

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

1 Identification

- Product identifier
- Trade name: Epifanes Poly-urethane hardener Comp. B
- Application of the substance / the mixture
See our technical datasheet for application of this product.
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
W.Heeren & Zoon bv.
P.O. box 166
1430 AD Aalsmeer
Netherlands
tel.+31 297-360666
fax.+31 297-342078
email:info@epifanes.nl
- Information department: Research & Development.
- Emergency telephone number:
Emergency Phone Number (24 hours) CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

- Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

- Label elements

- GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms



GHS02



GHS07



GHS08

(Contd. on page 2)


Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 1)

- Signal word Warning
- Hazard-determining components of labeling:
Hexamethylen-1,6 diisocyanat homopolymeer
Xylene
hexamethylene-di-isocyanate
4-isocyanatosulphonyltoluene
- Hazard statements
H226 Flammable liquid and vapor.
H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
- Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 If swallowed: Immediately call a poison center/doctor.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- Classification system:
- NFPA ratings (scale 0 - 4)
 Health = 0
Fire = 2
Reactivity = 0
- HMIS-ratings (scale 0 - 4)

HEALTH	1
FIRE	2
REACTIVITY	0

 Health = 1
Fire = 2
Reactivity = 0
- Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Isocyanate resin in organic solvents

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 2)

· Dangerous components:		
CAS: 28182-81-2 NLP: 500-060-2	Hexamethyleen-1,6 diisocynaat homopolymeer ⚠ Flam. Liq. 3, H226 ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50-100%
CAS: 108-65-6 EINECS: 203-603-9 Index number: 607-195-00-7	2-methoxy-1-methylethyl acetate ⚠ Flam. Liq. 3, H226 ⚠ STOT SE 3, H336	25-50%
CAS: 1330-20-7 EINECS: 215-535-7	Xylene ⚠ 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. 2A, H319; STOT SE 3, H335	2.5-10%
CAS: 822-06-0 EINECS: 212-485-8 Index number: 615-011-00-1	hexamethylene-di-isocyanate ⚠ Acute Tox. 3, H331 ⚠ Resp. Sens. 1, H334 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	≤0.5%

· Additional information:

For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

- Description of first aid measures
- General information:
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
Supply fresh air and to be sure call for a 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.
Immediately rinse with water.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- Most important symptoms and effects, both acute and delayed
No further relevant information available.
- Indication of any immediate medical attention and special treatment needed
No further relevant information available.

US

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 3)

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture
During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
Prevent seepage into sewage system, workpits and cellars.
Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

· PAC-1:

28182-81-2	Hexamethyleen-1,6 diisocyaanat homopolymeer	7.8 mg/m ³
108-65-6	2-methoxy-1-methylethyl acetate	50 ppm
822-06-0	hexamethylene-di-isocyanate	0.018 ppm
98-59-9	tosyl chloride	0.45 mg/m ³

· PAC-2:

28182-81-2	Hexamethyleen-1,6 diisocyaanat homopolymeer	86 mg/m ³
108-65-6	2-methoxy-1-methylethyl acetate	1,000 ppm
822-06-0	hexamethylene-di-isocyanate	0.2 ppm
98-59-9	tosyl chloride	5 mg/m ³

· PAC-3:

28182-81-2	Hexamethyleen-1,6 diisocyaanat homopolymeer	510 mg/m ³
108-65-6	2-methoxy-1-methylethyl acetate	5000* ppm
822-06-0	hexamethylene-di-isocyanate	3 ppm
98-59-9	tosyl chloride	30 mg/m ³

US

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 4)

7 Handling and storage

- Handling:
- Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- Information about protection against explosions and fires:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.
- Conditions for safe storage, including any incompatibilities
- Storage:
- Requirements to be met by storerooms and receptacles:
Store only in the original receptacle.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems:
No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace:
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

108-65-6 2-methoxy-1-methylethyl acetate	
WEEL	Long-term value: 50 ppm
1330-20-7 Xylene	
PEL	Long-term value: 435 mg/m ³ , 100 ppm
REL	Short-term value: 655 mg/m ³ , 150 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV	Short-term value: 651 mg/m ³ , 150 ppm Long-term value: 434 mg/m ³ , 100 ppm BEI
822-06-0 hexamethylene-di-isocyanate	
REL	Long-term value: 0.035 mg/m ³ , 0.005 ppm Ceiling limit value: 0.14* mg/m ³ , 0.02* ppm *10-min
TLV	Long-term value: 0.034 mg/m ³ , 0.005 ppm BEI
108-65-6 2-methoxy-1-methylethyl acetate	
WEEL	Long-term value: 50 ppm

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 5)

1330-20-7 Xylene

PEL	Long-term value: 435 mg/m ³ , 100 ppm
REL	Short-term value: 655 mg/m ³ , 150 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV	Short-term value: 651 mg/m ³ , 150 ppm Long-term value: 434 mg/m ³ , 100 ppm BEI

822-06-0 hexamethylene-di-isocyanate

REL	Long-term value: 0.035 mg/m ³ , 0.005 ppm Ceiling limit value: 0.14* mg/m ³ , 0.02* ppm *10-min
TLV	Long-term value: 0.034 mg/m ³ , 0.005 ppm BEI

- Regulatory information
WEEL: Guide to Occupational Exposure Values (AIHA WEELs)
PEL: Guide to Occupational Exposure Values (OSHA PELs)
REL: Guide to Occupational Exposure Values (NIOSH RELs)
TLV: Guide to Occupational Exposure Values (TLV)
- Additional information:
The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
- Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Filter AX
- Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 6)

- Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- For the permanent contact gloves made of the following materials are suitable:
Butyl rubber, glove thickness 0.7 mm, > 480 min breakthrough time / permeation to EN374.
- Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- Appearance:

Form:	Fluid
Color:	According to product specification
- Odor: Characteristic
- Odor threshold: Not determined.
- pH-value: Not determined.
- Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	145 °C (293 °F)
- Flash point: 38 °C (100.4 °F)
- Flammability (solid, gaseous): Not applicable.
- Ignition temperature: 315 °C (599 °F)
- Decomposition temperature: Not determined.
- Auto igniting: Product is not selfigniting.
- Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
- Explosion limits:

Lower:	1.5 Vol %
Upper:	10.8 Vol %
- Vapor pressure at 20 °C (68 °F): 3.4 hPa (2.6 mm Hg)
- Density at 20 °C (68 °F): 1.05165 g/cm³ (8.77602 lbs/gal) (ISO 2811)
- Relative density: Not determined.
- Vapor density: Not determined.
- Evaporation rate: Not determined.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 7)

· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity: Dynamic:	Not determined.
Kinematic at 20 °C (68 °F):	43 s (DIN 53211/4)
· Solvent content:	
Organic solvents:	38.9 %
VOC content:	38.88 %
	VOC content: 408.9 g/l / 3.41 lb/gal
Solids content:	61.1 % (VB% 1h 150C)
· Other information	No further relevant information available.

10 Stability and reactivity

- Reactivity No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
- Possibility of hazardous reactions No dangerous reactions known.
- Conditions to avoid No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values that are relevant for classification:

108-65-6 2-methoxy-1-methylethyl acetate		
Oral	LD50	8532 mg/kg bw (rat)
Inhalative	LC50/4 h	35.7 mg/l (rat)
822-06-0 hexamethylene-di-isocyanate		
Oral	LD50	738 mg/kg bw (rat)
Dermal	LD50	593 mg/kg bw (rat)

- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: Sensitization possible through skin contact.
- Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:

(Contd. on page 9)

Safety Data Sheet
 acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 8)

Harmful
 Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

· Toxicity

· Aquatic toxicity:

108-65-6 2-methoxy-1-methylethyl acetate

EC50 408-500 mg/l (daphnia magna) (48 uur/hour)

IC 50 >1000 mg/l (Algae, Growth inhibition test) (72 uur/hour)

LC50 100-180 mg/l (Fish Acute Toxicity Study) (96 uur/hour)

· Persistence and degradability No further relevant information available.

· Behavior in environmental systems:

· Bioaccumulative potential No further relevant information available.

· Mobility in soil No further relevant information available.

· Additional ecological information:

· General notes:

Water hazard class 2 (Self-assessment): hazardous for water

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 Disposal considerations

· Waste treatment methods

· Recommendation:

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

· Uncleaned packagings:

· Recommendation: Disposal must be made according to official regulations.

US

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 9)

14 Transport information

· UN-Number
· DOT, ADR, IMDG, IATA UN1263

· UN proper shipping name
· DOT CONSUMER COMMODITY, ORM-D
Paint

· ADR 1263 PAINT

· IMDG CONSUMER COMMODITY, ORM-D
PAINT

· IATA PAINT

· Transport hazard class(es)

· DOT



· Class 3 Flammable liquids
· Label 3

· ADR



· Class 3 (F1) Flammable liquids
· Label 3

· IMDG, IATA



· Class 3 Flammable liquids
· Label 3

· Packing group

· DOT, ADR, IMDG, IATA III

· Environmental hazards:

· Marine pollutant: No

· Special precautions for user Warning: Flammable liquids

· Hazard identification number (Kemler code): 30

· EMS Number: F-E, S-E

· Stowage Category A

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

(Contd. on page 11)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 10)

· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· Remarks:	CERCLA/DOT RQ: 617gal./4786 lbs.
· ADR	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1263 PAINT, 3, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· Section 355 (extremely hazardous substances):	None of the ingredient is listed.
· Section 313 (Specific toxic chemical listings):	822-06-0 hexamethylene-di-isocyanate
· TSCA (Toxic Substances Control Act):	All components have the value ACTIVE.
· Hazardous Air Pollutants	1330-20-7 Xylene 822-06-0 hexamethylene-di-isocyanate
· Proposition 65	
· Chemicals known to cause cancer:	None of the ingredients is listed.
· Chemicals known to cause reproductive toxicity for females:	None of the ingredients is listed.
· Chemicals known to cause reproductive toxicity for males:	None of the ingredients is listed.
· Chemicals known to cause developmental toxicity:	None of the ingredients is listed.

(Contd. on page 12)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 11)

· Cancerogenity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS02



GHS07



GHS08

· Signal word Warning

· Hazard-determining components of labeling:
Hexamethylen-1,6 diisocyanat homopolymeer
Xylene

hexamethylene-di-isocyanate

4-isocyanatosulphonyltoluene

· Hazard statements

H226 Flammable liquid and vapor.

H332 Harmful if inhaled.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

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

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

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

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

P301+P310 If swallowed: Immediately call a poison center/doctor.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 13)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2021

Reviewed on 02/16/2021

Trade name: Epifanes Poly-urethane hardener Comp. B

(Contd. of page 12)

- National regulations:
- Technical instructions (air):

Class	Share in %
I	≤0.5
NK	25-50

- Water hazard class:
Water hazard class 2 (Self-assessment): hazardous for water.
- Chemical safety 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.

- Contact:
- Date of preparation / last revision 02/16/2021 / 5
- Abbreviations and acronyms:
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - ICAO: International Civil Aviation Organisation
 - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - NFPA: National Fire Protection Association (USA)
 - HMIS: Hazardous Materials Identification System (USA)
 - VOC: Volatile Organic Compounds (USA, EU)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - NIOSH: National Institute for Occupational Safety
 - OSHA: Occupational Safety & Health
 - TLV: Threshold Limit Value
 - PEL: Permissible Exposure Limit
 - REL: Recommended Exposure Limit
 - Flam. Liq. 3: Flammable liquids - Category 3
 - Acute Tox. 3: Acute toxicity - Category 3
 - Acute Tox. 4: Acute toxicity - Category 4
 - Skin Irrit. 2: Skin corrosion/irritation - Category 2
 - Eye Irrit. 2A: Serious eye damage/eye irritation - Category 2A
 - Resp. Sens. 1: Respiratory sensitisation - Category 1
 - Skin Sens. 1: Skin sensitisation - Category 1
 - STOT SE 3: Specific target organ toxicity (single exposure) - Category 3
 - STOT RE 2: Specific target organ toxicity (repeated exposure) - Category 2
 - Asp. Tox. 1: Aspiration hazard - Category 1
- * Data compared to the previous version altered.