LIQUID

Safety Data Sheet
Enkopur

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1	Product identifier	Enkopur
1.2	Relevant identified uses of the substance or mixture and uses advised against	
	Use of the substance/mixture:	Roof waterproofing
	Uses advised against	Do not use for sputtering or spraying.
1.3	Details of the supplier of the safety data sheet: Street: Place: Telephone: Telefax E-mail: Internet: Responsible department:	ENKE-Werk Johannes Enke GmbH & Co. KG Hamburger Str. 16 40221 Düsseldorf, Germany +49 (0) 211 / 30 40 74 +49(0)211/ 39 37 18 info@enke-werk.de www.enke-werk.de/en On weekdays between 7 a.m. and 4 p.m.
1.4	Emergency telephone number:	Poison Information Centre (24h): +49 (0) 551 / 19 240

SECTION 2: HAZARD IDENTIFICATION

2.1	Classification of the substance or mixture	
	Regulation (EC) No. 1272/2008	
	Hazard categories:	
	Serious eye damage/eye irritation:	Eye Irrit. 2
	Respiratory or skin sensitisation	Resp. Sens. 1
	Respiratory or skin sensitisation:	Skin Sens. 1
	Hazardous to the aquatic environment:	Aquatic Chronic 3
	Hazard Statements:	
	May cause an allergic skin reaction.	
	Causes serious eye irritation.	
	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
	Toxic to aquatic life with long lasting effects.	
2.2	Label elements	
	Regulation (EC) No. 1272/2008	
	Hazard components for labelling	Aromatic polyisocyanate prepolymer 1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl)carbamate 2-ethylhexyl (6-isocyanatohexyl) carbamate 4-methyl-m-phenylene diisocyanate, toluene-2,4-di-isocyanate
	Signal word:	Danger
	Pictograms:	
		
	Hazard statements	
	H317	May cause an allergic skin reaction.
	H319	Causes serious eye irritation.
	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

	H411	Toxic to aquatic life with long lasting effects.
	Precautionary statements	
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P302+P352	IF ON SKIN: Wash with plenty of water.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
	Special labelling of certain mixtures	
	EUH204	Contains isocyanates. May produce an allergic reaction.
	EUH208	Contains terbutryn and 4,5-dichloro -2-octyl -2H-isothiazol -3-one. May produce an allergic reaction.
2.3	Other hazards	No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2	Mixtures
	Chemical characterization
	Mixture of a polyisocyanates-prepolymer, additives and pigments
	Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
37273-56-6	Aromatic polyisocyanate prepolymer			30 - 50 %
	Eye Irrit. 2, Skin Sens. 1; H319 H317			
140921-24-0	1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl)carbamate			3 - 6 %
	411-700-4	616-079-00-5		
	Skin Sens. 1; H317			
1330-20-7	xylene			< 5 %
	215-535-7	601-022-00-9		
	Flam. Liq. 3, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2; H226 H332 H312 H315			
64742-82-1	Hydrocarbons , C9 - C12 , n- alkanes , iso- alkanes, cyclic, aromatic (2-25 %)			< 3 %
	919-446-0			
	Flam. Liq. 3, STOT SE 3, Asp. Tox. 1, Aquatic Chronic 2; H226 H336 H304 H411 EUH066			
26488-60-8	2-ethylhexyl (6-isocyanatohexyl) carbamate			< 2 %
	247-735-5			
	Acute Tox. 3, Resp. Sens. 1, Skin Sens. 1B, STOT SE 3; H331 H334 H317 H335			
886-50-0	terbutryn			< 1 %
	Acute Tox. 4, Skin Sens. 1, Aquatic Acute 1 (M-Factor = 100), Aquatic Chronic 1 (M-Factor = 100); H302 H317 H400 H410			
584-84-9	4-methyl-m-phenylene diisocyanate, toluene-2,4-di-isocyanate			< 0,2 %
	209-544-5	615-006-00-4		
	Carc. 2, Acute Tox. 2, Eye Irrit. 2, STOT SE 3, Skin Irrit. 2, Resp. Sens. 1, Skin Sens. 1, Aquatic Chronic 3; H351 H330 H319 H335 H315 H334 H317 H412			
64359-81-5	4,5-dichloro -2-octyl -2H- isothiazol -3-one			< 0,1 %
	Met. Corr. 1, Acute Tox. 2, Acute Tox. 4, Skin Corr. 1C, Skin Sens. 1A, Aquatic Acute 1 (M-Factor = 100), Aquatic Chronic 1 (M-Factor = 10); H290 H330 H302 H314 H317 H400 H410			

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

SECTION 4: FIRST AID MEASURES

4.1	Description of first aid measures	
	After inhalation	Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.
	After contact with skin	After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse.
	After contact with eyes	After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
	After ingestion	Rinse mouth immediately and drink plenty of water. Medical treatment necessary.
4.2	Most important symptoms and effects, both acute and delayed	No information available.

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

SECTION 5: FIREFIGHTING MEASURES

5.1	Extinguishing media	
	Suitable extinguishing media	Powder, Foam, Water spray jet, Carbon dioxide (CO2).
5.2	Special hazards arising from the substance or mixture	In case of fire may be liberated: Carbon monoxide, Nitrogen oxides (NOx); Possible in traces: Isocyanates, Hydrogen cyanide (hydrocyanic acid)
5.3	Advice for firefighters	Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.
	Additional information	Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	Personal precautions, protective equipment and emergency procedures	Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.
6.2	Environmental precautions	Do not allow uncontrolled discharge of product into the environment.
6.3	Methods and material for containment and cleaning up	Pick up mechanically. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Put into waste containers after 1 hour. Fill collected, contaminated material into clean and labelled "open-top-drums". Do not seal gas-tight. Danger of burst! Keep humid and store safely in the open for 1-2 weeks. Treat the recovered material as prescribed in the section on waste disposal.
6.4	Reference to other sections	Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

SECTION 7: HANDLING AND STORAGE

7.1	Precautions for safe handling	
	Advice on safe handling	If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.
	Advice on protection against fire and explosion	Keep away from sources of ignition - No smoking.
7.2	Conditions for safe storage, including any incompatibilities	
	Requirements for storage rooms and vessels	Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot

		surfaces, sparks, open flames and other ignition sources. No smoking.
7.3	Specific end use(s)	Roof waterproofing

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
-	Isocyanates, all (as -NCO) Except methyl isocyanate	-	0.02		TWA (8 h)	WEL
		-	0.07		STEL (15 min)	WEL
1330-20-7	Xylene: mixed isomers	50	220		TWA (8 h)	WEL
		100	441		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
1330-20-7	Xylene, o-, m-, p- or mixed isomers	methyl hippuric acid	650 mmol/mol	urine	Post shift

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
64742-82-1	Hydrocarbons, C9 - C12, n- alkanes, iso- alkanes, cyclic, aromatic (2-25 %)			
Worker DNEL, long-term		dermal	systemic	44 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	330 mg/m³
Consumer DNEL, long-term		dermal	systemic	26 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	71 mg/m³
Consumer DNEL, long-term		oral	systemic	26 mg/kg bw/day

8.2	Exposure controls	
	Appropriate engineering controls	Provide fresh air. If handled uncovered, arrangements with local exhaust ventilation must be used. Do not breathe gas/fumes/vapour/spray.
	Protective and hygiene measures	Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.
	Eye/face protection	Suitable eye protection: goggles.
	Hand protection	When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Our recommendation is as follows: Suitable materials for prolonged, direct contact (at least protection index 6, corresponding to> 480 minutes permeation time according to EN 374): Neoprene®, Viton®, PVC, butyl or nitrile rubber. Dispose of contaminated gloves. With proper, optimized

		operation, only short-term contact and liquid splashes are to be expected, therefore, according to DGUV Information 212-007, a glove with a minimum protection class of 1 (<10 min) is sufficient. It must be ensured that the gloves are changed at short notice in case of chemical contact.
	Skin protection	Wear suitable protective clothing.
	Respiratory protection	In case of inadequate ventilation wear respiratory protection. Fresh air mask. Short term filter device: A2 - P2.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1	Information on basic physical and chemical properties		
	Physical State	Liquid	
	Colour	different colours	
	Odour	weak, characteristic	
			Test Method
	pH-Value	not determined	
	Changes in the physical state		
	Melting point:	not determined	
	Initial boiling point and boiling range:	> 100 °C	
	Flash point:	48 °C	
	Sustaining combustion:	Not sustaining combustion	
	Flammability		
	Solid:	not applicable	
	Gas:	not applicable	
	Lower explosion limits:	not determined	
	Upper explosion limits:	not determined	
	Auto-ignition temperature		
	Solid:	not applicable	
	Gas:	not applicable	
	Decomposition temperature:	not determined	
	Oxidizing properties		
	Not oxidising.		
	Vapour pressure:	not determined	
	Density (at 20 °C):	~ 1,4 g/cm³	
	Water solubility:	The study does not need to be conducted because the substance is known to be insoluble in water.	
	Solubility in other solvents		
	not determined		
	Partition coefficient:	not determined	
	Viscosity / dynamic: (at 20 °C)	~ 7000 mPa·s	DIN 53018
	Vapour density:	not determined	
	Evaporation rate:	not determined	
9.2	Other information		
	Solid content:	not determined	

SECTION 10: STABILITY AND REACTIVITY

10.1	Reactivity	No hazardous reaction when handled and stored according to provisions.
10.3	Possibility of hazardous reactions	Exothermic reaction with: Amines, Alcohols; Reaction with water or humidity may form CO2. Risk of bursting!

10.4	Conditions to avoid	none
10.6	Hazardous decomposition products	No hazardous reaction when handled and stored according to provisions. No known hazardous decomposition products.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
37273-56-6	Aromatic polyisocyanate prepolymer				
	oral	LD50 > 5000 mg/kg	Rat		
	inhalative (4 h) aerosol	LC50 >3,820 mg/l			
1330-20-7	xylene				
	dermal	ATE 1100 mg/kg			
	inhalative vapour	ATE 11 mg/l			
	inhalative aerosol	ATE 1,5 mg/l			
64742-82-1	Hydrocarbons, C9 - C12, n- alkanes, iso-alkanes, cyclic, aromatic (2-25 %)				
	oral	LD50 >15000 mg/kg	Rat	OECD 401	
	dermal	LD50 ~ 3400 mg/kg	Rabbit	OECD 402	
26488-60-8	2-ethylhexyl (6-isocyanatohexyl) carbamate				
	oral	LD50 > 2500 mg/kg	Rat	OECD 423	
	inhalative vapour	ATE 3 mg/l			
	inhalative (4 h) aerosol	LC50 0,521 mg/l	Rat	OECD 403	
886-50-0	terbutryn				
	oral	ATE 500 mg/kg			
584-84-9	4-methyl-m-phenylene diisocyanate, toluene-2,4-di-isocyanate				
	oral	LD50 5800 mg/kg	Rat	RTECS	
	dermal	LD50 >19000 mg/kg	Rabbit	RTECS	
	inhalative (4 h) vapour	LC50 0,1 mg/l	Rat	RTECS	
	inhalative aerosol	ATE 0,05 mg/l			
64359-81-5	4,5-dichloro -2-octyl -2H- isothiazol -3-one				
	oral	ATE 500 mg/kg			
	inhalative vapour	ATE 0,5 mg/l			
	inhalative aerosol	ATE 0,05 mg/l			

Irritation and corrosivity	Causes serious eye irritation.
Sensitising effects	May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Additional information on tests	The mixture is classified as hazardous according to

		regulation (EC) No 1272/2008 [CLP].
	Further information	Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.

SECTION 12: ECOLOGICAL INFORMATION

12.1	Toxicity	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
64742-82-1	Hydrocarbons, C9 - C12, n-alkanes, iso-alkanes, cyclic, aromatic (2-25 %)						
	Acute fish toxicity	LC50	10 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	OECD 203	
	Acute algae toxicity	ErC50	4,6 mg/l	72 h	Pseudokirchneriella subcapitata		
	Acute crustacea toxicity	EC50	10 mg/l	48 h	Daphnia magna (Big water flea)	OECD 202	
26488-60-8	2-ethylhexyl (6-isocyanatohexyl) carbamate						
	Acute fish toxicity	LC50 mg/l	> 100	96 h	Brachydanio rerio (zebra-fish)	OECD 203	
	Acute algae toxicity	ErC50	> 1 mg/l	72 h	Desmodesmus subspicatus	OECD 201	
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna (Big water flea)	OECD 202	
	Acute bacteria toxicity	(64 mg/l)		3 h	Activated sludge	OECD 209	
584-84-9	4-methyl-m-phenylene diisocyanate, toluene-2,4-di-isocyanate						
	Acute fish toxicity	LC50	164 mg/l	96 h	Pimephales promelas		
	Acute crustacea toxicity	EC50 mg/l	12,5	48 h	Daphnia magna		

12.2	Persistence and degradability	The product has not been tested.
12.3	Bioaccumulative potential	The product has not been tested.
12.4	Mobility in soil	The product has not been tested.
12.5.	Results of PBT and vPvB assessment	The product has not been tested.
12.6.	Other adverse effects	No information available.
	Further information	Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1	Waste treatment methods

	Advice on disposal Disposal of packaging:	Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Adhering to the official regulations, it can be disposed of in appropriate incinerator. Cured residual material can be disposed of with household waste. Containers have to be emptied completely and free of drops after final product removal. Emptied packages can be returned to the partners of Kreislaufsystem Blechverpackungen Stahl (Recycling system for metal containers). Collection points are provided by the ENKE company as user of the mark.
	Waste disposal number of waste from residues/unused products	080111 - WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU and removal of paint and varnish; waste paint and varnish containing organic solvents or other hazardous substances; hazardous waste
	Waste disposal number of used product	080111 - WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS ANDPRINTING INKS; wastes from MFSU and removal of paint and varnish; waste paint and varnish containing organic solvents or other hazardous substances; hazardous waste
	Contaminated packaging	This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: TRANSPORT INFORMATION

Land transport (ADR/RID)		
14.1	UN number:	UN 3082
14.2	UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3	Transport hazard class(es):	9
14.4	Packing group:	III
	Hazard label	9
	Classification code:	M6
	Special Provisions:	274 335 601
	Limited quantity:	5L
	Transport category:	3
	Hazard No:	90
	Tunnel restriction code	E
	Other applicable information (land transport)	E1
Inland waterways transport (ADN)		
14.1	UN number:	UN 3082
14.2	UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3	Transport hazard class(es):	9
14.4	Packing group:	III
	Hazard label:	9
	Classification code:	M6
	Special Provisions:	274 335 601
	Limited quantity:	5L
	Excepted quantity:	E1
Marine transport (IMDG)		
14.1	UN number:	UN 3082

14.2	UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3	Transport hazard class(es):	9
14.4	Packing group:	III
	Hazard label:	9
	Marine Pollutant:	yes
	Special Provisions:	274, 335
	Limited quantity:	5L
	Excepted quantity:	E1
	EmS	F-A, S-F
Air transport (ICAO-TI/IATA-DGR)		
14.1	UN number:	UN 3082
14.2	UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3	Transport hazard class(es):	9
14.4	Packing group:	III
	Hazard label:	9
	Special Provisions:	A97 A158 A197
	Limited quantity Passenger:	30 kg G
	Passenger LQ:	Y964
	Excepted quantity:	E1
	IATA-packing instructions - Passenger: IATA-max. quantity – Passenger:	964 450 L
	IATA-packing instructions - Cargo: IATA-max. quantity - Cargo:	964 450 L
14.5	Environmental hazards	
	ENVIRONMENTALLY HAZARDOUS:	yes
	Danger releasing substance:	terbutryn, 4,5-dichloro -2-octyl -2H- isothiazol -3-one
14.6	Special precautions for user	No information available.
14.7.	Transport in bulk according to Annex II of Marpol and the IBC Code	not applicable

SECTION 15: REGULATORY INFORMATION

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture	
	EU regulatory information	
	Additional information	To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC
	National regulatory information	
	Employment restrictions:	Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
	Water contaminating class (D):	2 - clearly water contaminating
	Skin resorption/Sensitization:	Causes allergic hypersensitivity reactions.
15.2	Chemical safety assessment	
	Chemical safety assessments for substances in this mixture were not carried out.	

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
EINECS:	European Inventory of Existing Commercial Chemical Substances
ELINCS:	European List of Notified Chemical Substances
CAS:	Chemical Abstracts Service
LC50:	Lethal concentration, 50%
LD50:	Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
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.
EUH204	Contains isocyanates. May produce an allergic reaction.
EUH208	Contains terbutryn and 4,5-dichloro -2-octyl -2H- isothiazol -3-one. May produce an allergic reaction.

Last update date (ENKE-Werk)	02.08.2018
Moy Materials Ltd version prepared by	Martin Bidewell

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.