

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 23.05.2013

V - 3

Revision: 23.05.2013

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Typ II
- **CAS Number:**
9016-87-9
- **EC number:**
618-498-9
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the preparation** Hardening agent/ Curing agent
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Vosschemie GmbH
Esinger Steinweg 50
D-25436 Uetersen
Phone: +49 (0)4122 717 0; Fax: +49 (0)4122 717158; info@vosschemie.de
- **Further information obtainable from:**
Abteilung Labor / +49 (0)4122 717 0
s.schaller@vosschemie.de
- **Emergency telephone number:**
Giftinformationszentrum (GIZ)-Nord, Goettingen, Deutschland
Phone: +49 (0)551 19240, +49 (0)551 383180

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 2 H351 Suspected of causing cancer.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

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GHS07

Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

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



Xn; Harmful

R20-40-48/20: Harmful by inhalation. 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.



Xi; Irritant

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

Carc. Cat. 3

· **Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS07



GHS08

· **Signal word Danger**

· **Hazard-determining components of labelling:**

EINECS-Nr.

618-498-9

diphenylmethanediisocyanate, isomeres and homologues

· **Hazard statements**

H332 Harmful if inhaled.

H315 Causes skin irritation.

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.

· **Precautionary statements**

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

P102 Keep out of reach of children.

P103 Read label before use.

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

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- P285 *In case of inadequate ventilation 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.*
P302+P352 *IF ON SKIN: Wash with plenty of soap and water.*
P403+P233 *Store in a well-ventilated place. Keep container tightly closed.*
P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

Additional information:

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.

Contains isocyanates. May produce an allergic reaction.

Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances**CAS No. Description**

9016-87-9 diphenylmethanediisocyanate, isomeres and homologues

Identification number(s)

EC number: 618-498-9

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 irregular 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.

If skin irritation continues, consult a doctor.

After eye contact: *Rinse opened eye for several minutes under running water. Then consult a doctor.***After swallowing:**

Do not induce vomiting; call for medical help immediately.

Rinse out mouth and then drink plenty of water.

Information for doctor:**Most important symptoms and effects, both acute and delayed**

Breathing difficulty

Coughing

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- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting 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.
- **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 (NO_x)
Hydrogen cyanide (HCN)
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **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**
Particular danger of slipping on leaked/spilled product.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Do not inhale gases / fumes / aerosols.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Avoid contact with the eyes and skin.
- **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 10
Do not seal receptacle gas tight.
Danger of bursting.
Dispose contaminated material as waste according to item 13.
- **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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Open and handle receptacle with care.
Avoid contact with the eyes and skin.

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*Do not inhale gases / fumes / aerosols.**Use respiratory protective device against the effects of fumes/dust/aerosol.**Ensure good ventilation/exhaustion at the workplace.**Prevent formation of aerosols.*

- **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.

- **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:**

*Store away from water.**Do not store together with acids.**Do not store together with alkalis (caustic solutions).**Store away from oxidizing agents.**Pls. refer to section 10**Keep away from foodstuffs, beverages and feed.*

- **Further information about storage conditions:**

*Store receptacle in a well ventilated area.**Store in cool, dry conditions in well sealed receptacles.**Do not seal receptacle gas tight.**Protect from humidity and water.**Protect from frost.**Protect from heat and direct sunlight.*

- **Recommended storage temperature:** +15 °C - +25 °C

- **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**

- **Ingredients with limit values that require monitoring at the workplace:**

9016-87-9 diphenylmethanediisocyanate, isomeres 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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101-68-8 4,4'-methylenediphenyl diisocyanate

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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- **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

*Keep away from foodstuffs, beverages and feed.**Do not eat, drink, smoke or sniff while working.**Wash hands before breaks and at the end of work.**Immediately remove all soiled and contaminated clothing**Store protective clothing separately.**Avoid contact with the eyes and skin.**Use skin protection cream for skin protection.**Do not inhale gases / fumes / aerosols.*

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· Respiratory protection:*Adhere to the workplace limit values and / or other threshold values.**Use respiratory protective device against the effects of fumes/dust/aerosol.**In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.**Filter A/P2***· Protection of hands:***Check the permeability prior to each renewed use of the glove.**Preventive skin protection by use of skin-protecting agents is recommended.**Protective gloves**The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.**Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation***· Material of gloves***Butyl rubber, BR**Nitrile rubber, NBR**Chloroprene rubber, CR**Empfohlene Materialstärke: ≥ 0.7 mm**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.***· Penetration time of glove material***For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 374 Part 3: Level 6).**The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.***· Not suitable are gloves made of the following materials: PVC or PE gloves****· Eye protection:***Tightly sealed goggles***· Body protection: Protective work clothing**

9 Physical and chemical properties

· Information on basic physical and chemical properties**· General Information****· Appearance:****Form:** *Fluid***Colour:** *Brown***· Odour:** *Characteristic***· Odour threshold:** *Not applicable***· pH-value:** *Not applicable***· Change in condition****Melting point/Melting range:** *< 10 °C***Boiling point/Boiling range:** *> 300 °C***· Flash point:** *> 200 °C*

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· Flammability (solid, gaseous):	Product is not flammable.
· Ignition temperature:	> 600 °C
· Decomposition temperature:	> 230 °C
· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomised.
· Vapour pressure at 25 °C:	< 0.01 Pa
· Density at 25 °C:	1.23 g/cm ³
· Relative density at 20 °C	~ 1.22 g/cm ³
· Vapour density	Not determined.
· Solubility in / Miscibility with water:	Hydrolized.
· Partition coefficient (n-octanol/water):	Not applicable
· Viscosity:	
Dynamic at 25 °C:	~ 210 mPas
Kinematic:	Not determined.
· 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 reactions**
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**
To avoid thermal decomposition do not overheat.
Protect from humidity and water.
< 15 °C
- **Incompatible materials:**
Reacts with water.
Reacts with alcohols, amines, aqueous acids and alkalis.
- **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/LC50 values relevant for classification:**

Oral	LD50	> 10000 mg/kg (rat)
Dermal	LD50	> 10000 mg/kg (rabbit)
Inhalative	LC50 /4h	~ 0.493 mg/l (rat)

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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	LC 50 / 4h	1.5 mg/l (rat) (expert assessment, Dust/Mist)
	LC50 /4h	310 mg/m ³ (rat) (OECD-403, Aerosol)

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

· **Subacute to chronic toxicity:****9016-87-9 diphenylmethanediisocyanate, isomers 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:** Irritating to respiratory system.
- **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, isomers and homologues**

Inhalative	LOAEL (carcinogenicity)	6 mg/m ³ (rat) (OECD 453, 2a, 6h/day, Aerosol)
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- **Reproductive toxicity/Fertility** No further relevant 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:**

EC0	> 500 mg/l (daphnia) (24h)
EC0/72h	1640 mg/l (scenedesmus subspicatus)
LC0/96h	> 1000 mg/l (piscis)

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-201)
LC50/96h (static)	> 1000 mg/l (danio rerio) (OECD 203)
NOEC	> 10 mg/l (daphnia magna) (21 d, OECD 202)

· **Persistence and degradability**

This product is according to previous experiences inert and non-degradable.

9016-87-9 diphenylmethanediisocyanate, isomers and homologues

BSB	<10 % (activated slugde) (OECD 302 C)
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Biodegradation	0 % (activated sludge) (28d, OECD 302 C)
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· **Behaviour in environmental systems:**

· **Bioaccumulative potential**

9016-87-9 diphenylmethanediisocyanate, isomeres and homologues
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BCF < 14 (Cyprinus carpio) (OECD 305 C, 42 d)

· **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.

· **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 together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

· **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**

07 02 08*	other still bottoms and reaction residues
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· **Uncleaned packaging:**

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

14 Transport information

· **UN-Number**

ADR, ADN, IMDG, IATA	Void
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· **UN proper shipping name**

ADR, ADN, IMDG, IATA	Void
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· **Transport hazard class(es)**

ADR, ADN, IMDG, IATA	Void
Class	

· **Packing group**

ADR, IMDG, IATA	Void
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· **Special precautions for user** Not applicable.

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

· **Transport/Additional information:** Not dangerous according to the above specifications.

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **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**
 - Adhere to the Ordinances on the Prohibition of Certain Chemicals.
 - REACH ((EC) No 1907/2006), Annex XVII, no 56.
- **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.

- **Department issuing MSDS:** Abteilung Labor
- **Contact:** Frau S. Schaller
- **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 Organization
 - 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
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
- *** Data compared to the previous version altered.**

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