Trade name: Härter GG
Product no.: B1
Current version : 2.0.0, issued: 28.11.2022 **Replaced version:** 1.2.1, issued: 02.03.2022 **Region:** GB

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

1.1 Product identifier

Trade name

Härter GG

Substance name	Aliphatic polyisocyanate
REACH registration no.	01-2119485796-17

Identification numbers

CAS no.	28182-81-2
EC no.	931-274-8

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
No data available.

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
Skin Sens. 1; H317
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
28182-81-2 (Aliphatic polyisocyanate)

Hazard pictograms



GHS07

Signal word
Warning

Hazard statement(s)

H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Precautionary statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

2.3 Other hazards

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 Aliphatic polyisocyanate

Identification numbers
CAS no. 28182-81-2
EC no. 931-274-8

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**	**%**
hexamethylene-diisocyanate	impurity	
822-06-0 212-485-8 615-011-00-1 01-2119457571-37	< 0.10	wt%

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, irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.

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
No data available.

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.

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 non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents. Immediately clean contaminated areas with following substances:
usable (flammable): Water 45 Vol.%, Ethanol or Isopropyl Alcohol 50 Vol.%, Ammonia solution (density=0.88) 5 Vol.%
Alternative applicable to that (not flammable): Sodium Carbonate 5 Vol.%, Water 95 Vol.%

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: CO2 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
Do not store together with: Alcohols; Amines

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	**hexamethylene-diisocyanate**	**822-06-0**	**212-485-8**
	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	**Aliphatic polyisocyanate**			**28182-81-2 931-274-8**	
	inhalative	Short term (acut)	local	1	mg/m³
	with reference to: Air				
	inhalative	Long term (chronic)	local	0.5	mg/m³
	with reference to: Air				
2	**hexamethylene-diisocyanate**			**822-06-0 212-485-8**	
	inhalative	Short term (acut)	systemic	0.07	mg/m³
	inhalative	Long term (chronic)	systemic	0.035	mg/m³
	inhalative	Long term (chronic)	local	0.035	mg/m³
	inhalative	Short term (acut)	local	0.07	mg/m³

PNEC values

No	Substance name		CAS / EC no	
	ecological compartment	Type	Value	
1	**Aliphatic polyisocyanate**		**28182-81-2** **931-274-8**	
	water	fresh water	0.127	mg/L
	water	marine water	0.0127	mg/L
	water	fresh water sediment	266701	mg/kg
	with reference to: dry weight			
	water	marine water sediment	26670	mg/kg
	with reference to: dry weight			
	soil	-	53183	mg/kg
	with reference to: dry weight			
	sewage treatment plant	-	88	mg/L
2	**hexamethylene-diisocyanate**		**822-06-0** **212-485-8**	
	water	fresh water	0.0774	mg/L
	water	marine water	0.00774	mg/L
	water	fresh water sediment	0.01334	mg/kg
	with reference to: dry weight			
	water	marine water sediment	0.001334	mg/kg
	with reference to: dry weight			
	soil	-	0.0026	mg/kg
	with reference to: dry weight			
	sewage treatment plant	-	8.42	mg/L

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.

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

Hand protection
Adhere to the professional organisation rule “Use of protective gloves”.
Appropriate chemicals resistant glove tested in compliance with EN 374.
Recommendation for protection against components generally found in the products:

For short-term contact (i.e. splash protection):
Appropriate material: nitrile rubber, Neopren
Material thickness: > 0.4 mm
Breakthrough time: > 480 min

Before use, the protective glove should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties).
Adhere to the manufacturer’s instructions and information relating to the use, storage, care and replacement of protective gloves.
Protective gloves shall be replaced immediately when physically damaged or worn. Preventive hand protection (skin protection cream) recommended. Wash immediately contaminated skin).
Design operations thus to avoid permanent use of protective gloves.

Other
Personal should wear antistatic clothings made of natural fiber or of high temperature resistant synthetic fiber. All parts of the body should be washed after contact.

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
liquid

Colour
colourless

Odour
almost odourless

pH value
No data available

Boiling point / boiling range			
Comments	Decomposes below boiling point.		

Melting point/freezing point			
Value	appr.	-51	°C

Decomposition temperature			
Value	appr.	250	°C

Flash point			
Value	appr.	228	°C

Ignition temperature			
Value	appr.	460	°C

Flammability
No data available

Lower explosion limit
No data available

Upper explosion limit
No data available

Vapour pressure			
Value	<	0.0000 3	hPa
Reference temperature		20	°C

Relative vapour density
No data available

Relative density
No data available

Density			
Value	appr.	1.17	g/cm³
Reference temperature		20	°C
Method	DIN 53217		

Solubility
No data available

Partition coefficient n-octanol/water (log value)					
No	**Substance name**		**CAS no.**		**EC no.**
1	**Aliphatic polyisocyanate**		**28182-81-2**		**931-274-8**
log Pow			9.81		
Reference temperature			20	°C	
Method	QSAR				
Source	ECHA				

Kinematic viscosity				
Value	appr.	3000	mPa*s	
Reference temperature		23	°C	
Type	dynamic			
Method	DIN EN ISO 3219/A.3			

Particle characteristics
No data available

9.2 Other information

Other information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
No data available.

10.3 Possibility of hazardous reactions
Exothermic reactions are possible in the event of contact with incompatible substances.

10.4 Conditions to avoid
No data available.

10.5 Incompatible materials
Amines; Alcohols; Formation of CO2 upon contact with water, development of overpressure in closed containers is possible. Bursting hazard

10.6 Hazardous decomposition products
None if stored, handled and transported properly.

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	**Aliphatic polyisocyanate**		**28182-81-2**		**931-274-8**
LD50	>		2500		mg/kg bodyweight
Species	rat				
Method	OECD 423				
Source	ECHA				
2	**hexamethylene-diisocyanate**		**822-06-0**		**212-485-8**
LD50			746		mg/kg bodyweight
Species	rat				
Method	OECD 401				
Source	ECHA				

Acute dermal toxicity			
No	**Substance name**	**CAS no.**	**EC no.**

1	Aliphatic polyisocyanate	28182-81-2	931-274-8
LD50	>	2000	mg/kg bodyweight
Species	rat		
Method	OECD 402		
Source	ECHA		
2	**hexamethylene-diisocyanate**	**822-06-0**	**212-485-8**
LD50	>	7000	mg/kg bodyweight
Species	rat		
Method	OECD 402		
Source	ECHA		

Acute inhalational toxicity			
No	**Product Name**		
LC50		543	mg/m³
Duration of exposure		4	h
Species	rat (male)		
Reference substance	Hexamethylene-1,6-diisocyanate homopolymer		
Method	OECD 403		
LC50		390	mg/m³
Duration of exposure		4	h
Species	rat (female)		
Reference substance	Hexamethylene-1,6-diisocyanate homopolymer		
Method	OECD 403		
Comments	The substance was tested in a form (that is to say with a particular grain size distribution) that differs from the forms it is usually marketed and most probably used. The "split-entry" concept and available data related to the grain size during end-use of this substance justify a modified classification for acute inhalation toxicity.		

No	Substance name	CAS no.	EC no.
1	**hexamethylene-diisocyanate**	**822-06-0**	**212-485-8**
LC50		0.124	mg/l
Duration of exposure		4	h
State of aggregation	Vapour		
Species	rat		
Method	OECD 403		
Source	ECHA		

Skin corrosion/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**Aliphatic polyisocyanate**	**28182-81-2**	**931-274-8**
Species	rabbit		
Method	OECD 404		
Source	ECHA		
Evaluation	low-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Serious eye damage/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**Aliphatic polyisocyanate**	**28182-81-2**	**931-274-8**
Species	rabbit		
Method	OECD 405		
Source	ECHA		
Evaluation	low-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Respiratory or skin sensitisation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**Aliphatic polyisocyanate**	**28182-81-2**	**931-274-8**
Route of exposure	Skin		
Species	guinea pig		

Method	OECD 406
Source	ECHA
Evaluation	sensitizing

2	hexamethylene-diisocyanate	822-06-0	212-485-8

Route of exposure	respiratory tract
Species	guinea pig
Method	OECD 403
Source	ECHA
Evaluation	sensitizing
Route of exposure	Skin
Species	guinea pig
Method	OECD 406
Source	ECHA
Evaluation	sensitizing

Germ cell mutagenicity

No	Substance name	CAS no.	EC no.
1	hexamethylene-diisocyanate	822-06-0	212-485-8

Method	OECD 474
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.

Reproduction toxicity

No	Substance name	CAS no.	EC no.
1	hexamethylene-diisocyanate	822-06-0	212-485-8

Method	OECD 422
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.

Carcinogenicity

No	Substance name	CAS no.	EC no.
1	hexamethylene-diisocyanate	822-06-0	212-485-8

Method	OECD 453
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Aspiration hazard

No data available

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	Substance name	CAS no.	EC no.

1	Aliphatic polyisocyanate	28182-81-2		931-274-8
LC50		>	100	mg/l
Duration of exposure			96	h
Species		Danio rerio		
Method		EU C.1		
Source		ECHA		

Toxicity to fish (chronic)
No data available

Toxicity to Daphnia (acute)				
No	Substance name	CAS no.		EC no.
1	Aliphatic polyisocyanate	28182-81-2		931-274-8
EC50			127	mg/l
Duration of exposure			48	h
Species		Daphnia magna		
Source		ECHA		

Toxicity to Daphnia (chronic)
No data available

Toxicity to algae (acute)				
No	Substance name	CAS no.		EC no.
1	Aliphatic polyisocyanate	28182-81-2		931-274-8
EC50		>	1000	mg/l
Duration of exposure			72	h
Species		Scenedesmus subspicatus		
Method		OECD 201		
Source		ECHA		
2	hexamethylene-diisocyanate	822-06-0		212-485-8
ErC50		>	77.4	mg/l
Duration of exposure			72	h
Species		Desmodesmus subspicatus		
Method		EU C.3		
Source		ECHA		

Toxicity to algae (chronic)				
No	Substance name	CAS no.		EC no.
1	hexamethylene-diisocyanate	822-06-0		212-485-8
NOEC			11.7	mg/l
Duration of exposure			72	h
Species		Desmodesmus subspicatus		
Method		EU C.3		
Source		ECHA		

Bacteria toxicity				
No	Substance name	CAS no.		EC no.
1	Aliphatic polyisocyanate	28182-81-2		931-274-8
EC50			3828	mg/l
Duration of exposure			3	h
Species		activated sludge		
Method		OECD 209		
Source		ECHA		

12.2 Persistence and degradability

Biodegradability				
No	Substance name	CAS no.		EC no.
1	Aliphatic polyisocyanate	28182-81-2		931-274-8
Type		aerobic biodegradation		
Value			1	%
Duration			28	day(s)

Method	OECD 301 A		
Source	ECHA		
Evaluation	not readily biodegradable		
2 hexamethylene-diisocyanate	**822-06-0**		**212-485-8**
Type	aerobic biodegradation		
Value		42	%
Duration		28	day(s)
Method	OECD 301 F		
Source	ECHA		

12.3 Bioaccumulative potential

Bioconcentration factor (BCF)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**Aliphatic polyisocyanate**	**28182-81-2**	**931-274-8**
BCF		141	
Method	QSAR		
Source	ECHA		

Partition coefficient n-octanol/water (log value)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**Aliphatic polyisocyanate**	**28182-81-2**	**931-274-8**
log Pow		9.81	
Reference temperature		20	°C
Method	QSAR		
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
No data available.

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	**Aliphatic polyisocyanate**	**28182-81-2**	**931-274-8**	**74**
2	**hexamethylene-diisocyanate**	**822-06-0**	**212-485-8**	**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 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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