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SAFETY DATA SHEET

according to Regulation (EU) No. 112000015889

1907/2006	Version 1.6
Revision Date	1.11.2010
Print Date	1.11.2010

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name : **HU-25**

Use : Hardener for coating materials or adhesives for industrial and trade applications

Company: SIA «WMT Baltic»
166b A. Deglava str., Riga, LV-1021
VAT Reg. Nr. LV40003400148
Tel.: 67 800 830, 67 800 833
Fax: 67 800 831, 67 800 832
Bank: AS «SWEDBANK»
Nor. konts: LV15 HABA 0551 0073 03071
S.W.I.F.T: HABALV22
e-mail: office@wmt.lv
http://www.wmt.lv

2. HAZARDS IDENTIFICATION

HAZARDOUS according to the criteria of NOHSC NON-DANGEROUS GOODS
May cause sensitization by skin contact.

3. COMPOSITION/INFORMATION ON INGREDIENTS

aliphatic polyisocyanate contains hexamethylene-1,6-diisocyanate homopolymer
Concentration [wt.-%]: ca. 100
CAS-No.: 28182-81-2
Classification: Xi R43
(classification according to definition principle)
Hexamethylene-1,6-diisocyanate
Concentration [wt.-%]: < 0,25
CAS-No.: 822-06-0
EINECS-No.: 212-485-8
Index-No.: 615-011-00-1
Classification: T R23 Xi R36/37/38 R42/43
Specific threshold concentration
Xn R20, R42/43 0,5 - < 2 %
T R23, R42/43 2 - < 20 %
T R23, R36/37/38, R42/43 >= 20 %

4. FIRST AID MEASURES

General advice: Take off all contaminated clothing immediately.
If inhaled: Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.
In case of skin contact: In case of skin contact wash affected areas thoroughly with soap and plenty of water. Consult a doctor in the event of a skin reaction.
In case of eye contact: Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.
If swallowed: DO NOT induce the patient to vomit, medical advice is required.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Carbon dioxide (CO2), Foam, extinguishing powder, in cases of larger fires, water spray should be used.
Unsuitable extinguishing media: High volume water jet Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapors and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes. During fire-fighting respirator with independent air-supply and airtight garment is required. Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Put on protective equipment (see chapter 8). Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.
Environmental precautions: Do not allow to escape into waterways, wastewater or soil.
Methods for cleaning up: Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO2!). Keep damp in a safe ventilated area for several days.
Additional advice: For further disposal measures see chapter 13.

7. HANDLING AND STORAGE

Handling: Provide sufficient air exchange and/or exhaust in work rooms. Exhaust ventilation necessary if product is sprayed. The threshold limit values noted in Chapter 8 must be monitored. In all areas where isocyanate aerosols and/or vapor concentrations are produced in elevated concentrations, exhaust ventilation must be provided in such a way that the workplace exposure limits (WEL) is not exceeded. The air should be drawn away from the personnel handling the product The personal protective measures described in Chapter 8 must be observed. The precautions required in the handling of isocyanates must be taken. Avoid contact with skin and eyes and the inhalation of vapor.
Storage: Keep container dry and tightly closed in a cool and well ventilated place. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters
Substance CAS-No. Basis Type Value Ceiling

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
Hexamethylene-1,6-diisocyanate	822-06-0	AU OEL	TWA	0,02 mg/m^3		
Hexamethylene-1,6-diisocyanate	822-06-0	AU OEL	STEL	0,07 mg/ m^3		

Exposition assessment value (EBW) per TGRS 430:Polyisocyanate content (HDI oligomers and/or prepolymers) 100 %. Use an exposition assessment value of 0,35 mg/m³.
Respiratory protection:
Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended.
In case of hypersensitivity of the respiratory tract and skin (e.g. asthmatics and those who suffer from chronic bronchitis and chronic skin complaint) it is inadvisable to work with the product.
Hand protection:
Suitable materials for safety gloves; EN 374-3:
Butyl rubber - IIR: thickness >=0,5mm; breakthrough time >=480min.
Fluorinated rubber - FKM: thickness >=0,4mm; breakthrough time >=480min.
Recommendation: contaminated gloves should be disposed of.
Eye protection:
Wear eye/face protection.
Skin and body protection:
Wear suitable protective clothing.
Hygiene measures:
Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at the end of workday. Keep working clothes separately. Take off all contaminated clothing immediately.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	colorless to yellow	
Form:	liquid	
Odour:	almost odourless	
Pour point:	ca. -37 ℃	ISO 3016
Initial boiling point:	not applicable, decomposition	

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Density:	ca. 1,16 g/cm³ at 20 ℃	DIN 53217
Vapour pressure:	1 hPa at 20 ℃ 2 hPa at 50 ℃	EG A4 EG A4
Viscosity, dynamic:	ca. 1.200 mPa.s at 23 ℃	DIN EN ISO 3219/A.3
Miscibility with water:	immiscible	
Flash point:	ca. 158 ℃	DIN 53213
Ignition temperature:	ca. 445 ℃	DIN 51794
Explosion limits:		
Hexamethylene-1,6-diisocyanate upper:	9,5 %(V) / lower: 0,9 %(V)	
Further information:	The indicated values do not necessarily correspond to the product specification. Please refer to the technical information sheet for specification data.	

10. STABILITY AND REACTIVITY

Hazardous reactions: Exothermic reaction with amines and alcohols; reacts slowly with water forming CO2, in closed containers risk of bursting owing to increase of pressure.
Hazardous decomposition products: No hazardous decomposition products when stored and handled correctly.

11. TOXICOLOGICAL INFORMATION

Acute toxicity, oral:
hexamethylene-1,6-diisocyanate homopolymer
LD50 rat: > 5.000 mg/kg
Hexamethylene-1,6-diisocyanate
LD50 rat: 746 mg/kg

Acute toxicity, dermal:
Hexamethylene-1,6-diisocyanate
LD50 rabbit: 599 mg/kg

Acute toxicity, inhalation:
hexamethylene-1,6-diisocyanate homopolymer
LC50 rat, male: 543 mg/m3, 4 h
Method: OECD Test Guideline 403
LC50 rat, female: 390 mg/m3, 4 h
Method: OECD Test Guideline 403
Hexamethylene-1,6-diisocyanate
LC50 rat: 0,124 mg/l, 4 h
Concentration of the saturated vapor of 1,6-HDI at 25 ℃: 0,095 mg/l

Primary skin irritation:
hexamethylene-1,6-diisocyanate homopolymer
rabbit
Result: slight irritant
Method: OECD Guideline for Testing of Chemicals, No. 404
Hexamethylene-1,6-diisocyanate
rabbit
Result: severe irritant

Primary mucosae irritation:
hexamethylene-1,6-diisocyanate homopolymer
rabbit
Result: slight irritant
Method: OECD Test Guideline 405
Result: severe irritant

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Sensitization:
hexamethylene-1,6-diisocyanate homopolymer
Skin sensitisation according to Magnusson/Kligmann (maximizing test): guinea pig
Result: positive
Method: OECD Test Guideline 406
Skin sensitisation according to Buehler (epicutaneous test): guinea pig
Result: negative
Method: OECD Test Guideline 406
Hexamethylene-1,6-diisocyanate
Skin sensitisation according to Magnusson/Kligmann (maximizing test): guinea pig
Result: positive
Method: OECD Test Guideline 406

Subacute, subchronic and prolonged toxicity:
hexamethylene-1,6-diisocyanate homopolymer
Subacute inhalation toxicity, rat : Test concentration - 4,3 ; 14,7 and 89,8 mg aerosol/m³ exposure time - 3 weeks (6 hours a day, 5 days a week) OECD 413 4,3 mg/m³ was tolerated without damage (NOEL), 14,7 mg/m³ caused increase of lung weight, 89,8 mg/m³ inflammatory changes in the respiratory tract. Evidence of damage to organs other than the organs of respiration was not found.

Genotoxicity in vitro:
hexamethylene-1,6-diisocyanate homopolymer
Ames test
Result: negative
Method: OECD Test Guideline 471
Chromosome aberration test in vitro
Result: negative
Method: OECD Test Guideline 473
Point mutation in mammalian cells (HPRT test)
Result: negative
Method: OECD Test Guideline 476

CMR classification:
Hexamethylene-1,6-diisocyanate
Mutagenicity: Not mutagenic in AMES Test.

Additional information:
hexamethylene-1,6-diisocyanate homopolymer
Special properties/effects: Over-exposure, especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL). Prolonged contact with the skin may cause tanning and irritant effects. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

Additional information:
Hexamethylene-1,6-diisocyanate
Special properties/effects: Over-exposure entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL). Prolonged contact with the skin may cause tanning and irritant effects. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

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12. ECOLOGICAL INFORMATION
Do not allow to escape into waterways, wastewater or soil.
Biodegradability: 2 % 28 d, i.e. not readily degradable
Method: OECD Guideline for Testing of Chemicals, No.301 D

Toxicity to fish:
LC0 > 100 mg/l
Test species: Brachydanio rerio (zebra fish) Duration of test: 96 h
Method: OECD Test Guideline 203

Acute toxicity for daphnia:
EC0 > 100 mg/l
Test species: Daphnia magna (Water flea) Duration of test: 48 h
Method: OECD Test Guideline 202

Acute bacterial toxicity:
EC50 > 10.000 mg/l
Tested on: activated sludge Duration of test: 3 h
Method: EG-RL 88/302/EEC

Acute toxicity for algae:
hexamethylene-1,6-diisocyanate homopolymer
IC50 > 100 mg/l
Tested on: scenedesmus subspicatus Duration of test: 72 h
Method: OECD Test Guideline 201
Sample preparation on account of the reactivity of the substance with water: Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.
Hexamethylene-1,6-diisocyanate
EC50 > 77,4 mg/l
Tested on: Desmodesmus subspicatus (Green algae) Duration of test: 72 h
Method: OECD Test Guideline 201
Sample preparation on account of the reactivity of the substance with water: Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

Further information on ecology:
The resin reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyurea). Previous experience shows that polyurea is inert and non-degradable.

13. DISPOSAL CONSIDERATIONS
Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. After final product withdrawal, all residues must be removed from containers (drip-free, powderfree or paste-free). Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated. These containers can be returned for recycling to the appropriate centres set up within the framework of the existing takeback scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

14. TRANSPORT INFORMATION
Not Dangerous good according to ADG Code (6th edition)
ADR/RID - -
ADNR - -
IATA - -
IMDG - -
Other information : Not dangerous cargo.
Slight smell. Keep dry.
Avoid heat above +50 ℃.
Keep away from foodstuffs, acids and alkalis.

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15. REGULATORY INFORMATION
Not a scheduled poison under SUSDP 20
Labeling according to Council Directive 2006/121/EC (Definition Principle):
Xi Irritant
Contains:
hexamethylene-1,6-diisocyanate homopolymer
R43 May cause sensitization by skin contact.
S24 Avoid contact with skin.
S37 Wear suitable gloves.

National legislation
Any existing national regulations on the handling of isocyanates must be observed.

Other regulations: The European Committee of Paint, Printing Ink and Artists' Colours Manufacturers' Associations (CEPE) provides the following information on coatings containing isocyanates: Ready-to-use paints containing isocyanates may have an irritant effect on mucous membranes - especially on breathing organs - and cause hypersensitivity reactions. Inhalation of vapor or spray mist may cause sensitisation. When handling paints containing isocyanates all precautions required for solvent-containing paints must be followed. Vapor and spray mist in particular should not be inhaled. Allergics and asthmatics as well as people prone to respiratory ailments should not work with isocyanate containing paints.

16. OTHER INFORMATION
Full text of R-phrases referred to under sections 2 and 3
R23 Toxic by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin.
R42/43 May cause sensitization by inhalation and skin contact.
R43 May cause sensitization by skin contact.
The product is used mainly as a hardener in coating materials or adhesives. The handling of coating materials or adhesives containing reactive polyisocyanates and residual monomeric HDI requires appropriate protective measures referred to in this safety data sheet. These products may therefore be used only in industrial or trade applications. They are not suitable for use in homeworker (DIY) applications.

Further information
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.