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

Printing date 12.03.2021 Version number 4 Revision: 12.03.2021

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

· **1.1 Product identifier**
· Trade name: **Hyperclear, Componente B**

· Article number: 11451 (11449)
· UFI: G0T1-50SW-1000-47E6
· **1.2 Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
· Application of the substance / the mixture Hardening agent/ Curing agent

· **1.3 Details of the supplier of the safety data sheet**
· Manufacturer/Supplier: AKEMI chemisch technische Spezialfabrik GmbH
Lechstrasse 28
D 90451 Nürnberg
Tel. +49(0)911-642960
Fax. +49(0)911-644456
e-mail info@akemi.de

· Further information obtainable from: Laboratory
· **1.4 Emergency telephone number:** Product Safety Department AKEMI chemisch technische Spezialfabrik GmbH
Tel. +49(0)911-64296-59
Reachable during the following office hours:
Monday – Thursday from 07:30 a.m. to 16:30 p.m.
Friday from 07:30 a.m. to 13:30 p.m.
+44 (171) 635 91 91
National Poison Inform. Centre
Medical Toxicology Unit
Avalonley Road
London SE14 5ER

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SECTION 2: Hazards identification

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

Acute Tox. 4	H332	Harmful if inhaled.
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.

· **2.2 Label elements**
· Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.
· Hazard pictograms

GHS07

· Signal word Warning

· Hazard-determining components of labelling: Hexamethylene-1,6-diisocyanate homopolymer
4-isocyanatosulphonyltoluene
hexamethylene-di-isocyanate
· Hazard statements
H332 Harmful if inhaled.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
· Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.

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P261	Avoid breathing vapours.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
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: Contains isocyanates. May produce an allergic reaction.

· **2.3 Other hazards**

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

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SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

· Description: Mixture: consisting of the following components.

· Dangerous components:

CAS: 28182-81-2 EC number: 931-274-8 Reg.nr.: 01-2119485796-17-0000	Hexamethylene-1,6-diisocyanate homopolymer Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50-100%
CAS: 82985-35-1 EINECS: 280-084-5 Reg.nr.: 01-2119969956-12-xxxx	Bis(trimethoxysilylpropyl)amin Eye Dam. 1, H318	1-5%
CAS: 4083-64-1 EINECS: 223-810-8 Index number: 615-012-00-7 Reg.nr.: 01-21199800050-47	4-isocyanatosulphonyltoluene Resp. Sens. 1, H334 Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	<1%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 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.

· After inhalation: Supply fresh air and to be sure call for a 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.

· After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: If symptoms persist consult doctor.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

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

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* **SECTION 5: Firefighting measures**

· **5.1 Extinguishing media**
· Suitable extinguishing agents: CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· For safety reasons unsuitable extinguishing agents: Water with full jet
· **5.2 Special hazards arising from the substance or mixture** In case of fire, the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NOx)
Hydrogen cyanide (HCN)
· **5.3 Advice for firefighters**
· Protective equipment: Wear self-contained respiratory protective device.
· Additional information Collect contaminated fire fighting water separately. It must not enter the sewage system.

* **SECTION 6: Accidental release measures**

· **6.1 Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
· **6.2 Environmental precautions:** Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **6.4 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.

* **SECTION 7: Handling and storage**

· **7.1 Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· Information about fire - and explosion protection: No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**
· Storage:
· Requirements to be met by storerooms and receptacles: Provide floor trough without outlet.
· Information about storage in one common storage facility: Store away from foodstuffs.
· Further information about storage conditions: Store receptacle in a well ventilated area.
Protect from frost.
Keep container tightly sealed.
· Storage class: 12
· **7.3 Specific end use(s)** No further relevant information available.

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* **SECTION 8: Exposure controls/personal protection**

· **8.1 Control parameters**
· Additional information about design of technical facilities: No further data; see item 7.

· Ingredients with limit values that require monitoring at the workplace:

4083-64-1 4-isocyanatosulphonyltoluene

WEL	Short-term value: 0.07 mg/m³ Long-term value: 0.02 mg/m³ Sen; as -NCO

· DNELs

28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer

Inhalative	DNEL (Kurzzeit-akut)	1 mg/m³ Air (ARB)
	DNEL (Langzeit-wiederholt)	0.5 mg/m³ Air (ARB)

82985-35-1 Bis(trimethoxysilylpropyl)amin

Oral	DNEL (Langzeit-wiederholt)	1.54 mg/kg bw/day (BEV)
Dermal	DNEL (Langzeit-wiederholt)	4.31 mg/kg bw/day (ARB)
		1.54 mg/kg bw/day (BEV)
Inhalative	DNEL (Langzeit-wiederholt)	30.41 mg/m³ Air (ARB)
		5.36 mg/m³ Air (BEV)

· PNECs

28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer

PNEC (wässrig)	38.28 mg/l (KA)
	0.0127 mg/l (MW)
	0.127 mg/l (SW)
	1.27 mg/l (WAS)
PNEC (fest)	53,200 mg/kg Trockengew (BO)
	26,670 mg/kg Trockengew (MWS)
	266,700 mg/kg Trockengew (SWS)

82985-35-1 Bis(trimethoxysilylpropyl)amin

PNEC (wässrig)	22 mg/l (KA)
	0.02 mg/l (MW)
	0.2 mg/l (SW)
	2 mg/l (WAS)
PNEC (fest)	0.026 mg/kg Trockengew (BO)
	0.072 mg/kg Trockengew (MWS)
	0.72 mg/kg Trockengew (SWS)

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

· **8.2 Exposure controls**
· Personal protective equipment:
· General protective and hygienic measures: Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
· Respiratory protection: Short term filter device:
Filter A/P2
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.

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· Protection of hands: The protection gloves to be used have to comply with the specifications of the directive 89/686/EC and the directive derived decree EN374, respectively, e.g. the above listed protection glove type. The mentioned permeation times´ data were generated and verified with material samples of the recommended protection glove type in the scope of laboratory anylyses of the company KCL GmbH in compliance with EN374.
This recommendation refers exclusively to the material safety data sheet referenced product delivered by Akemi and the indicated field of application. In case of product dilution or in case of mixture with different substances or chemicals, and in condition of EN374 deviation the producer of CE-approved protection gloves must be contacted for detailed information (e.g., KCL GmbH, Germany, 36124 Eichenzell, internet: http://www.kcl.de).

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves: Butyl rubber, BR
Fluorocarbon rubber (Viton)
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material: The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· For the permanent contact gloves made of the following materials are suitable: Butyl rubber, BR

· As protection from splashes gloves made of the following materials are suitable: Butoject (KCL, Art_No. 897, 898)
Butyl rubber, BR

· Not suitable are gloves made of the following materials: Leather gloves
Strong material gloves

· Eye protection: Goggles recommended during refilling

· Body protection: Protective work clothing

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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· General Information	
· Appearance:	
Form:	Viscous
Colour:	Colourless
· Odour:	Odourless
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/freezing point:	Undetermined.

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Initial boiling point and boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gas):	Not applicable.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure:	Not determined.
· Density at 20 °C:	1.15 g/cm³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	3.0 %
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity**	No further relevant information available.
· **10.2 Chemical stability**	
· Thermal decomposition / conditions to be avoided:	No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions**	No dangerous reactions known.
· **10.4 Conditions to avoid**	No further relevant information available.
· **10.5 Incompatible materials:**	No further relevant information available.
· **10.6 Hazardous decomposition products:**	No dangerous decomposition products known.

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SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**

· Acute toxicity Harmful if inhaled.

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)		
Inhalative	LC50/4 h	0.414 mg/l (rat)

28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer		
Oral	LD50	>2,500 mg/kg (rat)

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	NOAEL-Werte	3 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
		>2,000 mg/kg (rat)
Inhalative	LC50/4 h	0.39 mg/l (rat) (OECD TG 403)
82985-35-1 Bis(trimethoxysilylpropyl)amin		
Oral	LD50	3,780 mg/kg (rat) (OECD 401)
	NOEL	200 mg/kg (rat) (OECd 408)
Dermal	LD50	11,865 mg/kg (rabbit) (OECD 402)
		11,752 mg/kg (rat)
	NOEL	>84 mg/kg (rat) (OECD 410)
4083-64-1 4-isocyanatosulphonyltoluene		
Oral	LD50	2,600 mg/kg (rat)

· Primary irritant effect: Do not get in eyes, on skin, or on clothing.
· Skin corrosion/irritation Based on available data, the classification criteria are not met.
· Serious eye damage/irritation Causes serious eye irritation.
· Respiratory or skin sensitisation May cause an allergic skin reaction.
· Additional toxicological information:
· CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
· Germ cell mutagenicity Based on available data, the classification criteria are not met.
· Carcinogenicity Based on available data, the classification criteria are not met.
· Reproductive toxicity Based on available data, the classification criteria are not met.
· STOT-single exposure May cause respiratory irritation.
· STOT-repeated exposure Based on available data, the classification criteria are not met.
· Aspiration hazard Based on available data, the classification criteria are not met.

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SECTION 12: Ecological information

· **12.1 Toxicity**

· Aquatic toxicity:	
28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer	
EC50	3,828 mg/l (BES) (OECD 209)
LC 0/96h	>82.8 mg/l (Brachydanio rerio) (OECD 203)
EC50/48h	127 mg/l (daphnia magna) (RL 67/548/EWG, Anhang V, C.3.)
ErC50/72h	>1,000 mg/l (Desmodesmus subspicatus)
EC0	>100 mg/l (daphnia magna) (OECD 202)
EL50/48h	127 mg/l (daphnia magna)
LL50/96h	8.9 mg/l (Brachydanio rerio)
EC10	370 mg/l (Desmodesmus subspicatus)
EC50/72h	>100 mg/l (Scenedesmus subspicatus) (OECD 201)
LC50/96h	>100 mg/l (Danio rerio.) (RL 67/548/EWG, Anhang V, C.1.)
82985-35-1 Bis(trimethoxysilylpropyl)amin	
EC50	1,000 mg/l (Klärschlamm: Atmungs-/Vermehrungshemmung)
EC50/48h	>100 mg/l (daphnia magna)
EC50/72h	>100 mg/l (Desmodesmus subspicatus)
LC50/96h	130 mg/l (Oncorhynchus mykiss)
	130 mg/l (Salmo gairdneri)
4083-64-1 4-isocyanatosulphonyltoluene	
EC50/72h	23 mg/l (green alge)
	150 mg/l (daphnia magna)

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LC50/96h	435 mg/l (piscis)

· **12.2 Persistence and degradability** No further relevant information available.
· Other information: The product is not easily biodegradable.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· Additional ecological information:
· General notes: Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
· **12.5 Results of PBT and vPvB assessment**
· PBT: Not applicable.
· vPvB: Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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

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SECTION 14: Transport information

· **14.1 UN-Number**	
· ADR, ADN, IMDG, IATA	Void
· **14.2 UN proper shipping name**	
· ADR, ADN, IMDG, IATA	Void
· **14.3 Transport hazard class(es)**	
· ADR, ADN, IMDG, IATA	
· Class	Void
· **14.4 Packing group**	
· ADR, IMDG, IATA	Void
· **14.5 Environmental hazards:**	
· Marine pollutant:	No
· **14.6 Special precautions for user**	Not applicable.
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	Void

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SECTION 15: Regulatory information

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

· Directive 2012/18/EU
· Named dangerous substances - ANNEX I None of the ingredients is listed.

· National regulations:

· Information about limitation of use: Employment restrictions concerning juveniles must be observed.

· Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

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· VOC EU 0.1 g/l

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* **SECTION 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.

· Relevant phrases
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
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.

· Department issuing SDS: Laboratory

· Contact: Elke Hake
Fon ++49 (0)911 64296-59
@mail E.Hake@akemi.de

· 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 Organisation
ADR: Accord relatif au transport international 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 Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3