

91/155/EG - 93/112/EG - 2001/58/EG**Product : Hardener for PU-Cast resin****Type : EG, EGJ, EGF, WG, UWR, EGW, G, UG,****FG, WGH, Bauer****Issue : 07.04.2006, replace issue from : 01.03.2006****1. Description of material, preparation and company****Product information**

Trade name	Hardener Component (B) for cast resin type : EG, EGJ, EGF, WG, UWR, EGW, G, UG, FG, WGH, Bauer
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Manufacturer / supplier information

Manufacturer / supplier	CELLPACK GmbH
Street address / post office box	Carl-Zeiss-Strasse 20
Country / postal code / city	D-79761 Waldshut-Tiengen
Telephone	+49 77 41 / 6007-0
Fax	+49 77 41 / 6 49 89
Information desk	+49 77 41 / 6007-39
Emergency information	+49 77 41 / 6007-0

**Manufacturer / supplier information
for Switzerland**

Manufacturer / supplier	Cellpack AG Electrical Products
Street address / post office box	Anglikerstrasse 99
Country / postal code / city	CH-5612 Villmergen
Telephone	+41 56 618 18 18
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Information desk	+41 56 618 18 18
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2. Ingredients / component information**Chemical properties (preparation)**

Description	Diphenylmethane diisocyanate, isomers / homologous substances
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Hazardous ingredients

CAS-Nr.	9016-87-9
Designation according to EG guidelines	EG No. 615-005-01-6
Quantity / unit	100%
Code / Symbol	Xn
Grading	20-36 / 37 / 38-42 Xn R20; X; R36/37/38; R42/43

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Additional notes

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3. Potential hazards

Description of hazard

Xn - hazardous to health

Special hazard notices for humans and the environment

Exothermic reaction with amines and alcohols; pressure build-up with water upon formation of CO₂. Burst hazard for closed containers. Sensitisation possible if inhaled. Irritates the eyes, respiratory system and skin.

4. First aid measures

General instructions

If inhaled

Immediately get the person away from high concentrations of vapour or aerosol and into the fresh air; keep him warm. A doctor's assistance is required if there are breathing difficulties.

If skin contact occurs

Wash with plenty of water and soap, then apply lotion.

If eye contact occurs

Rinse with plenty of water, then consult a physician.

If swallowed

Do not induce vomiting; consult a physician.

Instructions for the physician

-

5. Fire-fighting measures

Suitable fire-extinguishing agent

CO₂, foam, powder, water spray

Extinguishing agents unsuitable for safety reasons

-

Special hazards from the material, or byproducts and gases produced by its combustion

Carbon monoxide, nitric oxide, isocyanate vapours and traces of hydrogen cyanide can be produced

Special protective equipment

Respiratory protection apparatus independent of ambient air

Additional instructions

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6. Measures if released accidentally

Precautionary measures for people

Goggles and safety gloves (goggles only if there is a hazard of being splashed in the eyes)

Environmental protection measures

Do not allow it to get into water. Cannot be mixed with water. Upon formation of carbon dioxide, it turns into a solid, insoluble reaction byproduct (polyurethane) with

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a high melting point and floats on the surface. This reaction is strongly induced by surfactants (e.g. liquid soaps) or water soluble solvents. According to current knowledge, polyurethane is inert and not biodegradable.

Cleaning / pick-up procedures

Pick up with a material that absorbs liquids. Do not shut the waste container – just cover it loosely – and store it out of doors for 7-14 days. Then bring it to a proper disposal facility.

7. Handling and storage**Handling****Instructions for safe handling**

Supply adequate ventilation at the work site; avoid aerosol formation. Observe the usual safety measures for handling chemicals. Melt only in accordance with the manufacturer's instructions.

Fire and explosion prevention instructions

Not required

Storage**Storeroom / container requirements**

Store at room temperature.
Keep container dry and tightly closed.

Instructions for shared storage

Keep away from food and beverages

Storage category

Avoid temperatures above 30°C and below 5°C.
VCI storage category: 10

Further details about storage conditions

-

Fire and explosion prevention

Not required

8. Exposure limits and personal safety apparel**Additional instructions for arrangement of technical facilities**

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Components with work-related limits to be monitored (not contained in the product; these substances can be produced during curing, processing or storage)

CAS No.	9016-87-9
Designation of substance	Diphenylmethane-4,4'-diisocyanate
Type	MAK
Value	0.05
Unit	mg/m ³

These values were taken from lists that were valid at the time of production (e.g. TRGS 900 for the Federal Republic of Germany).

Personal safety apparel**General safety and hygienic measures**

Do not eat, drink or smoke while processing. Wash hands before breaks and when finished working. Wear suitable protective clothing; remove soiled clothing immediately.

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Respiratory protection

Required at inadequately ventilated work sites. Face mask required while spraying. Use A2-P2 combination filter for the short term.

Hand protection

Gloves made of suitable materials

Eye protection

Goggles

Body protection

Not necessary

9. Physical and chemical properties

Appearance

Form

liquid

Colour

brown

Odour

earthy, fusty

Melting point / melting range

-24°C – DIN ISO 3016

Boiling point / boiling range

> 300°C – DIN 53171

Flash point

> 250°C – DIN EN 22719

Flammability (solid, gaseous)

-

Ignition temperature

> 500°C – DIN 51794

Spontaneous combustibility

-

Vapour pressure

at 20°C < 1 mbar
at 50°C 12 mbar
MDI at 20°C < 0,00001 mbar
MDI at 50°C 0,00016 mbar

Density (at 20°C)

1.24 g/cm³ - DIN 51757

Lower explosion threshold LET

undetermined

Upper explosion threshold UET

undetermined

Solubility in water (at 20°C)

insoluble, causes a reaction

pH value (g/l H₂O)

not applicable

Distribution coefficient

-

Viscosity (at 25°C)

approx. 200-300 m Pa.s – DIN 53019

Solvent content

not applicable

Further details

none

10. Stability and reactivity

Conditions to be avoided

-

Substances to be avoided

Do not mix with water; polymerisation and CO₂ formation at 200°C and above

Dangerous decomposition products

None if handled and stored properly

Further details

Thermal decomposition does not occur until the boiling point. Exothermic reaction with amines and

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alcohols, formation of CO₂ with water, pressure build-up in closed containers, bursting hazard.

11. Toxicology information

Acute Toxicity

Grading-related LD/LC50 values

Rat, LD₅₀ orally:

> 15000 mg/kg

Rats, LC₅₀ inhaled:490 mg as aerosol/m³, 4h exposure

Specific symptoms in animal testing

Concentration of saturated vapour from 4,4'MDI at 25°C: 0.09 mg/m³

A long-term inhalation study with rats over 2 years with mechanically produced breathable aerosols (aerodyn. diameter 95% below 5 µm) of MDI (PMDI) polymers produced no irritations among the animals in a concentration of 0.2 mg PMDI/m³. This concentration is considered the "no effect level".

Primary irritation

To the skin:

Frequent and prolonged skin contact can lead to irritations and dermatitis.

To the eye:

Tearing, burning and considerable irritation of the outer eye

Respiratory tracts:

Irritation of the mucous membranes upon inhalation of concentrations above twice the MAK value. Pressure on the chest, possibly combined with difficulty in breathing and headaches; delayed occurrence of discomfort and allergic reactions are possible in susceptible persons (asthma, bronchitis).

Experiences with humans

No adverse effects on health have been detected so far given proper handling and compliance with industrial hygiene precautions.

Sensitisation

Possible by inhalation

12. Ecological information

Cannot be mixed with water. Upon formation of carbon dioxide, it turns into a solid, insoluble reaction byproduct (polyurethane) with a high melting point and floats on the surface. This reaction is strongly induced by surfactants (e.g. liquid soaps) or water soluble solvents. According to current knowledge, polyurethane is inert and not biodegradable. Water pollutant category (WPC) 1 – slight water pollutant.

Information on MDI, isomers of homologous substances

Biological culture

0% after 28 days (respirometer test)

Acute toxicity in fish

LCO = > 1000 mg/l

Test species brachydanio rerio

Duration of test 96 h

Toxicity in daphnia

EC50 = 1000 mg/l, duration of test 24 h

Acute toxicity in bacteria

EC50 = 100 mg/l, duration of test 3 h

Tested on activated sludge bacteria

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13. Disposal Instructions

Product

Product waste

Disposal is required in accordance with the Waste and Residue Monitoring Regulation. Incinerate according to the statutory conditions in a special waste incinerator (SAV). Must not get into the drains, sewerage system or waters even in small amounts. It is recommended to clarify the details with the waste disposer responsible concerning the assignment of specific branch and product waste

numbers according to the European Waste Catalogue (EAK).

EAK-Code No.

07 02 08

EAK-Name

Other reaction and distillation residues

EAK-Group

Waste from the (HZVA) production, processing, sale and use of plastics, synthetic rubber and synthetic fibres.

Uncleaned / Emptied packaging

Recommendation

Can be given to a reconditioning company for utilization or scrapped after completely emptying the residue, rendering the product residues adhering to the walls harmless (e.g. by reaction with an equivalent amount of PU base) and removing the labels. Utilization must take place according to national legislature and environmental stipulations. When passing on uncleaned, empty containers the recipients must be informed about the possible danger.

14. Transport regulations

GGVSee / IMDG Code

UN No.

-

EmS

-

PG

-

MPO

-

GGVSE

KI.

-

PG

-

RID/ADR: KI.

-

PG

-

ADNR

KI.

-

PG

-

Kat.

-

ICAO/IATA-DGR

not registered

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Approved by Expressgut Deutschland
(in accordance with GGVSE)

Land declaration

yes

Sea declaration

-

Air declaration

-

Further information

Non-hazardous freight. Skin and eye irritants. Keep away from moisture. Sensitive to heat at +50°C and above. Sensitive to frost at 0°C and below. Keep away from food, beverages, acids and alkaline solutions. You can find further information in Chapter 16.

15. Regulations

Identification in accordance with EWG guidelines 67/548, Appendix I, and revisions and adjustments thereof:

Symbol: Xn	Hazard designation: Hazardous to health
Contains	Diphenylmethane diisocyanate, isomers and homologous substances
R 20	Hazardous to health if inhaled
R 36/37/38	Irritates the eyes, respiratory system and skin
R 42/43	Sensitisation possible through inhalation and skin contact
S 23	Do not inhale vapour / aerosol
S 36/37	Wear suitable safety gloves and protective clothing while working
S 45	Consult a physician immediately in the event of an accident or illness (produce this label if possible)
Industrial safety	TRGS 900 "air limits" Diphenylmethane-4,4'-diisocyanat e (CAS No. 101-68-8) 0.005 ml/m ³ (ppm) = 0.05 mg/m ³ (-)
Upper limit exceeding factor	= 1 =
Remarks	-
The associated BAT value (TRGS 903) must be observed.	
This product may contain traces of phenylisocyanate.	
Industrial safety	TRGS 900 "air limit"
Phenylisocyanate	0.01 ml/m ³ (ppm) = 0.05 mg/m ³ (-)
Upper limit exceeding factor	= 1 =
Remarks	-
TA air 3.1.7 organic substances	Category I, mass concentration of 20 mg/m ³ and lower, at a mass flow of 0.1 kg/h and greater.
Not subject to BvF.	

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16. Other information

Technical information bulletin No. 4 compiled by the International Isocyanate Institute, Inc.:

"Recommendation for handling monomers and polymers of diphenylmethane-4,4'-diisocyanate MDI" (August 1991). BG Chemistry fact sheet M044, "Isocyanate".

This information is based on the existing knowledge and experience as of the issue date, and is not to be construed as quality assurances. It must be neither revised nor transferred to other products.

For shipping within the USA:

The following applies under § 172.101, Appendix A, DOT (Department of Transportation): MDI Reportable Quantity (RQ):50001bs (2270 kg).

ISOPA guidelines for safe loading/unloading, transporting and storage of TDI and MDI.

ISOPA order number: PSC-0005-GUIDL-D

This safety data sheet supersedes all previous editions. Revised and valid as of: See issue/printing dates.

Please direct enquiries to the information desk cited in Chapter 1.

(1) " - " : declaration not necessary / not applicable