1. Material name/compound and trade name

Details on the product
Trade name: Universal hardener

Details on the company/supplier
NILOS GmbH & Co. KG, Reisholzstr. 15, 40721 Hilden, Germany
Tel.: +49 2103 951 - 0
Fax: +49 2103 951 - 199

Contact in emergencies: +49 173 5306827

2. Composition/details of components

Chemical characterization:
Polyisocyanate solution in dichloromethane

Hazardous contents:
Dichloromethane, content: 60 - 100 %
Diphenylmethane di-isocyanate, isomere and homologues, content: 13 - 30 %
CAS-no.: 75-09-2, EG-no.: 9016-87-9

Classification of the substance or mixture, Product definition: Mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Skin Irrit. 2, H315
Eye Irrit. 2, H319
Resp. Sens. 1, H334
Skin Sens. 1, H317
Carc. 2, H351
STOT SE 3, H335 (Respiratory tract irritation)
STOT RE 2, H373

Classification according to Directive 1999/45/EC [DPD]
The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification:	Carc. Cat. 3; R40 Xn; R20, R48/20 Xi; R36/37/38 R42/43
Physical/chemical hazards:	Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.
Human health hazards:	Limited evidence of a carcinogenic effect. Harmful by inhalation. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Irritating to eyes, respiratory system and skin. May cause sensitisation by inhalation and skin contact. This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons. The onset of the respiratory symptoms may be delayed for several hours after exposure.

3. Possilbe hazards

Hazardous preparation according to directive (EG) Nr. 1907/2006 (REACH) attachment 2
Hazard designation: Harmful Hazard symbol:

Information on special hazards

H302+H312+H332	Harmful if swallowed, contact with skin or by inhalation.
H312+H332	Harmful in contact with skin or by inhalation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H372	Causes damage to organs.
H410	Very toxic to aquatic life with long lasting effects.

4. First aid steps

General information
In case of illness go to the doctor. Remove clothing contaminted with the product.

After inhalation
Provide fresh air. Provide artificial respiration in case of breathing arrest. In case of respiratory insuffience provide oxygen by qualified staff, call for a doctor.

After skin contact
Wash with soap and water and rinse off thoroughly.

After eye contact
Flush with running water for several minutes while keeping the eyelids open, get medical assistance.

After swallowing
Do not induce vomiting. Call immediately for a doctor or for an ambulance.

Details for the doctor
Right after inhaling a rapid resorption into the lungs can occur and therewith it may lead to a systemic effect. The treating doctor has to decide if he will induce vomiting or not. If irrigation is performed endotracheal and/ or esophageal controlling is appropriate. If emptying of the stomach has been indicated, the danger of lung aspiration must be weighed up against the danger of toxicity. Exposition my increase the irritability of the myocardium. Only apply sympaticus-stimulating medication in case of a serious emergency. No specific antidote is known. Supporting steps for the treatment according to the medical evaluation of the patient's state.

5. Firefighting steps

The product does not burn by itself. Keep away from high-energy ignition sources. Use extinguishing agents that are suitable for the situation and the location. Keep away from ignition sources. Cool down containers at risk with a water spray.

Unsuitable extinguishing agents: no limination

Special protective equipment: wear self-contained breathing apparatus.

Under heat influence during fire, formation of hydrogen chloride, hydrogen cyanide and phosgene is possible.

6. Actions to take if released accidentally

Personal protective steps
Ensure adequate ventilation and air extraction.

Environmental protection steps
Prevent it from getting into the drainage and sewage system, into the groundwater or into the soil. Otherwise inform the relevant authorities.

Procedure for cleaning-up
Mop it with absorbant material (sand, universal binder) and put it into a sealed container.

7. Handling and storage

Store in sealed containers. Ensure that there is good ventilation/air extraction at the workplace. Vapors are heavier than air. Protect against heat and direct sunlight. Follow the legal instructions and the technical guidelines (TRbF 20).

8.1 Limitation of exposure and personal protective equipment

During work wearing of protective chlothes, chemical resistant gloves, protective glasses and face mask is necessary. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. MDI can only be smelled if the occupational exposure limit has been exceeded considerably. Medical supervision of all employees who handle or come in contact with respiratory sensitisers is recommended. Personnel with a history of asthma-type conditions, bronchitis or skin sensitisation conditions should not work with MDI based products. The Occupational Exposure Limits listed do not apply to previously sensitised individuals. Sensitised individuals should be removed from any further exposure.

Ingredient name:	Exposure limit values:
Methylene chloride	**TRG900 MAK (Germany), 9/2003).** STEL: 1400 mg/m³, 15 minutes Form: all forms STEL: 400 ppm, 15 minutes Form: all forms TWA: 350 mg/m³, 8 hours Form: all forms TWA: 100 ppm, 8 hours Form: all forms
Ingredient name:	**Exposure limit values:**
Diphenylmethane-4,4-diisocyanate	**MAK value list (Germany), 7/2003).** STEL: 0,1 mg/m³ Form: respirable part TWA: 0,05 mg/m³, 8 hours Form: respirable part **TRGS900 MAK (Germany), 9/2003)** STEL: 0,05 mg/m³ Form: all forms TWA: 0,05 mg/m³, 8 hours Form: all forms

8.2 Limitation of exposure and personal protective equipment

Ingredient name:	Exposure limit values:
Dibutyltindilaurate	**MAK value list (Germany), 7/2003. Skin** STEL: 0,2 mg/m³ , 15 minutes Form: respirable part TWA: 0,1 mg/m³, 8 hours Form: respirable part **TRGS900 MAK (Germany), 9/2003). Skin** STEL: 0,4 mg/m³, 15 minutes Form: respirable part TWA: 0,1 mg/m³, 8 hours

Advised monitoring procedures

Personal protection device:

Respiratory equipment: Use filter/gas mask. If respiratory equipment is required for certain work use a CE approved mask with filter for organic vapors.

Skin and body protection: Wear an overall (preferably heavy cotton) or Tyvek-Pro Tech „C" or Tyvek-Pro Tech „F" disposable overall. Contaminated clothes have to be cleaned up thoroughly before using again.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Advised monitoring procedures

Personal protection device:

Hand protection
Use chemical resistant protective gloves against chemicals and microorganisms. Acceptable gloves are manufactured of vitrone, nitrile, butadiene rubber or PVC such as for instance Ultranile 493.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.

9. Physical and chemical properties

Form:	liquid
Color:	brown
Smell:	a little bit musty
Initial boiling point:	>300 °C, product dissolves
Melting point:	not available
Flash point:	closed cup: >62 °C (143,6 °F)
Explosive properties:	not explosive
Vapour pressure:	not available
Partition coefficient:	not applicable, reacts with water and octanol
Water solubility:	Insoluble in water. Reacts with water.
Solubility others:	soluble in the most organic solvents
Vapor density:	8,5
Concentration of vapor saturation:	32 ug/m³, 20 °C
Auto-ingnition temperature:	>600 °C

10. Stability and reactivity

Stable at room temperature. Upon reaction with water (moisture) carbon dioxide is released. Reacts exothermically with substances containing active hydrogen groups. The reaction gradually intensifies and at higher temperatures can be violent if the miscibility of the reaction partners becomes good or is supported by stirring and/or the presence of solvents. MDI is insoluble in water and heavier than water. It sinks to the bottom, but reacts slowly at the interface. A solid, water-insoluble layer of polyurea is obtained at the interface and releases carbon dioxide gas.

Conditions to avoid:	Avoid of high temperatures.
Incompatible materials:	Avoid of water, alcohol, amine, bases and acids
Hazardous products of decomposition:	Under normal conditions hazardous reaction will not occur.

11. Toxilogical details

Acute toxicity
LD/LC50 values relating to assessment:
Component: Dichloromethane
oral: 1,6 mg/kg rat
inhal./4h: 88000 mg/m³ rat

Component: Diphenylmethane di-isocyanat, isomers and homologues
oral: 2,2 mg/kg mouse
inahal./4h: 170 mg/m³

Primary forms of irritation:
On the eyes: irritation

If inhaled
The respiratory passages might get sensitive

12. Ecological details

No ecological data available.

General information:
Water hazard class 2 (list assessment): hazardous to water
Prevent it from getting into the groundwater, bodies of water or in the drainage system, even in small quantities. Hazardous to drinking water if it gets into the ground.

13. Information on disposal

Pick up with an incombustible absorbant substance. Store in closed containers. Neutralize with 1% ammoniac solution and incinerate. Contact an incineration company that handles special refuse.
EAK refuse disposal key reference: 080405

14. Details for transport

Land transport ADR/RID and GGVE:

ADR/RID class:	6.1
Hazard label:	6.1
Packing group:	III
UN-No.:	1593
Description of hazardous goods:	Dichloromethane mixture

Sea transport IMDG/GGVSea:

IMDG/GGVSea class:	6.1
Hazard label:	6.1
UN-No.:	1593
Packing group:	III
EMS-No.:	F-A, S-A
Marine pollutant:	no
Correct technical name:	Dichloromethane mixture

Air transport ICAO/IATA:

ICAO/IATA class:	6.1
Hazard label:	6.1
UN/ID-No:	1593
Packing group:	III
Correct technical name:	Dichloromethane mixture

15. Regulations

EU classification and marking:. Classification according to the guideline 67/548/EWG-88/379/EWG.
Marking according to the GefStoffV.

Hazard symbol:

H302+H312+H332	Harmful if swallowed, contact with skin or by inhalation.
H312+H332	Harmful in contact with skin or by inhalation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H372	Causes damage to organs.
H410	Very toxic to aquatic life with long lasting effects.
P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P232	Protect from moisture.
P270	Do no eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405	Store locked up.

German regulations

TA air	**class III**
Water hazard	**WGK 2**

Note BG leaflet M040 (chlorinated hydro carbons)

16. Other details

This product is intended for commercial use only. The details given here are based on current knowledge and experience. The safety data sheet describes products in terms of its safety requirements. The details are in no way intended to imply a warranty of performance of capabilities.