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HEALTH AND SAFETY DATA SHEET

1. IDENTIFICATION

Chemical Name: Polyurethane Sealant

2. HAZARD IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02 Flame

Flam. Liq 3 H226 Flammable liquid and vapour



GHS08 Health Hazard

H334 may cause allergy systems or breathing difficulties

Carc.2

H351 Suspected of causing cancer'

STOT RE 2

H373 May cause damage to organs through prolonged or repeated exposure' Route of Inhalation

Asp. Tox. I

H 304 May be fatal if swallowed and enters airways.



GHS07

Acute Tox' 4

H332 Harmful if inhaled

Skin Irrit .2

H315 Causes skin irritation

Eye Irrit. 2

H319 Causes serious eye irritation

SkinSens. 1

H317 May cause an allergic skin reaction'

STOT SE 3

May cause respiratory irritation.

Aquatic Chronic 3 - Harmful to aquatic life with long lasting effects (when uncured)

Classification according to Directive 67/548/EEC or Directive 1999/45/ EC



Xn; Harmful

R20/2 1-40-48/20:

Harmful by inhalation and in contact with skin. Limited evidence of a carcinogenic effect.

Harmful: danger of serious damage to health by prolonged exposure through inhalation.



Xn; Sensitising

R42/43:

May cause sensitisation by inhalation and skin contact



Xn; irritant

R36/37/38

Irritating to eyes, respiratory system and skin.

R10-52/53:

Flammable. Harmful to aquatic organism. May cause long- term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment:

The product has to been labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

Label elements

Labelling according to Regulation (EC) No 1272/2008

This product is classified and labelled according to the CLP regulation.

Hazard Pictograms



GHS02 GHS07 GHS08

Signal word HARMFUL

Hazard-determining components of labelling:

Diphenylmethanediiisoyanate, isomers and homologues

Xylene, mixture of isomers

Hydrocarbons, C9, aromatic, ethylenzene

Hazard Statements

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H315 Causes skin imitation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure. By inhalation

H304 May be fatal if swallowed and enters airways.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, hate product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P210 Keep away from heat/sparks /open. Flames/hot surfaces. - NO smoking.

P233 Keep container tightly closed.

P260 Do not breathe mist/vapours/spray.

P301+P310	IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331	Do NOT induce vomiting.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local / regional / national International regulations.

Additional information:

Contains isocyanates. May produce an allergic reaction.

Other hazards

Persons already sensitised to diisocyanates may develop allergic reactions when using this product.

Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.

This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

Results of PBT and vPvB assessment






















PBT: Not applicable. vPvB: Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components :

CAS:9016-87-9 EC number: 618-498-9	Diphenylmethanediisocyanate, isomers and homologues  Xn R20-40-48/20  Xn R42/43  Xi R36/37/38 Carc. Cat. 3 <hr/>  Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373  Acute Tox. 4, H332; Skin irrit. 2, H315; Eye Irrit. 2, H319 Skin sens 1 H317; STOT SE 3, H335	20-50%
CAS: 1330-20-7 EINECS: 215-535-7 Reg.nr. : 01-21194861 36-34 01-21 19488216-32	xylene, mixture of isomers  Xn R20/21;  Xi R38 R10 <hr/>  Flam. Liq. 3, H226;  STOT RE 2, H373; Asp. Tox. 1, H304;  Acute Tox. 4, H312; Acute Tox. 4, H332; Skin irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	25-50%
CAS. 64742-95-6 EC number: 918-668-5 Reg.No: 01-21 1945585 1-35	Hydrocarbons, C9 aromatics  Xn R65;  Xi R37  N R51/53 <hr/>  Flam. Liq. 2, H226;  Asp. Tox 1, H304;  Aquatic Chronic 2, H411;  STOT SE 3, H335-H336	10-25%
CAS. 25322-69-4 NLP 500-039-8	Propane- 1, 2 - diol, propoxylated  Xn R22 <hr/>  Acute Tox. 4, H302	10-25%
CAS:100-41-4 EINECS: 202-849-4 Reg.nr. : 01-2119189370-35 02-21 19752523-40	ethylbenzene  Xn R20;  F R11	2.5-10%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. FIRST AID MEASURES

Description of First Aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident

Personal protection for the First Aider.

Take affected persons out of danger area and lay down.

In case of it regular breathing or respiratory arrest provide artificial respiration.

Immediately remove any clothing soiled by the product.

After inhalation

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Use skin protection cream for skin protection.

If skin irritation continues, consult a doctor.

After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

Call a doctor immediately.

After swallowing: Do not induce vomiting; call for medical help immediately.

Information for doctor:

Most important symptoms and effects, both acute und delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Violent reaction with water at higher temperatures.

For safety reasons unsuitable extinguishing agents: Water with full jet

Special Hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

Carbon monoxide and carbon dioxide

Nitrogen oxides Q,_{Ox)

Hydrogen cyanide (HCN)

Advice for Fire fighters

Protective equipment:

Wear self- contained respiratory protective device.

Wear fully protective suit.

Do not inhale explosion gases or combustion gases.

Additional information

Cool endangered receptacles with water spray.

Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.
Avoid contact with the eyes and skin.
Ensure adequate ventilation
Do not inhale gases /fumes / aerosols.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Keep away from ignition sources.

Environmental precautions:

Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Pls. refer to section I0
Do not seal receptacle gas tight.
Danger of bursting.
Dispose contaminated material as waste according to item I3.

Reference to other sections

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section I3 for disposal information.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling

Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace
Avoid contact with the eyes and skin.
Do not inhale gases / fumes / aerosols.
(Use respiratory protective device against the effects of fumes/dust/aerosol.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.
Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.
Fumes can combine with air to form an explosive mixture.
Protect against electrostatic charges.
Use explosion-proof apparatus / fittings and spark-proof tools.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store only in the original receptacle.
Adhere to the provisions of the Law on Water Protection.

Information about storage in one common storage facility:

Pls. refer to section I0

Keep away from foodstuff, beverages and feed.

***Further information about storage conditions:**

Store in cool, dry conditions in well sealed receptacles.

Store receptacle in a well ventilated area.

Protect from heat and direct sunlight.

Keep ignition sources away - Do not smoke.

Anti- explosion protection required

Recommended storage temperature: + 15 oC - +25 oC

Specific end use(s) No further relevant information available.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Additional information about design of technical facilities. No further data, see item 7

Control parameters

Ingredient with limit values that require monitoring at the workplace:

9016-87 Diphenylmethanediisoyanate, isomers and homologues

WEL (Great Britain)	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
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1330-20-7 xylene, mixture of isomers

WEL (Great Britain)	Short-term value: 441 mg/m ³ , 100 ppm Long-term value: 220 mg/m ³ , 50 ppm SK; BMGV
IOELV (EU)	Short-term value: 442 mg/m ³ , 100 ppm Long-term value: 221 mg/m ³ , 50 ppm Skin

100-41-4 ethylbenzene

WEL (Great Britain)	Short-term value: 552 mg/m ³ , 125 ppm Long-term value: 441 mg/m ³ , 100 ppm SK
IOELV (EU)	Short-term value: 884 mg/m ³ , 200 ppm Long-term value: 142 mg/m ³ , 100 ppm Skin

DNELS

1330-20-7 xylene, mixture of isomers

Oral	Long-term exposure - systemic effects	1.6 mg/kg bw/day
Dermal	Long-term exposure - systemic effects	(general population) 108 mg/kg bw/day
Inhalative	Acute/short-term exposure - local effects	(general population) 180 mg/kg bw/day
	Acute/short-term exposure - systemic effects	(worker) 174 mg/m3 (general population)
	Long-term exposure - systemic effects	289 mg/m3 (worker) 174 mg/m3 (general population) 289 mg/m3 (worker) 14.8 mg/m3 (general population) 77 mg/mr (worker)

64742-9 5-6 Hydrocarbons, C9, aromatics

Oral	Long-term exposure - systemic effects	11 mg/kg bw/day (general population)
Dermal	Long-term exposure - systemic effects	11 mg/kg bw/day (general population)
Inhalative	Long-term exposure - systemic effects	25 mg/kg bw/day (worker) 32 mg/m3 (general population) 150 mg/m3 (worker)

100-41-4 ethylbenzene

Oral	Long-term exposure - systemic effects	1.6 mg/kg btu/day (general population)
Dermal	Long-term exposure - systemic effects	180 mg/kg bw/day (worker)
Inhalative	Acute/short-term exposure - local effects	293 mg/m3 (worker)
	Long-term exposure - systemic effects	15 mg/m3 (general population) 77 mg/m3 (worker)

,PNECS

1330-20-7 xylene, mixture of isomers

PNEC STP	6.8 mg/t o
PNEC aqua	0.327 mg/l (freshwater) 0.327 mg/l (marine water) 0.327 mg/l (intermittent releases)
PNEC sediment	12.46 mg/kg (freshwater) 12.46 mg/kg (marine water)

100-41-4 ethylbenzene

PNEC aqua	9.6 mg/l (-)
PNEC oral	0.1 mg/l (freshwater) 0.01 mg/l (marine water) 0.1 mg/l (intermittent releases)
PNEC oral	0.02 mg/kg (-)
PNEC sediment	13.7 mg/kg (freshwater) 2.68 mg/kg (marine water)
PNEC soil	2.68 mg/kg (soil dw)

' Ingredients with biological limit values:

1330-20-7 xylene, mixture of isomers

BMGV (Great Britain)	650 mmol/mol creatinine Medium: urine Sampling time: post shift Parameter: methyl hippuric acid
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9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

General Information

Appearance:

Form: Fluid
Colour: Brown
Odour: Like aromatic
pH-value: Not determined

Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 137 °C
Flash point: 30 °C
Ignition Temp: 355 °C
Self-igniting: Product is not self igniting
Danger of explosion: Product is not explosive, however, formation of explosive air/vapour mixtures are possible

Explosion limits:

Lower: 0.7 Vol %
Upper: 7.5 Vol %
Vapour pressure: Not determined
Density at 20 °C: 1 g/cm³
Vapour density Not determined
Solubility in / Miscibility with water: Not miscible or difficult to mix.

Partition coefficient (n-octanol/water): Not determined

Viscosity:

Dynamic: Not determined.
Kinematic at 40 °C: < 20.5 mm²/s (ISO 3104)

Other information No further relevant information available.

10. STABILITY AND REACTIVITY

- Reactivity** No decomposition if used according to specifications.
- Chemical stability** No decomposition if used and stored according to specifications.
- Possibility of hazardous reductions**
- Fumes can combine with air to form an explosive mixture.
- Reacts with numerous chemical compounds, especially those with mobile hydrogen atoms.
- Reacts with alcohols, amines, aqueous acids and alkalis.
- Reacts with water.
- Do not seal receptacle gas tight.
- Danger of bursting.
- ' Conditions to avoid No further relevant information available.
- ' Incompatible Materials : No further relevant information available e.
- ' Hazardous decomposition products: Formation of toxic gases is possible during heating or in case of. fire.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

LD/LC10 values relevant for classification:

9016-87-9 diphenylmethanediisocyanate, isomers and homologues

Oral	LD 50	> 10000 mg/kg (rat) (OECD 401)
Dermal	LD 50	> 9400 mg/kg (rabbit) (OECD 402)
Inhalative	LCs0/4h	1.5 mg/l (rat) (expert assessment, Dust/Mist)
	LC50 /4h	310 mg/m ³ (rat) (OECD-403, Aerosol)

1330-20-7 xylene, mixture of isomers

Oral	LD 50	> 4000 mg/kg (rat)
Dermal	LD 50	> 1700 mg/kg (rabbit)
Inhalative	LC50/4h	21,7 mg/l (rat) (Vapour)
	LCS0 /4h	5000 ppm (rat) (Gas)

64742-95-6 Hydrocarbons, C9, aromatics

Oral	LD 50	> 3500 mg/kg (rat) (OECD 401)
Dermal	LD 50	> 3160 mg/kg (rabbit) (OECD 402)
Inhalative	LCs0 /4h	> 6193 mg/m ³ (rat) (OECD Guideline 403, vapour)

2 5 3 2 2-69-4 Prop ane- 1,2-diol, prop oxylated

Oral	LD 50	>500 - < 2000 mg/kg (rat)
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100-41-4 ethylbenzene

Oral	LD50	3500 mg/kg (rat)
Dermal	LD 50	> 5000 mg/kg (rabbit)
Inhalative	LCs0 /4h	17.2 mg/l (rat)

Primary irritant effect:**on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.

Subject to chronic toxicity:		
9016-87-9 diphenylmethanediisocyanate, isomeres and homologues		
Inhalative	LOAEL	1 mg/m ³ (rat) (OECD 453, 2 a, 6h/day, Aerosol)
	NOAEL	0.2 mg/m ³ (rat) (OECD 453, 2 a, 6h/day, Aerosol)

Additional toxicological information :

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

Sensitisation May cause sensitisation by inhalation and skin contact.**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Limited evidence of a carcinogenic effect.

Carc. 2

Carcinogenicity		
9016-87-9 diphenylmethanediisocyanate isomeres and homologues		
Inhalative	LOAEL Carcinogenicity	6 mg/m ³ (rat) (OECD 453, 2a, 6h/day, Aerosol)

Reproductive toxicity/Fertility No information available.

" Reproductive toxicity/Teratogenicity		
9016-87-9 diphenylmethanediisocyanate isomers and homologues		
Inhalative	NOAEL (developmental toxicity)	0.004 mg/l (rat) (OECD 414, 20d, 6h/day, Aerosol)
	NOAEL (teratogenicity)	0.012 mg/l (rat) (OECD 414, 20d, 6h/day, Aerosol)
	NOAEL (maternally)	0.004 mg/l (rat) (OECD 414, 20d, 6h/day, Aerosol)

12. ECOLOGICAL INFORMATION**Toxicity****Aquatic toxicity:**

9016-87-9 diphenylmethanediisocyanate, isomers and homologues

EC50	> 1000 mg/l (daphnia magna) (24h, OECD 202)
EC50/3h	> 100 mg/l (activated slugde) (OECD 209)
EC50/72h	> 1640 mg/l (scenedesmus subspicatus) (OECD-2}1)
LC50/96h (static)	> 1000 mg/l (danio rerio) (OECD 203)
NOEC	> 10 mg/l (daphnia magna) (21 d, OECD 202)

1330-20-7 xylene mixture of isomers

EC50	> 175 mg/l (activated slugde)
EC50/48h	3.82 mg/l (daphnia magna)
EC50/72h	4, 7 mg/l (Pseudokirchneriella subcapitata)
LC50/96h	7.6 mg/l (oncorhynchus mykiss)
NOEC	> 1.3 mg/l (oncorhynchus mykiss) (56 d)
64742-9 5-6 Hydrocarbons, C9, aromatics	
EL50/48h	3.2 mg/l (daphnia) (OECD Guideline 202, mobility)
EL50/72h	2.9 mg/l (Pseudokirchneriella subcapitata) (OECD Guideline 201)
LL50/96h	9.2 mg/l (oncorhynchus aguabonita) (OECD Guideline 203)
NOELR (aqua chron.)	2.144 mg/l (daphnia magna) (21d, calculated by a computer model)
100-41-4 ethylbenzene	
EC50/48h	2.4 mg/l (daphnia magna) > 5.2 mg/l (americamysis bahia)
EC50/72h	4. 6 mg/l (Pseudokirchneriella subcapitata)
LC50/96h	4.2 mg/l (oncorhynchus mykiss)
Persistence and degradability	
9016-87-9 diphenylmethanediisocyanate isomeres and homologues	
BSB	<10 % (activated slugde) (OECD 302 C)
Biodegradation	0 % (activated slugde) (28d, OECD 302 C)
1330-20-7 xylene, mixture of isomers	
Biodegradation	87.8 % O (28d)
64742-95-6 Hydrocarbons, C9, aromatics	
Biodegradation	> 70 94 O (OECD Guideline 301 F, 2Bd)
100-41-4 ethylbenzene	
Biodegradation	>70 % (-) (28 d)
Behaviour in environmental systems	
Bio accumulative potential	
9016-87-9 diphenylmethanediisocyanate isomers and homologues	
1330-20-7 xylene, mixture of isomers	
BCF	6 - 23.4 (-)
log Pow	>3 (-)
100-41-4 ethylbenzene	
log Pow	3.1 (-)
Mobility in soil	No further relevant information available
Additional ecological information:	
General notes:	
Do not allow product to reach ground water, water course or sewage system.	
Danger to drinking water if even small quantities leak into the ground.	
Results of PBT and vPvB assessment	
PBT:	Not applicable.
vPvB:	Not applicable.
Other adverse effects	No further relevant information available.

13. WASTE DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation

Must not be disposed together with household garbage, Do not allow product to reach sewage system.

Waste disposal key:

The waste codes given above are to be considered recommendations; because of regional and industrial sector specific features, application of different waste codes is possible.

European waste catalogue

0801 11*	waste paint and varnish containing organic solvents or other dangerous substances
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Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

UN no

A DR/RID, IATA 1993

UN Proper Shipping Name

ADR 1993 FLAMMABLE LIQUID, N. O.S. (XYLEI,{ES, Solvent (XYLENES, Solvent naphtha, (petroleum), light arom.)

Transport hazard class(es)

ADR,IMDG,IATA



3 Flammable liquids.

Packing group

ADR,IMDG,IATA III

Environmental hazards:

Marine pollutant: No

Special precautions for user Warning : Flammable liquids.

EMS Number: F-E,S-E

Transport in bulk according to Annex II of MARPOL73/78 und the IBC Code

Not applicable.

15. REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation specific for the substance or allure
European regulations**

Directive 2004/42/EC 2004/42/IIA (i) (500) 494

National regulations:

Information about limitation of use:

Employment restrictions concerning juveniles must be observed'

Employment restrictions concerning pregnant and lactating women must be observed.

' Other regulations, limitations and prohibitive regulations

REACH ((EC) No 1907/2006), Annex XVII, no 56.

Adhere to the Ordinances on the Prohibition of Certain Chemicals.

Chemical safe) assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

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.

H373 May cause damage to organs through prolonged or repeated exposure. Route of exposure: Inhalative.

H411 Toxic to aquatic life with long lasting effects.

R10 Flammable.

R11 Highly flammable.

R20 Harmful by inhalation.

R20/21 Harmful by inhalation and in contact with skin.

R22 Harmful if swallowed.

R36/37/38 irritating to eyes, respiratory system and skin.

R37 Imitating to respiratory system.

R-38 Imitating to skin.

R40 Limited evidence of a carcinogenic effect.

R42/43 May cause sensitisation by inhalation and skin contact.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R5 1/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65 Harmful: may cause lung damage if swallowed.

R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness.