EU safety data sheet

Trade name: Giessharz Härter 1
Product no.: B14
Current version : 7.1.1, issued: 02.03.2022 **Replaced version:** 7.1.0, issued: 18.01.2022 **Region:** GB

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

1.1 Product identifier

Trade name

Giessharz Härter 1

Substance name	diphenylmethanediisocyanate, isomeres and homologues
Justification	In accordance with Article 2 of the REACH Regulation (EC) No. 1907/2006 polymers are exempted from registration. The monomers have been registered.

Identification numbers

CAS no.	9016-87-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
filling compound for electrotecnical use

Uses advised against
Consumer use

1.3 Details of the supplier of the safety data sheet

Address
BBC Cellpack GmbH
Carl-Zeiss-Strasse 20
79761 Waldshut-Tiengen

Telephone no.	+49 (0)7741 6007-0
Fax no.	+49 (0)7741 64989
e-mail	electrical.products@cellpack.com

Information provided by / telephone
+49 (0)7741 6007-0

Advice on Safety Data Sheet
msds@cellpack.com

1.4 Emergency telephone number

For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)
Acute Tox. 4; H332
Carc. 2; H351
Eye Irrit. 2; H319
Resp. Sens. 1; H334
Skin Irrit. 2; H315
Skin Sens. 1; H317
STOT RE 2; H373i
STOT SE 3; H335

Classification information
This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:
Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Product identifier
9016-87-9 (diphenylmethanediisocyanate, isomeres and homologues)

Hazard pictograms


GHS07


GHS08

Signal word
Danger

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373i	May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statement(s)

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.

Supplemental label elements
Restriction on the use of diisocyanates as per Commission Regulation (EU) 2020/1149 of 3 August 2020 amending Annex XVII to Regulation (EC) No 1907/2006:
'As from 24 August 2023 adequate training is required before industrial or professional use'

2.3 Other hazards

The product may be a skin sensitiser. It may also be a severe skin irritant. In case of respiratory system hypersensitivity (asthma, chronic bronchitis) do not handle this product.

PBT assessment
The product is not considered to be a PBT.

vPvB assessment
The product is not considered to be a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical characterization
Substance name diphenylmethanediisocyanate, isomeres and homologues

Identification numbers
CAS no. 9016-87-9

Components to be mentioned according to Regulation (EU) No. 1907/2006, Annex II, section 3.1

Substance name	Additional information	
CAS / EC / Index / REACH no	**Concentration**	**%**
diphenylmethane-4,4'-diisocyanate	component	
101-68-8 202-966-0	>= 25.00 - < 50.00	wt%

615-005-00-9 01-2119457014-47		
diphenylmethane-2,4'-diisocyanate	component	
5873-54-1 227-534-9 615-005-00-9 01-2119480143-45	< 5.00	wt%
2,2'-methylenediphenyl diisocyanate	component	
2536-05-2 219-799-4 615-005-00-9 01-2119927323-43	< 2.50	wt%

Other information

Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
-	Resp. Sens. 1; H334: C >= 0.1% Eye Irrit. 2; H319: C >= 5% STOT SE 3; H335: C >= 5% Skin Irrit. 2; H315: C >= 5%	-	-

3.2 Mixtures
Not applicable. The product is not a mixture.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
In all cases of doubt, or when sickness symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. Remove soiled or soaked clothing immediately.

After inhalation
Remove to fresh air, keep patient warm and at rest. Irregular breathing/no breathing: artificial respiration. If unconscious place in recovery position and seek medical advice.

After skin contact
Preferably wash with polyethylene glycol-based cleanser or with plenty of warm water and soap.

After eye contact
Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes).

After ingestion
Do not induce vomiting. Call a doctor immediately. Never give anything by mouth to an unconscious person. Keep at rest.

4.2 Most important symptoms and effects, both acute and delayed
No data available.

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Alcohol resistant foam, CO2, powders, water spray

Unsuitable extinguishing media
High power water jet

5.2 Special hazards arising from the substance or mixture
Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Hydrogen cyanide (HCN); Isocyanate vapours. Carbon monoxide and carbon dioxide

5.3 Advice for firefighters
Appropriate breathing apparatus may be required. Cool endangered containers with water in case of fire. DO NOT ALLOW RUN-OFF FROM FIRE FIGHTING TO ENTER DRAINS OR WATER COURSES; Fire residues must be disposed of in a proper manner.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Exclude sources of ignition and ventilate the area. Do not inhale vapours. Refer to protective measures listed in sections 7 and 8.

For emergency responders
No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions
Do not allow to enter drains. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations. Add the same decontaminant to the remnants and let stand for several days until no further reaction in non-sealed container. Once this stage is reached, close container and dispose according to local regulations (see section 13).

6.3 Methods and material for containment and cleaning up
Contain and collect spillage with absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Contaminated areas may be cleaned with recommended decontamination agents: - 8-10% sodium carbonate and 2% aqueous liquid soap; - Liquid/yellow soap (potassium soap with ~ 15% anionic surfactants): 20ml; Water: 700ml; Polyethylene glycol (PEG 400): 350ml; - 30% commercial laundry detergent (containing monoethanolamine), 70% water

6.4 Reference to other sections
No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used ! The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Comply with the health and safety at work laws.

General protective and hygiene measures
Do not eat or drink during work - no smoking. Avoid product contact with skin, eyes and clothing

Advice on protection against fire and explosion
No special measures necessary.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight. Keep container dry in a cool, well-ventilated place. Precautions should be taken to minimise exposure to atmospheric humidity or water: CO_2 will be formed which in closed containers can result in pressurisation.

Requirements for storage rooms and vessels
Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access! Containers which are opened must be carefully closed and kept upright to prevent leakage.

Incompatible products
Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

7.3 Specific end use(s)
No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

No	Substance name	CAS no.	EC no.
1	**diphenylmethanediisocyanate, isomeres and homologues**	**9016-87-9**	
	List of approved workplace exposure limits (WELs) / EH40		
	Isocyanates, all (as -NCO) Exept methyl isocyanate		
	WEL short-term (15 min reference period)	0.07 mg/m³	
	WEL long-term (8-hr TWA reference period)	0.02 mg/m³	
	Comments	Sen	
2	**diphenylmethane-4,4'-diisocyanate**	**101-68-8**	**202-966-0**
	List of approved workplace exposure limits (WELs) / EH40		
	Isocyanates, all (as -NCO) Exept methyl isocyanate		
	WEL short-term (15 min reference period)	0.07 mg/m³	
	WEL long-term (8-hr TWA reference period)	0.02 mg/m³	
	Comments	Sen	
3	**2,2'-methylenediphenyl diisocyanate**	**2536-05-2**	**219-799-4**
	List of approved workplace exposure limits (WELs) / EH40		
	Isocyanates, all (as -NCO) Exept methyl isocyanate		
	WEL short-term (15 min reference period)	0.07 mg/m³	
	WEL long-term (8-hr TWA reference period)	0.02 mg/m³	
	Comments	Sen	

DNEL, DMEL and PNEC values

DNEL values (worker)

No	Substance name			CAS / EC no	
	Route of exposure	**Exposure time**	**Effect**	**Value**	
1	**diphenylmethane-4,4'-diisocyanate**			**101-68-8 202-966-0**	
	inhalative	Long term (chronic)	local	0.05	mg/m³
	inhalative	Short term (acut)	local	0.1	mg/m³
2	**diphenylmethane-2,4'-diisocyanate**			**5873-54-1 227-534-9**	
	inhalative	Long term (chronic)	local	0.05	mg/m³
	inhalative	Short term (acut)	local	0.1	mg/m³
3	**2,2'-methylenediphenyl diisocyanate**			**2536-05-2 219-799-4**	
	inhalative	Short term (acut)	local	0.1	mg/m³
	inhalative	Long term (chronic)	local	0.05	mg/m³

DNEL value (consumer)

No	Substance name			CAS / EC no	
	Route of exposure	**Exposure time**	**Effect**	**Value**	
1	**diphenylmethane-4,4'-diisocyanate**			**101-68-8 202-966-0**	
	inhalative	Long term (chronic)	local	0.025	mg/m³
	inhalative	Short term (acut)	local	0.05	mg/m³
2	**diphenylmethane-2,4'-diisocyanate**			**5873-54-1 227-534-9**	
	inhalative	Long term (chronic)	local	0.025	mg/m³

	inhalative	Short term (acut)	local	0.05	mg/m³
3	**2,2'-methylenediphenyl diisocyanate**			**2536-05-2 219-799-4**	
	inhalative	Short term (acut)	local	0.05	mg/m³
	inhalative	Long term (chronic)	local	0.025	mg/m³

PNEC values

No	Substance name		CAS / EC no	
	ecological compartment	Type	Value	
1	**diphenylmethane-4,4'-diisocyanate**		**101-68-8 202-966-0**	
	water	fresh water	1	mg/L
	water	marine water	0.1	mg/L
	soil	-	1	mg/kg dry weight
	sewage treatment plant	-	1	mg/L
2	**diphenylmethane-2,4'-diisocyanate**		**5873-54-1 227-534-9**	
	water	marine water	0.1	mg/L
	water	Aqua intermittent	10	mg/L
	soil	-	1	mg/kg dry weight
	sewage treatment plant	-	1	mg/L
3	**2,2'-methylenediphenyl diisocyanate**		**2536-05-2 219-799-4**	
	water	fresh water	1	mg/L
	water	marine water	0.1	mg/L
	sewage treatment plant	-	1	mg/L
	secondary poisoning	-	1	mg/kg dry weight

8.2 Exposure controls

Appropriate engineering controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn. Air-fed protective respiratory equipment must be worn by spray operator even when good ventilation is provided.

Personal protective equipment

Respiratory protection
When spraying: air fed respirator. For operations other than spraying: In well ventilated areas, air-fed respirators could be replaced by a combination of charcoal filter and particulate filter mask. Respiratory protection mask with combination filter A/P2.

Eye / face protection
Wear safety goggles to protect against solvent splashes.

Hand protection
Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Replace immediately protective gloves if worn or damaged. Make sure that operations are designed so that it is not necessary to wear continuously protective gloves.

Appropriate Material	butyl rubber		
Material thickness		0.5	mm
Breakthrough time		480	min
Appropriate Material	fluorintated rubber		
Material thickness		0.4	mm
Breakthrough time		480	min
Appropriate Material	nitrile rubber		
Material thickness		0.35	mm
Breakthrough time		480	min

Other
Normal chemical work clothing.

Environmental exposure controls
No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

State of aggregation
liquid

Form/Colour
liquid
brown

Odour
Earthy; musty

pH value
not determined

Boiling point / boiling range			
Value	>	300	°C
Reference pressure		1013	hPa
Source	Manufacturer		

Melting point/freezing point
No data available

Decomposition temperature
No data available

Pour point			
Value		-24	°C
Source	Manufacturer		

Flash point			
Value		250	°C
Source	Manufacturer		

Ignition temperature			
Value	>	500	°C
Source	Manufacturer		

Flammability
No data available

Lower explosion limit
No data available

Upper explosion limit
No data available

Vapour pressure		
Value	1	hPa
Reference temperature	20	°C
Value	12	hPa
Reference temperature	50	°C
Value	17	hPa
Reference temperature	55	°C

Relative vapour density

No data available

Relative density
No data available

Density		
Value	1.24	g/cm³
Reference temperature	20	°C
Source	Manufacturer	

Solubility
No data available

Partition coefficient n-octanol/water (log value)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**diphenylmethane-4,4'-diisocyanate**	**101-68-8**	**202-966-0**
log Pow		4.51	
Reference temperature		20	°C
Method	OECD 117		
Source	ECHA		
2	**diphenylmethane-2,4'-diisocyanate**	**5873-54-1**	**227-534-9**
log Pow		4.51	
Reference temperature		22	°C
with reference to	pH 7		
Method	OECD 117		
Source	ECHA		

Viscosity		
Value	296	mPa*s
Reference temperature	20	°C
Type	dynamic	
Source	Manufacturer	

Particle characteristics
No data available

9.2 Other information

Other information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
Dangerous reactions are not expected if the product is handled according to its intended use.

10.2 Chemical stability
Release of carbon dioxide (CO2) starting from a polymerisation temperature of approximately 200°C.

10.3 Possibility of hazardous reactions
Contamination with incompatible materials and other compounds which react with isocyanates may result in dangerous pressure and possible bursting of closed containers.

10.4 Conditions to avoid
Stable under recommended storage and handling conditions(See section 7).

10.5 Incompatible materials
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions. The product reacts slowly with water resulting in evolution of carbon dioxide. In closed containers, pressure build up could result distortion blowing and in extreme cases bursting of the container.

10.6 Hazardous decomposition products
In a fire, hazardous decomposition products, such as smoke, carbon monoxide, carbon dioxiode, oxides of nitrogen,

hydrogen cyanide, monomers of isocyanates, amines and alcohols may be produced.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**diphenylmethane-4,4'-diisocyanate**	**101-68-8**	**202-966-0**

LD50	>	2000	mg/kg bodyweight
Species	rat		
Source	ECHA / Read across		

Acute dermal toxicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**diphenylmethane-4,4'-diisocyanate**	**101-68-8**	**202-966-0**

LD50	>	9400	mg/kg bodyweight
Species	rabbit		
Method	OECD 402		
Source	ECHA / Read across		

Acute inhalational toxicity
No data available

Skin corrosion/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**diphenylmethane-4,4'-diisocyanate**	**101-68-8**	**202-966-0**

Method	OECD 404
Source	ECHA / Read across
Evaluation	irritant

Serious eye damage/irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**diphenylmethane-2,4'-diisocyanate**	**5873-54-1**	**227-534-9**

Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.

Reproduction toxicity
No data available

Carcinogenicity
No data available

STOT - single exposure
No data available

STOT - repeated exposure
No data available

Aspiration hazard
No data available

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Prolonged contact with the skin may produce tannic effects and lead to irritation. Eye contact with the product can cause severe eye irritation with redness and conjunctival swelling. Repeated or prolonged skin contact may cause allergic skin reactions in sensitive individuals which can be seen as redness.

11.2 Information on other hazards

Endocrine disrupting properties
No data available.

Other information
Based on the properties of the isocyanate components and considering toxicological data on similar preparations: This preparation may cause acute irritation and/or sensitisation of the respiratory system leading to an asthmatic condition, wheeziness and a thightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)
No data available

Toxicity to fish (chronic)
No data available

Toxicity to Daphnia (acute)
No data available

Toxicity to Daphnia (chronic)
No data available

Toxicity to algae (acute)
No data available

Toxicity to algae (chronic)
No data available

Bacteria toxicity
No data available

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential

Bioconcentration factor (BCF)				
No	**Substance name**	**CAS no.**		**EC no.**
1	**diphenylmethane-2,4'-diisocyanate**	**5873-54-1**		**227-534-9**
BCF	92	-	200	
Method	OECD 305 E			
Source	ECHA			

Partition coefficient n-octanol/water (log value)				
No	**Substance name**	**CAS no.**		**EC no.**
1	**diphenylmethane-4,4'-diisocyanate**	**101-68-8**		**202-966-0**
log Pow		4.51		
Reference temperature		20	°C	
Method	OECD 117			
Source	ECHA			
2	**diphenylmethane-2,4'-diisocyanate**	**5873-54-1**		**227-534-9**
log Pow		4.51		
Reference temperature		22	°C	
with reference to	pH 7			
Method	OECD 117			
Source	ECHA			

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	The product is not considered to be a PBT.
vPvB assessment	The product is not considered to be a vPvB.

12.6 Endocrine disrupting properties
No data available.

12.7 Other adverse effects

Other adverse effects
Isocyanate reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

12.8 Other information

Other information
The product should not be allowed to enter drains or water courses.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN
The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG
The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA
The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information
No data available.

14.5 Environmental hazards
Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user
Transport within the user's premises: To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

14.7 Maritime transport in bulk according to IMO instruments
Not relevant

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)
In accordance with the REACH regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation
In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES	
The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.	No 3
The substance is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.	

No	Substance name	CAS no.	EC no.	No
1	**2,2'-methylenediphenyl diisocyanate**	**2536-05-2**	**219-799-4**	**56, 74, 75**
2	**diphenylmethane-2,4'-diisocyanate**	**5873-54-1**	**227-534-9**	**56, 74, 75**
3	**diphenylmethane-4,4'-diisocyanate**	**101-68-8**	**202-966-0**	**56, 74, 75**
4	**diphenylmethanediisocyanate, isomeres and homologues**	**9016-87-9**	**-**	**56, 74, 75**

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances
This substance is not subject to Part 1 or 2 of Annex I

Other regulations
Adhere to the national sanitary and occupational safety regulations when using this product.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

SECTION 16: Other information

Sources of key data used to compile the data sheet:
Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.
Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.
National Threshold Limit Values of the corresponding countries as amended in each case.
Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.
The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

This information is based on our present knowledge and experience.
The safety data sheet describes products with a view to safety requirements.
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

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