



Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

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

1.1. Product identifier

Code: **35740M10099**
Product name **MS 2 PART PRIMER Comp. A**

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

Intended use **Epoxy formulation**

Identified Uses	Industrial	Professional	Consumer
Brush/roller/trowel/spray application	-	✓	-

1.3. Details of the supplier of the safety data sheet

Name **LIQUID ROOFING SYSTEMS LTD**
Full address **Roofing House, Prees Green**
District and Country **Whitchurch, SY13 2BN**
United Kingdom

Tel. **01948 841877**

e-mail address of the competent person responsible for the Safety Data Sheet **enquiries@lrs-systems.co.uk**

1.4. Emergency telephone number

For urgent inquiries refer to

United Kingdom
999/112 emergency
111 non-emergency medical number
NHS 111 (England)
NHS 24 (Scotland)
NHS Direct (Wales)

Ireland
National Poisons Information Centre, Beaumont Hospital, PO Box 1297, Beaumont Road, Dublin 9
018092166
018092566

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flammable liquid, category 2	H225	Highly flammable liquid and vapour.
Reproductive toxicity, category 2	H361d	Suspected of damaging the unborn child.
Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long lasting effects.



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2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: Danger

Hazard statements:

H225	Highly flammable liquid and vapour.
H361d	Suspected of damaging the unborn child.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.
EUH205	Contains epoxy constituents. May produce an allergic reaction.

Precautionary statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/ protective clothing / eye protection / face protection.
P370+P378	In case of fire: use carbon dioxide, sand, foam or powder to extinguish.
P273	Avoid release to the environment.
P391	Collect spillage.
P261	Avoid breathing dust / fume / gas / mist / vapours / spray.

Contains: TOLUENE
2,2-BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE
REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIRANE

VOC (Directive 2004/42/EC) :

Two-pack reactive performance coatings for specific end use such as floors.

VOC given in g/litre of product in a ready-to-use condition :

Limit value:	332,37	500,00
- Catalysed with :	25,00 %	MS 2 PART PRIMER Comp. B

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration \geq 0.1%.

SECTION 3. Composition/information on ingredients

3.1. Substances

Information not relevant



SECTION 3. Composition/information on ingredients ... / >>

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
2,2-BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE		
INDEX 603-073-00-2	15 ≤ x < 16,5	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411
EC 216-823-5		Skin Irrit. 2 H315: ≥ 5%, Eye Irrit. 2 H319: ≥ 5%
CAS 1675-54-3		
REACH Reg. 01-2119456619-26		
REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-([2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY]METHYL)OXIRANE		
INDEX 5 ≤ x < 9		Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411
EC 701-263-0		
CAS		
REACH Reg. 01-2119454392-40		
ISOPROPANOL		
INDEX 603-117-00-0	5 ≤ x < 9	Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336
EC 200-661-7		
CAS 67-63-0		
REACH Reg. 01-2119457558-25		
TOLUENE		
INDEX 601-021-00-3	5 ≤ x < 9	Flam. Liq. 2 H225, Repr. 2 H361d, Asp. Tox. 1 H304, STOT RE 2 H373, Skin Irrit. 2 H315, STOT SE 3 H336, Aquatic Chronic 3 H412
EC 203-625-9		
CAS 108-88-3		
REACH Reg. 01-2119471310-51		
TRIZINC BIS (ORTHOPHOSPHATE)		
INDEX 030-011-00-6	5 ≤ x < 9	Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
EC 231-944-3		
CAS 7779-90-0		
REACH Reg. 01-2119485044-40		
ETHYL ACETATE		
INDEX 607-022-00-5	0,7 ≤ x < 0,8	Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066
EC 205-500-4		
CAS 141-78-6		
REACH Reg. 01-2119475103-46		
ZINC OXIDE		
INDEX 030-013-00-7	0,15 ≤ x < 0,2	Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
EC 215-222-5		
CAS 1314-13-2		
REACH Reg. 01-2119463881-32		
REACTION MASS OF ETHYLBENZENE AND XYLENE		
INDEX 0 ≤ x < 0,05		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 STA Dermal: 1100 mg/kg, STA Inhalation vapours: 11 mg/l
EC 905-588-0		
CAS		
REACH Reg. 01 2119488216-32; 01-2119539452-40		
XYLENE (MIXTURE OF ISOMERS)		
INDEX 601-022-00-9	0 ≤ x < 0,05	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 Chronic 3 H412, Classification note according to Annex VI to the CLP Regulation: C STA Dermal: 1100 mg/kg, STA Inhalation vapours: 11 mg/l
EC 215-535-7		
CAS 1330-20-7		
REACH Reg. 01-2119488216-32		
2-METHOXY-1-METHYLETHYL ACETATE		
INDEX 607-195-00-7	0 ≤ x < 0,05	Flam. Liq. 3 H226, STOT SE 3 H336
EC 203-603-9		
CAS 108-65-6		
REACH Reg. 01-2119475791-29		
N-BUTYL ACETATE		
INDEX 607-025-00-1	0 ≤ x < 0,05	Flam. Liq. 3 H226, STOT SE 3 H336, EUH066
EC 204-658-1		
CAS 123-86-4		
REACH Reg. 01-2119485493-29		



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PHOSPHORIC ACID

INDEX 015-011-00-6 $0 \leq x < 0,05$

EC 231-633-2

CAS 7664-38-2

REACH Reg. 01-2119485924-24

ETHYLBENZENE

INDEX 601-023-00-4 $0 \leq x < 0,05$

EC 202-849-4

CAS 100-41-4

REACH Reg. 01-2119489370-35

Met. Corr. 1 H290, Skin Corr. 1B H314, Eye Dam. 1 H318, Classification note according to Annex VI to the CLP Regulation: B

Skin Corr. 1B H314: $\geq 25\%$, Skin Irrit. 2 H315: $\geq 10\%$, Eye Dam. 1 H318: $\geq 25\%$, Eye Irrit. 2 H319: $\geq 10\%$

Flam. Liq. 2 H225, Acute Tox. 4 H332, Asp. Tox. 1 H304, STOT RE 2 H373, Aquatic Chronic 3 H412

LC50 Inhalation vapours: 17,2 mg/l/4h

The full wording of hazard (H) phrases is given in section 16 of the sheet.

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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

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

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

**SECTION 6. Accidental release measures** ... / >>

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Use explosion-proof equipment. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage**7.1. Precautions for safe handling**

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory References:

DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÄRDSMINISTERIETS PUBLIKATIONER 2020:25
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/ΕΕ 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 μεταλλαξιογόνους παράγοντες κατά την εργασία"»
HRV	Hrvatska	Pravilnik o izmjenama i dopunama Pravilnika o zaštiti radnika od izloženosti opasnimkemičkim tvarima na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
LTU	Lietuva	Jsakymas dėl lietuvis higienos normos hn 23:2011 „cheminių medžiagų profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai“ patvirtinimo
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
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



SECTION 8. Exposure controls/personal protection ... / >>

POL	Polska	riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 12. augusta 2020, ktorým sa mení a dopĺňa nariadenie vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym 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 (Fourth Edition 2020)
EU	OEL EU	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive (EU) 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 2022

2,2-BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,006	mg/l
Normal value in marine water	0,001	mg/l
Normal value for fresh water sediment	0,341	mg/kg
Normal value for marine water sediment	0,034	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the food chain (secondary poisoning)	11	mg/kg
Normal value for the terrestrial compartment	0,065	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers			
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,75 mg/kg bw/d				
Inhalation				0,87 mg/m3	MED	NPI	MED	4,93 mg/m3
Skin				0,0893 mg/kg bw/d	MED	NPI	MED	0,75 mg/kg bw/d

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIRANE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,003	mg/l
Normal value in marine water	0,0003	mg/l
Normal value for fresh water sediment	0,294	mg/kg
Normal value for marine water sediment	0,029	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,237	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers			
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					NPI	NPI	NPI	29,39 mg/m3
Skin					0,0083 mg/cm2	NPI		104,15 mg/kg bw/d



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ISOPROPANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
AGW	DEU	500	200	1000	400	
MAK	DEU	500	200	1000	400	
VLA	ESP	500	200	1000	400	
VLEP	FRA			980	400	
HTP	FIN	500	200	620	250	
TLV	GRC	980	400	1225	500	
GVI/KGVI	HRV	999	400	1250	500	
RD	LTU	350	150	600	250	
TGG	NLD	650				
NDS/NDSch	POL	900		1200		SKIN
TLV	ROU	200	81	500	203	
NPEL	SVK	500	200	1000	400	
MV	SVN	500	200	1000	400	
WEL	GBR	999	400	1250	500	
TLV-ACGIH		492	200	983	400	

Predicted no-effect concentration - PNE C

Normal value in fresh water	140,9	mg/l
Normal value in marine water	140,9	mg/l
Normal value for fresh water sediment	552	mg/kg
Normal value for marine water sediment	552	mg/kg
Normal value of STP microorganisms	2251	mg/l
Normal value for the food chain (secondary poisoning)	160	mg/kg
Normal value for the terrestrial compartment	28	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation								500 mg/m ³
Skin								888 mg/kg bw/d

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SECTION 8. Exposure controls/personal protection ... / >>**TOLUENE****Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
AGW	DEU	190	50	760	200	SKIN
MAK	DEU	190	50	760	200	SKIN
VLA	ESP	192	50	384	100	SKIN
VLEP	FRA	76,8	20	384	100	SKIN
HTP	FIN	81	25	380	100	SKIN Buller
TLV	GRC	192	50	384	100	
GVI/KGVI	HRV	192	50	384	100	SKIN
VLEP	ITA	192	50			SKIN
RD	LTU	192	50	384	100	SKIN
TGG	NLD	150		384		
VLE	PRT	192	50	384	100	SKIN
NDS/NDSch	POL	100		200		SKIN
TLV	ROU	192	50	384	100	SKIN
NPEL	SVK	192	50	384	100	SKIN
MV	SVN	192	50	384	100	SKIN
WEL	GBR	191	50	384	100	SKIN
OEL	EU	192	50	384	100	SKIN
TLV-ACGIH			20			

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,68	mg/l
Normal value in marine water	0,68	mg/l
Normal value for fresh water sediment	16,39	mg/kg
Normal value for marine water sediment	16,39	mg/kg
Normal value of STP microorganisms	13,61	mg/l
Normal value for the terrestrial compartment	2,89	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic		Effects on workers			
	Acute	Acute	local	systemic	Acute	Chronic	Chronic	Chronic
	local	systemic			local	systemic	local	systemic
Inhalation					384	384	192	192
					mg/m ³	mg/m ³	mg/m ³	mg/m ³
Skin								384
								mg/kg
								bw/d

TRIZINC BIS (ORTHOPHOSPHATE)**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
MAK	DEU	2		4		INHAL
MAK	DEU	0,1		0,4		RESP
NPEL	SVK	2				INHAL
NPEL	SVK	0,1				RESP

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0206	mg/l
Normal value in marine water	0,0061	mg/l
Normal value for fresh water sediment	117,8	mg/kg
Normal value for marine water sediment	56,5	mg/kg
Normal value of STP microorganisms	0,1	mg/l
Normal value for the food chain (secondary poisoning)	NPI	
Normal value for the terrestrial compartment	35,6	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic		Effects on workers			
	Acute	Acute	local	systemic	Acute	Chronic	Chronic	Chronic
	local	systemic			local	systemic	local	systemic
Inhalation					NPI	NPI	NPI	5
								mg/m ³
Skin					NPI	NPI	NPI	83
								mg/kg
								bw/d



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ETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	730	200	1460	400	
MAK	DEU	750	200	1500	400	
VLA	ESP	734	200	1468	400	
VLEP	FRA	734	200	1468	400	
HTP	FIN	730	200	1470	400	
TLV	GRC	734	200	1468	400	
GVI/KGVI	HRV	734	200	1468	400	
VLEP	ITA	734	200	1468	400	
RD	LTU	500	150	1100 (C)	300 (C)	
TGG	NLD	734		1468		
VLE	PRT	734	200	1468	400	
NDS/NDSch	POL	734		1468		
TLV	ROU	734	200	1468	400	
NPEL	SVK	734	200	1468	400	
MV	SVN	734	200	1468	400	
WEL	GBR	734	200	1468	400	
OEL	EU	734	200	1468	400	
TLV-ACGIH		1441	400			

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,24	mg/l
Normal value in marine water	0,024	mg/l
Normal value for fresh water sediment	1,15	mg/kg
Normal value for marine water sediment	0,115	mg/kg
Normal value of STP microorganisms	650	mg/l
Normal value for the terrestrial compartment	0,148	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation					1468	1468	734	734
					mg/m3	mg/m3	mg/m3	mg/m3
Skin								63
								mg/kg
								bw/d



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SECTION 8. Exposure controls/personal protection ... / >>

ZINC OXIDE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
MAK	DEU	2		4		INHAL
MAK	DEU	0,1		0,4		RESP
VLA	ESP	2		10		
VLEP	FRA	5				
HTP	FIN	2		10		
TLV	GRC	5		10		
GVI/KGVI	HRV	2		10		RESP
RD	LTU	5				
NDS/NDSch	POL	5		10		INHAL Na Zn
TLV	ROU	5		10		Fumuri
NPEL	SVK	1		1		RESP
MV	SVN	5		20		RESP
TLV-ACGIH		2		10		RESP

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0206	mg/l
Normal value in marine water	0,0061	mg/l
Normal value for fresh water sediment	117,8	mg/kg
Normal value for marine water sediment	56,5	mg/kg
Normal value of STP microorganisms	0,1	mg/l
Normal value for the food chain (secondary poisoning)	NPI	
Normal value for the terrestrial compartment	35,6	mg/kg
Normal value for the atmosphere	NPI	

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation					NPI	NPI	0,5	5
Skin					NPI	NPI	NPI	83
								mg/kg bw/d

REACTION MASS OF ETHYLBENZENE AND XYLENE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
OEL	EU	221	50	442	100	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,327	mg/l
Normal value in marine water	0,327	mg/l
Normal value for fresh water sediment	12,46	mg/kg
Normal value for marine water sediment	12,46	mg/kg
Normal value of STP microorganisms	6,58	mg/l
Normal value for the terrestrial compartment	2,31	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation					442	442	221	221
Skin					mg/m ³	mg/m ³	NPI	212
								mg/kg bw/d



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XYLENE (MIXTURE OF ISOMERS)

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	440	100	880	200	SKIN
MAK	DEU	440	100	880	200	SKIN
VLA	ESP	221	50	442	100	SKIN
VLEP	FRA	221	50	442	100	SKIN
HTP	FIN	220	50	440	100	SKIN
TLV	GRC	435	100	650	150	
GVI/KGVI	HRV	221	50	442	100	SKIN
VLEP	ITA	221	50	442	100	SKIN
RD	LTU	221	50	442	100	SKIN
TGG	NLD	210		442		SKIN
VLE	PRT	221	50	442	100	SKIN
NDS/NDSch	POL	100		200		SKIN
TLV	ROU	221	50	442	100	SKIN
NPEL	SVK	221	50	442	100	SKIN
MV	SVN	221	50	442	100	SKIN
WEL	GBR	220	50	441	100	SKIN
OEL	EU	221	50	442	100	SKIN
TLV-ACGIH			20			

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,327	mg/l
Normal value in marine water	0,327	mg/l
Normal value for fresh water sediment	12,46	mg/kg
Normal value for marine water sediment	12,46	mg/kg
Normal value of STP microorganisms	6,58	mg/l
Normal value for the terrestrial compartment	2,31	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					442 mg/m3	442 mg/m3	221 mg/kg	221 mg/m3
Skin								212 mg/kg bw/d



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2-METHOXY-1-METHYLETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	270	50	270	50	
MAK	DEU	270	50	270	50	
VLA	ESP	275	50	550	100	SKIN
VLEP	FRA	275	50	550	100	SKIN
HTP	FIN	270	50	550	100	SKIN
TLV	GRC	275	50	550	100	
GVI/KGVI	HRV	275	50	550	100	SKIN
VLEP	ITA	275	50	550	100	SKIN
RD	LTU	250	50	400	75	SKIN
TGG	NLD	550				
VLE	PRT	275	50	550	100	SKIN
NDS/NDSch	POL	260		520		SKIN
TLV	ROU	275	50	550	100	SKIN
NPEL	SVK	275	50	550	100	SKIN
MV	SVN	275	50	550	100	SKIN
WEL	GBR	274	50	548	100	SKIN
OEL	EU	275	50	550	100	SKIN

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,635	mg/l
Normal value in marine water	0,064	mg/l
Normal value for fresh water sediment	3,29	mg/kg
Normal value for marine water sediment	0,329	mg/kg
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0,29	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					550			275
					mg/m3			mg/m3
Skin								796
								mg/kg bw/d



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SECTION 8. Exposure controls/personal protection ... / >>

N-BUTYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
AGW	DEU	300	62	600 (C)	124 (C)	
VLA	ESP	241	50	724	150	
VLEP	FRA	710	150	940	200	
TLV	GRC	710	150	950	200	
GVI/KGVI	HRV	241	50	723	150	
VLEP	ITA	241	50	723	150	
RD	LTU	241	50	723	150	
TGG	NLD	150				
VLE	PRT	241	50	723	150	
NDS/NDSch	POL	240		720		
TLV	ROU	241	50	723	150	
NPEL	SVK	241	50	723	150	
MV	SVN	300	62	600	124	
WEL	GBR	724	150	966	200	
OEL	EU	241	50	723	150	
TLV-ACGIH			50		150	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,18	mg/l
Normal value in marine water	0,018	mg/l
Normal value for fresh water sediment	0,981	mg/kg
Normal value for marine water sediment	0,098	mg/kg
Normal value of STP microorganisms	35,6	mg/l
Normal value for the terrestrial compartment	0,09	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation					600	600	300	300
					mg/m ³	mg/m ³	mg/m ³	mg/m ³
Skin					NPI	11	NPI	11
						mg/kg		mg/kg
						bw/d		bw/d

PHOSPHORIC ACID

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
AGW	DEU	2		4 (C)		INHAL
MAK	DEU	2		4		INHAL
VLA	ESP	1		2		
VLEP	FRA	1	0,2	2	0,5	
HTP	FIN	1		2		
TLV	GRC	1		3		
GVI/KGVI	HRV	1		2		
VLEP	ITA	1		2		
RD	LTU	1		2		
TGG	NLD	1		2		
VLE	PRT	1		2		
NDS/NDSch	POL	1		2		
TLV	ROU	1		2		
NPEL	SVK	1		2		
MV	SVN	1		2		
WEL	GBR	1		2		
OEL	EU	1		2		
TLV-ACGIH		1		3		

**SECTION 8. Exposure controls/personal protection ... / >>****ETHYLBENZENE****Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	88	20	176	40	SKIN
MAK	DEU	88	20	176	40	SKIN
VLA	ESP	441	100	884	200	SKIN
VLEP	FRA	88,4	20	442	100	SKIN
HTP	FIN	220	50	880	200	SKIN
TLV	GRC	435	100	545	125	
GVI/KGVI	HRV	442	100	884	200	SKIN
VLEP	ITA	442	100	884	200	SKIN
RD	LTU	442	100	884	200	SKIN
TGG	NLD	215		430		SKIN
VLE	PRT	442	100	884	200	SKIN
NDS/NDSch	POL	200		400		SKIN
TLV	ROU	442	100	884	200	SKIN
NPEL	SVK	442	100	884	200	SKIN
MV	SVN	442	100	884	200	SKIN
WEL	GBR	441	100	552	125	SKIN
OEL	EU	442	100	884	200	SKIN
TLV-ACGIH		87	20			

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,1	mg/l
Normal value in marine water	0,01	mg/l
Normal value for fresh water sediment	13,7	mg/kg
Normal value for marine water sediment	1,37	mg/kg
Normal value of STP microorganisms	9,6	mg/l
Normal value for the food chain (secondary poisoning)	20	mg/kg
Normal value for the terrestrial compartment	2,68	mg/kg
Normal value for the atmosphere	NPI	

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					293 mg/m3		NPI	77 mg/m3
Skin					NPI	NPI	NPI	180 mg/kg bw/d

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

TLV of solvent mixture: 0 mg/m3

8.2. Exposure controls

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.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

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).

RESPIRATORY PROTECTION



If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

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

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	grey	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	> 75 °C	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	5 °C	Method: Closed cup
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	not applicable	Reason for missing data: substance/mixture is non-soluble (in water)
Kinematic viscosity	not available	
Dynamic viscosity	100000 mPa*s	Temperature: 20 °C
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	not applicable	
Vapour pressure	not available	
Density and/or relative density	1,7 g/cm ³	Temperature: 20 °C
Relative vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Total solids (250°C / 482°F)	83,51 %	
VOC (Directive 2004/42/EC) :	16,32 % - 277,52	g/litre
Explosive properties	not expected	
Oxidising properties	not expected	

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

TOLUENE

Avoid exposure to: light.

ETHYL ACETATE

Decomposes slowly into acetic acid and ethanol under the effect of light, air and water.

**SECTION 10. Stability and reactivity** ... / >>**2-METHOXY-1-METHYLETHYL ACETATE**

Stable in normal conditions of use and storage.

With the air it may slowly develop peroxides that explode with an increase in temperature.

N-BUTYL ACETATE

Decomposes on contact with: water.

PHOSPHORIC ACID

Decomposes at temperatures above 200°C/392°F.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

TOLUENE

Risk of explosion on contact with: fuming sulphuric acid, nitric acid, silver perchlorate, nitrogen dioxide, non-metal halogenates, acetic acid, organic nitrocompounds. May form explosive mixtures with: air. May react dangerously with: strong oxidising agents, strong acids, sulphur.

ETHYL ACETATE

Risk of explosion on contact with: alkaline metals, hydrides, oleum. May react violently with: fluorine, strong oxidising agents, chlorosulphuric acid, potassium tert-butoxide. Forms explosive mixtures with: air.

XYLENE (MIXTURE OF ISOMERS)

Stable in normal conditions of use and storage. Reacts violently with: strong oxidants, strong acids, nitric acid, perchlorates. May form explosive mixtures with: air.

2-METHOXY-1-METHYLETHYL ACETATE

May react violently with: oxidising substances, strong acids, alkaline metals.

N-BUTYL ACETATE

Risk of explosion on contact with: strong oxidising agents. May react dangerously with: alkaline hydroxides, potassium tert-butoxide. Forms explosive mixtures with: air.

PHOSPHORIC ACID

Risk of explosion on contact with: nitromethane. May react dangerously with: alkalis, sodium borohydride.

ETHYLBENZENE

Reacts violently with: strong oxidants. Attacks various types of plastic materials. May form explosive mixtures with: air.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

ETHYL ACETATE

Avoid exposure to: light, sources of heat, naked flames.

N-BUTYL ACETATE

Avoid exposure to: moisture, sources of heat, naked flames.

10.5. Incompatible materials**ETHYL ACETATE**

Incompatible with: acids, bases, strong oxidants, chlorosulphuric acid.

2-METHOXY-1-METHYLETHYL ACETATE

Incompatible with: oxidising substances, strong acids, alkaline metals.

N-BUTYL ACETATE

Incompatible with: water, nitrates, strong oxidants, acids, alkalis, zinc.

PHOSPHORIC ACID

Incompatible with: metals, strong alkalis, aldehydes, organic sulphides, peroxides.

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

PHOSPHORIC ACID

May develop: phosphoryl oxides.

ETHYLBENZENE

May develop: methane, styrene, hydrogen, ethane.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.



SECTION 11. Toxicological information ... / >>

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

Metabolism, toxicokinetics, mechanism of action and other information

2-METHOXY-1-METHYLETHYL ACETATE

The main route of entry is the skin, whereas the respiratory route is less important due to the low vapour pressure of the product.

Information on likely routes of exposure

TOLUENE

WORKERS: inhalation; contact with the skin.

POPULATION: ingestion of contaminated food or water; inhalation of ambient air; contact with the skin of products containing the substance.

XYLENE (MIXTURE OF ISOMERS)

WORKERS: inhalation; contact with the skin.

POPULATION: ingestion of contaminated food or water; inhalation of ambient air.

2-METHOXY-1-METHYLETHYL ACETATE

WORKERS: inhalation; contact with the skin.

N-BUTYL ACETATE

WORKERS: inhalation; contact with the skin.

ETHYLBENZENE

WORKERS: inhalation; contact with the skin.

POPULATION: ingestion of contaminated food or water; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

TOLUENE

Toxic effect on the central and peripheral nervous system with encephalopathy and polyneuritis; irritating for the skin, conjunctiva, cornea and respiratory apparatus.

XYLENE (MIXTURE OF ISOMERS)

Toxic effect on the central nervous system (encephalopathy); irritating for the skin, conjunctiva, cornea and respiratory apparatus.

2-METHOXY-1-METHYLETHYL ACETATE

Above 100 ppm causes irritation of the eye, nose and oropharynx mucous membranes. At 1000 ppm, disturbance of equilibrium and severe eye irritation can be noticed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and eye irritation with direct contact. No chronic effects on humans have been reported (INCR, 2010).

N-BUTYL ACETATE

In humans, the substance's vapours cause irritation of the eyes and nose. In the event of repeated exposure, skin irritation, dermatitis (dryness and cracking of the skin) and keratitis appear.

ETHYLBENZENE

As the counterparts of benzene, may have an acute effect on the central nervous system, with depression, narcosis, often preceded by dizziness and associated with headache (Ispešl). Is irritating for skin, conjunctiva and respiratory tract.

Interactive effects

TOLUENE

Certain drugs and other industrial products can interfere with the metabolism of the toluene.

XYLENE (MIXTURE OF ISOMERS)

Intake of alcohol interferes with the metabolism of the substance, inhibiting it. Ethanol consumption (0.8 g/kg) before a 4-hour exposure to xylene vapours (145 and 280 ppm) causes a 50% reduction in the excretion of methyl hippuric acid, whereas the concentration of xylenes in the blood increases approx. 1.5-2 times. At the same time there is an increase in the secondary side effects of the ethanol. The metabolism of the xylenes is increased by phenobarbital and 3-methyl-colantrene type enzyme inducers. Aspirin and xylenes mutually inhibit their conjugation with the glycine, which results in a decrease in urinary excretion of methyl hippuric acid. Other industrial products can interfere with the metabolism of xylenes.

N-BUTYL ACETATE

A case of acute intoxication been reported involving a 33 year old worker while cleaning a tank with a preparation containing xylenes, butyl acetate and ethylene glycol acetate. The person had irritation of the conjunctiva and upper respiratory tract, drowsiness and motor coordination disorders, which disappeared within 5 hours. The symptoms are attributed to poisoning by mixed xylenes and butyl acetate, with a possible synergistic effect responsible for the neurological effects. Cases of vacuolar keratitis are reported in workers exposed to a mixture of butyl acetate and isobutanol vapours, but with uncertainty concerning the responsibility

**SECTION 11. Toxicological information ... / >>**

of a particular solvent (INRC, 2011).

ACUTE TOXICITY

ATE (Inhalation) of the mixture: Not classified (no significant component)
ATE (Oral) of the mixture: Not classified (no significant component)
ATE (Dermal) of the mixture: Not classified (no significant component)

2,2-BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

LD50 (Dermal): > 2000 mg/kg OECD Guideline 402, Rat - Wistar
LD50 (Oral): > 2000 mg/kg OECD Guideline 420, Rat - Wistar

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-([2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY]METHYL)OXIRANE

LD50 (Dermal): > 2000 mg/kg OECD Guideline 402, Rat - Fischer 344
LD50 (Oral): > 5000 mg/kg OECD Guideline 401, Rat - Fischer 344

ISOPROPANOL

LD50 (Dermal): 12800 mg/kg Rat
LD50 (Oral): 4710 mg/kg Rat
LC50 (Inhalation vapours): 72,6 mg/l/4h Rat

TOLUENE

LD50 (Dermal): 12124 mg/kg Rabbit
LD50 (Oral): 5580 mg/kg Rat
LC50 (Inhalation vapours): 28,1 mg/l/4h Rat

TRIZINC BIS (ORTHOPHOSPHATE)

LD50 (Oral): > 5000 mg/kg Rat - Wistar
LC50 (Inhalation mists/powders): > 5,7 mg/l Rat

REACTION MASS OF ETHYLBENZENE AND XYLENE

LD50 (Dermal): 12126 mg/kg New Zealand White rabbit
STA (Dermal): 1100 mg/kg estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)
3523 mg/kg EU Method B.1, Rat - F344/N
LD50 (Oral): 3523 mg/kg EU Method B.1, Rat - F344/N
LC50 (Inhalation vapours): 6700 ppm/4h EU Method B.2, Rat - Long-Evans

XYLENE (MIXTURE OF ISOMERS)

LD50 (Dermal): 4350 mg/kg Rabbit
STA (Dermal): 1100 mg/kg estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)
3523 mg/kg Rat
LD50 (Oral): 3523 mg/kg Rat
LC50 (Inhalation vapours): 26 mg/l/4h Rat

2-METHOXY-1-METHYLETHYL ACETATE

LD50 (Dermal): > 5000 mg/kg Rat
LD50 (Oral): 8530 mg/kg Rat

N-BUTYL ACETATE

LD50 (Dermal): > 5000 mg/kg Rabbit
LD50 (Oral): > 6400 mg/kg Rat
LC50 (Inhalation vapours): 21,1 mg/l/4h Rat

PHOSPHORIC ACID

LD50 (Dermal): 2740 mg/kg Rabbit
LD50 (Oral): 1530 mg/kg Rat
LC50 (Inhalation mists/powders): > 0,85 mg/l/1h Rat

ETHYLBENZENE

LD50 (Dermal): 15354 mg/kg Rabbit
LD50 (Oral): 3500 mg/kg Rat
LC50 (Inhalation vapours): 17,2 mg/l/4h Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

**SECTION 11. Toxicological information ... / >>**SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

TOLUENE

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 1999).

The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

XYLENE (MIXTURE OF ISOMERS)

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC).

The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

ETHYLBENZENE

Classified in Group 2B (possible human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 2000).

Classified in Group D (not classifiable as a human carcinogen) by the US Environmental Protection Agency (EPA) - (US EPA file on-line 2014).

REPRODUCTIVE TOXICITY

Suspected of damaging the unborn child

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

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

12.1. Toxicity**REACTION MASS OF ETHYLBENZENE AND XYLENE**

LC50 - for Fish

2,6 mg/l/96h OECD Guideline 203, Oncorhynchus mykiss

EC50 - for Crustacea

> 3,4 mg/l/48h OECD Guideline 202, Daphnia magna

EC50 - for Algae / Aquatic Plants

1,3 mg/l/72h OECD Guideline 201, Pseudokirchneriella subcapitata

2,2-BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

LC50 - for Fish

1,5 mg/l/96h OECD Guideline 203, Oncorhynchus mykiss

EC50 - for Crustacea

1,7 mg/l/48h OECD Guideline 202, Daphnia magna

EC50 - for Algae / Aquatic Plants

9,4 mg/l/72h EPA-660/3-75-009, Scenedesmus capricornutum

**SECTION 12. Ecological information ... / >>**

Chronic NOEC for Crustacea 0,3 mg/l OECD Guideline 211, Daphnia magna, 21 d

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIRANE

LC50 - for Fish 2,54 mg/l/96h OECD Guideline 203
EC50 - for Crustacea 2,55 mg/l/48h OECD Guideline 202, Daphnia magna
EC50 - for Algae / Aquatic Plants 1,8 mg/l/72h OECD Guideline 201, Pseudokirchneriella subcapitata
Chronic NOEC for Crustacea 0,3 mg/l OECD Guideline 211, Daphnia magna, 21 d

TOLUENE

LC50 - for Fish 5,5 mg/l/96h
EC50 - for Crustacea 3,78 mg/l/48h
EC50 - for Algae / Aquatic Plants 134 mg/l/72h

TRIZINC BIS (ORTHOPHOSPHATE)

LC50 - for Fish 0,78 mg/l/96h Pimephales promelas
EC50 - for Crustacea 0,147 mg/l/48h Ceriodaphnia dubia
EC50 - for Algae / Aquatic Plants 0,136 mg/l/72h Selenastrum capricornutum
Chronic NOEC for Fish 0,44 mg/l 72 d, Oncorhynchus mykiss
Chronic NOEC for Crustacea 0,037 mg/l

ZINC OXIDE

LC50 - for Fish 0,169 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea 0,147 mg/l/48h Ceriodaphnia dubia
EC50 - for Algae / Aquatic Plants 0,136 mg/l/72h Selenastrum capricornutum
Chronic NOEC for Fish 0,53 mg/l
Chronic NOEC for Algae / Aquatic Plants 0,024 mg/l

12.2. Persistence and degradability

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIRANE
NOT rapidly degradable

PHOSPHORIC ACID

Solubility in water > 850000 mg/l
Degradability: information not available

XYLENE (MIXTURE OF ISOMERS)

Solubility in water 100 - 1000 mg/l
Rapidly degradable

2-METHOXY-1-METHYLETHYL ACETATE

Solubility in water > 10000 mg/l
Rapidly degradable

TOLUENE

Solubility in water 100 - 1000 mg/l
Rapidly degradable

ETHYLBENZENE

Solubility in water 1000 - 10000 mg/l
Rapidly degradable

ISOPROPANOL

Rapidly degradable

ETHYL ACETATE

Solubility in water > 10000 mg/l
Rapidly degradable

N-BUTYL ACETATE

Solubility in water 1000 - 10000 mg/l



SECTION 12. Ecological information ... / >>

TRIZINC BIS (ORTHOPHOSPHATE)
Solubility in water 2,7 mg/l
Degradability: information not available

ZINC OXIDE
Solubility in water 2,9 mg/l
NOT rapidly degradable

12.3. Bioaccumulative potential

2,2-BIS-[4-(2,3-EPOXI)PHENYL]PROPANE
Partition coefficient: n-octanol/water 3,2 Log Kow OECD Guideline 117

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND
2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIRANE
Partition coefficient: n-octanol/water 3,6 Log Kow OECD Guideline 117

XYLENE (MIXTURE OF ISOMERS)
Partition coefficient: n-octanol/water 3,12
BCF 25,9

2-METHOXY-1-METHYLETHYL ACETATE
Partition coefficient: n-octanol/water 1,2

TOLUENE
Partition coefficient: n-octanol/water 2,73
BCF 90

ETHYLBENZENE
Partition coefficient: n-octanol/water 3,6

ISOPROPANOL
Partition coefficient: n-octanol/water 0,05

ETHYL ACETATE
Partition coefficient: n-octanol/water 0,68
BCF 30

N-BUTYL ACETATE
Partition coefficient: n-octanol/water 2,3
BCF 15,3

ZINC OXIDE
BCF > 175

12.4. Mobility in soil

XYLENE (MIXTURE OF ISOMERS)
Partition coefficient: soil/water 2,73

N-BUTYL ACETATE
Partition coefficient: soil/water < 3

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. Other adverse effects

Information not available



SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

14.1. UN number or ID number

ADR / RID, IMDG, IATA: 1263

14.2. UN proper shipping name

ADR / RID: PAINT RELATED MATERIAL
IMDG: PAINT RELATED MATERIAL
IATA: PAINT RELATED MATERIAL

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: II

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous



IMDG: Marine Pollutant



IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 33	Limited Quantities: 5 L	Tunnel restriction code: (D/E)
	Special provision: 163, 367, 640D, 650		
IMDG:	EMS: F-E, S-E	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 60 L	Packaging instructions: 364
	Passengers:	Maximum quantity: 5 L	Packaging instructions: 353
	Special provision:	A3, A72, A192	

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant



SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU: _____ P5c-E2

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006 _____

Product		
Point	3 - 40	
Contained substance		
Point	75	
Point	48	TOLUENE REACH Reg.: 01-2119471310-51

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
not applicable

Substances in Candidate List (Art. 59 REACH) _____

On the basis of available data, the product does not contain any SVHC in percentage \geq than 0,1%.

Substances subject to authorisation (Annex XIV REACH) _____

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012: _____

None

Substances subject to the Rotterdam Convention: _____

None

Substances subject to the Stockholm Convention: _____

None

Healthcare controls _____

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

VOC (Directive 2004/42/EC) : _____

Two-pack reactive performance coatings for specific end use such as floors.

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Skin Corr. 1B	Skin corrosion, category 1B
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Skin Sens. 1	Skin sensitization, category 1
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H361d	Suspected of damaging the unborn child.

**SECTION 16. Other information ... / >>**

H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH205	Contains epoxy constituents. May produce an allergic reaction.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)

**SECTION 16. Other information ... / >>**

20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.