Litter weights	Foetus	Experimental value
	NOAEC	Equivalent to OECD 414	>=2.556 mg/l air	10 days (7h/day)	Rat	No effect		Experimental value
	NOAEC	Equivalent to OECD 414	>=2.556 mg/l air	13 days (7h/day)	Rabbit	No effect		Experimental value
	NOAEC		1.08 mg/l air	20-27 days (6h/day)	Rat	No effect		Experimental value
	LOAEC		2.146 mg/l air	20-27 days (6h/day)	Rat	Mortality		Experimental value
	NOAEL	Developmental toxicity study	>=300 mg/kg bw/day	10 day(s)	Rat	No effect	Foetus	Experimental value
Maternal toxicity	NOAEC	Other	>=2.13 mg/l air	111 days (6h/day)	Rat	No effect		Experimental value
	LOAEL	Other	180 mg/kg bw/day	10 day(s)	Rat	Histopathology		Experimental value
	LOAEC	Equivalent to OECD 414	1.278 mg/l air	10 days (7h/day)	Rat	Reduced body weight and food consumption	General	Experimental value
	NOAEC	Equivalent to OECD 414	>=2.556 mg/l air	13 days (7h/day)	Rabbit	No effect		Experimental value
	NOAEC	Other	1.08 mg/l air	20-27 days (6h/day)	Rat	No effect		Experimental value
	LOAEC	Other	2.146 mg/l air	20-27 days (6h/day)	Rat	Reduced body weight and food consumption	General	Experimental value
Effects on fertility	NOAEC (P)	OECD 416	0.64 mg/l air	70 days (6h/day)	Rat (male/female)	No effect		Experimental value
	LOAEL (P)	OECD 416	2.13 mg/l air	70 days (6h/day)	Rat (male/female)	Histopathology		Experimental value

Classification is based on the relevant ingredients

Conclusion CMR

Suspected of damaging the unborn child.
Not classified for mutagenic or genotoxic toxicity
Not classified for carcinogenicity

Chronic effects from short and long-term exposure

Metal Plastic Universal

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Auditory disturbances.

SECTION 12: Ecological information

12.1 Toxicity:

Metal Plastic Universal

No (test)data on the mixture available

styrene

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	10 mg/l	96 h	Pimephales promelas	Flow-through system	Fresh water	Experimental value; GLP
Acute toxicity invertebrates	EC50	OECD 202	4.7 mg/l	48 h	Daphnia magna	Flow-through system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	ErC50	EPA OTS 797.1050	4.9 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
Long-term toxicity aquatic invertebrates	NOEC	OECD 211	1.01 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP
Toxicity aquatic micro-organisms	EC50		5.4 mg/l	5 minutes	Photobacterium phosphoreum	Static system	Salt water	Experimental value; Nominal concentration
	EC50	OECD 209	500 mg/l	30 minutes	Activated sludge	Static system	Fresh water	Experimental value; Nominal concentration

	Parameter	Method	Value	Duration	Species	Value determination
Toxicity soil macro-organisms	LC50	OECD 207	120 mg/kg soil dw	14 day(s)	Eisenia fetida	Experimental value

Judgement is based on the relevant ingredients of the mixture

Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2 Persistence and degradability:

styrene

Biodegradation water

Method	Value	Duration	Value determination
OECD 301D: Closed Bottle Test	87 %	20 day(s)	Experimental value
ISO 9408	70.9 - 100 %; GLP	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
	9.2 h	12.4E13 /cm³	Experimental value

Phototransformation water (DT50 water)

Method	Value	Conc. OH-radicals	Value determination
	237 day(s)		Experimental value

Biodegradation soil

Method	Value	Duration	Value determination
	16 - 62 %	33 day(s)	Experimental value

Half-life air (t1/2 air)

Method	Value	Primary degradation/mineralisation	Value determination
	12.7 h	Primary degradation	Experimental value

Conclusion

Contains readily biodegradable component(s)

12.3 Bioaccumulative potential:

Metal Plastic Universal

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

styrene

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		35.5		Carassius auratus	Literature study

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 107		2.96	25 °C	Experimental value

Conclusion

Does not contain bioaccumulative component(s)

12.4 Mobility in soil:

styrene

(log) Koc

Parameter	Method	Value	Value determination
log Koc		2.55	Estimated value

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
195 Pa.m³/mol		20 °C		Experimental value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I	98.6 %	0 %	0.09 %	0.09 %	1.21 %	Calculated value

Conclusion

Contains component(s) with potential for mobility in the soil

12.5 Results of PBT and vPvB assessment:

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6 Other adverse effects:

Metal Plastic Universal

Global warming potential (GWP)

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

styrene

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Ground water

Ground water pollutant

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
08 04 09* (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants containing organic solvents or other dangerous substances). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Incinerate under surveillance with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	3269

14.2 UN proper shipping name:

Proper shipping name	Polyester resin kit

14.3 Transport hazard class(es):

Hazard identification number	
Class	3
Classification code	F3

14.4 Packing group:

Packing group	III
Labels	3

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	236

Special provisions	340
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Rail (RID)

14.1 UN number:

UN number	3269

14.2 UN proper shipping name:

Proper shipping name	Polyester resin kit

14.3 Transport hazard class(es):

Hazard identification number	33
Class	3
Classification code	F3

14.4 Packing group:

Packing group	III
Labels	3

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	236
Special provisions	340
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Inland waterways (ADN)

14.1 UN number:

UN number	3269

14.2 UN proper shipping name:

Proper shipping name	Polyester resin kit

14.3 Transport hazard class(es):

Class	3
Classification code	F3

14.4 Packing group:

Packing group	III
Labels	3

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	236
Special provisions	340
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Sea (IMDG/IMSBC)

14.1 UN number:

UN number	3269

14.2 UN proper shipping name:

Proper shipping name	Polyester resin kit

14.3 Transport hazard class(es):

Class	3

14.4 Packing group:

Packing group	III
Labels	3

14.5 Environmental hazards:

Marine pollutant	-
Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	236
Special provisions	340
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Annex II of MARPOL 73/78	Not applicable, based on available data

Air (ICAO-TI/IATA-DGR)

14.1 UN number:

UN number	3269

14.2 UN proper shipping name:

Proper shipping name	Polyester resin kit

14.3 Transport hazard class(es):

Class	3

14.4 Packing group:

Packing group	III
Labels	3

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	A66
Special provisions	A163
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	5 kg

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
12 %	

European drinking water standards (Directive 98/83/EC)

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· styrene	Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects,2. Articles not complying with paragraph 1 shall not be placed on the market.3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with R65 or H304,4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.’
· styrene	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs.2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”.3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC.4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the

		market unless they conform to the requirements indicated.

National legislation The Netherlands

Metal Plastic Universal

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 03
Waterbezwaarlijkheid	9

styrene

SZW - List of reprotoxic substances (development)	Possibly hazardous to the foetus

National legislation Germany

Metal Plastic Universal

WGK	2; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)

styrene

MAK - Krebserzeugend Kategorie	5
Schwangerschaft Gruppe	C
MAK 8-Stunden-Mittelwert ppm	Styrol; 20 ppm
MAK 8-Stunden-Mittelwert mg/m³	Styrol; 86 mg/m³
TA-Luft	5.2.5; I

National legislation France

Metal Plastic Universal

No data available

National legislation Belgium

Metal Plastic Universal

No data available

Other relevant data

Metal Plastic Universal

No data available

styrene

IARC - classification	2B; Styrene
TLV - Carcinogen	Styrene, monomer; A4

15.2 Chemical safety assessment:

No chemical safety assessment is required.

SECTION 16: Other information

Full text of any R-phrases referred to under headings 2 and 3:

R10 Flammable
R20 Harmful by inhalation
R36/38 Irritating to eyes and skin
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation
R63 Possible risk of harm to the unborn child

Full text of any H-statements referred to under headings 2 and 3:

H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H361d Suspected of damaging the unborn child.
H372 Causes damage to the ears (hearing damage) through prolonged or repeated exposure if inhaled.
(*) = INTERNAL CLASSIFICATION BY BIG
PBT-substances = persistent, bioaccumulative and toxic substances
DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet

is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.