Safety Data Sheet
acc. to OSHA HCS

Printing date 07/18/2019 Reviewed on 07/18/2019

*
1 Identification

· **Product identifier**
· Trade name: **Hyperclear, Componente A**

· Article number: 11450 (11449)
· Application of the substance / the mixture: Polyurethane resin

· **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

· Information department: Laboratory
· 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.

*
2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**
· GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS).
· Hazard pictograms


GHS07

· Signal word: Warning
· Hazard-determining components of labeling:
tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate
poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-[3-[3-(2H- benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]-
poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-hydroxy-
bis(1,2,2,6,6-Pentamethyl-piperidyl)sebacat
methyl 1,2,2,6,6-pentamethyl-4-piperidylsebacate
· Hazard statements
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
· Precautionary statements
P261 Avoid breathing vapours.
P280 Wear protective gloves / eye 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.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **Classification system:**
· NFPA ratings (scale 0 - 4)

Health = 2
Fire = 0
Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = *2
Fire = 0
Reactivity = 0

· **Other hazards**
· Results of PBT and vPvB assessment
· PBT: Not applicable.
· vPvB: Not applicable.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· Description: Mixture: consisting of the following components.

· Dangerous components:

CAS: 136210-30-5 ELINCS: 429-270-1 Index number: 607-521-00-8	tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate Skin Sens. 1, H317	50-100%
CAS: 623-91-6 EINECS: 210-819-7	diethyl fumarate Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335	1-5%
CAS: 104810-47-1 Index number: 607-176-00-3	poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-[3-[3-(2H- benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]- Skin Sens. 1, H317	<1%
CAS: 104810-48-2	poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-hydroxy- Skin Sens. 1, H317	<1%
CAS: 41556-26-7	bis(1,2,2,6,6-Pentamethyl-piperidyl)sebacat Skin Sens. 1, H317	<1%
CAS: 82919-37-7 EINECS: 280-060-4	methyl 1,2,2,6,6-pentamethyl-4-piperidylsebacate Skin Sens. 1, H317	<1%

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

4 First-aid measures

· **Description of first aid measures**
· 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.
· Information for doctor:
· Most important symptoms and effects, both acute and delayed No further relevant information available.
· Indication of any immediate medical attention and special treatment needed No further relevant information available.

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5 Fire-fighting measures

· **Extinguishing media**
· Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire fighting measures that suit the environment.
· For safety reasons unsuitable extinguishing agents: Water with full jet
· **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)
· **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.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation
· **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.
· **Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
· **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.
· **Protective Action Criteria for Chemicals**

· PAC-1:		
102-60-3	1,1',1",1"'-ethylenedinitrilotetrapropan-2-ol	34 mg/m³
67762-90-7	Siloxane und Silicone, di-Me, Reaktionsprodukt mit Silica	120 mg/m³

· PAC-2:		
102-60-3	1,1',1",1"'-ethylenedinitrilotetrapropan-2-ol	370 mg/m³
67762-90-7	Siloxane und Silicone, di-Me, Reaktionsprodukt mit Silica	1,300 mg/m³

· PAC-3:		
102-60-3	1,1',1",1"'-ethylenedinitrilotetrapropan-2-ol	2,200 mg/m³
67762-90-7	Siloxane und Silicone, di-Me, Reaktionsprodukt mit Silica	7,900 mg/m³

7 Handling and storage

· **Handling:**
· Precautions for safe handling Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· Information about protection against explosions and fires: No special measures required.

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· **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: Protect from frost.
Store in cool, dry conditions in well sealed receptacles.
· Storage class: 10
· **Specific end use(s)** No further relevant information available.

* **8 Exposure controls/personal protection**

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· Components with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· Additional information: The lists that were valid during the creation were used as basis.

· **Exposure controls**
· Personal protective equipment:
· General protective and hygienic measures: The usual precautionary measures for handling chemicals should be followed.
Avoid close or long term contact with the skin.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat or drink while working.
· Breathing equipment: 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 respiratory protective device that is independent of circulating air.
· 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).
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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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: 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 gloves

· Eye protection: Goggles recommended during refilling.

· Body protection: Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· General Information	
· Appearance:	
Form:	Pasty
Color:	Different according to coloring
· Odor:	Weak, characteristic
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	100 °C (212 °F)
· Flammability (solid, gaseous):	Not applicable.
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density at 20 °C (68 °F):	1.64 g/cm³ (13.69 lbs/gal)
· Specific gravity:	Not determined.
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.

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· 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:	0.3 %
Solids content:	51.9 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

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

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11 Toxicological information

· **Information on toxicological effects**
· Acute toxicity:

· LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)		
Oral	LD50	>2,192-2,319 mg/kg (rat)
Dermal	LD50	>2,449 mg/kg (rat)

136210-30-5 tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate		
Oral	LD50	>2,000 mg/kg (rat) (Richtlinie 67/548/EWG, Anhang V, B.1.)
Dermal	LD50	>2,000 mg/kg (rat) (Richtlinie 67/548/EWG, Anhang V, B.3.)
Inhalative	LC50/4h	>4,224 mg/m3 (rat) (OECD-Prüfrichtlinie 403)
168253-59-6 Asparaginsäure, N,N'-(2-methyl-1,5-pentadiyl)bis-, 1,1',4,4'-tetraethylester		
Oral	LD50	>2,000 mg/kg (rat) (OECD423)
	NOEL	200 mg/kg (rat)
623-91-6 diethyl fumarate		
Oral	LD50	1,780 mg/kg (rat)
104810-48-2 poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-hydroxy-		
Oral	LD50	>2,000 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
Inhalative	LC50	>5.8 mg/l (rat) (OECD 403)
41556-26-7 bis(1,2,2,6,6-Pentamethyl-piperidyl)sebacat		
Oral	LD50	3,230 mg/kg (rat)

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Dermal	LD50	>2,000 mg/kg (rat)

· Primary irritant effect:
· on the skin: No irritant effect.
· Sensitization: Sensitization possible through skin contact.
· Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

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12 Ecological information

· **Toxicity**

· Aquatic toxicity:	
136210-30-5 tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate	
EC50	3,110 mg/l (BES) (ISO Vorschrift 8192-1986 E)
IC50/72h	113 mg/l (Scenedesmus subspicatus) (Richtlinie 67/548/EWG, Anhang V, C.3.)
EC50/48h	88.6 mg/l (daphnia magna) (UBA-Verfahrensvorschlag Mai 1984)
ErC50/72h	113 mg/l (Scenedesmus subspicatus)
NOEC	100 mg/kg (Ac) (OECD 208)
	100 mg/kg (As) (OECD 208)
	100 mg/kg (Bn) (OECD 208)
	≥1,000 mg/kg (Eisenia fetida (Regenwürmer)) (OECD-Prüfrichtlinie 207)
NOEC/21d	0.01 mg/l (daphnia magna) (Richtlinie 67/548/EWG, Anhang V, C.20.)
LC50/96h	66 mg/l (Danio rerio.) (OECD 203)
168253-59-6 Asparaginsäure, N,N'-(2-methyl-1,5-pentadiyl)bis-, 1,1',4,4'-tetraethylester	
EC50	>10,000 mg/l (BES)
LC 0/96h	>87 mg/l (Danio rerio.)
ErC50/72h	<84.2 mg/l (Scenedesmus subspicatus)
EC0	>96.9 mg/l (daphnia magna)
104810-48-2 poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-hydroxy-	
EC50	>9 mg/l (green alge) (OECD 201)
	3.8 mg/l (daphnia magna) (OECD 202)
LC50	2.8 mg/l (piscis) (OECD 203)
41556-26-7 bis(1,2,2,6,6-Pentamethyl-piperidyl)sebacat	
EC50/24h	20 mg/l (daphnia magna) (OECD 202)
EC50	>100 mg/l (BES) (OECD 209)
EC50/72h	1.68 mg/l (Desmodesmus subspicatus) (OECD 201)
LC50/96h	0.97 mg/l (lepomis macrochirus)
	7.9 mg/l (Oncorhynchus mykiss) (OECD 203: ISO 7346; 92/69/EWG, C.1)

· **Persistence and degradability** Not easily biodegradable

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· **Behavior in environmental systems:**
· Bioaccumulative potential: Non significant accumulation in organisms
· Mobility in soil: No further relevant information available.
· **Ecotoxical effects:**
· Remark: Harmful to fish
· **Additional ecological information:**
· General notes: Harmful to aquatic organisms
Water hazard class 1 (Self-assessment): slightly hazardous for water
· **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 of together with household garbage. Do not allow product to reach sewage system.

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

14 Transport information

· **UN-Number** · DOT, ADR, ADN, IMDG, IATA	Void
· **UN proper shipping name** · DOT, ADR, ADN, IMDG, IATA	Void
· **Transport hazard class(es)** · DOT, ADR, ADN, IMDG, IATA · Class	Void
· **Packing group** · DOT, ADR, IMDG, IATA	Void
· **Environmental hazards:** · Marine pollutant:	No
· **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. to handle similar to packing group II
· DOT · Remarks:	to handle similar to packing group II
· ADR · Remarks:	to handle similar to packing group II
· IMDG · Remarks:	to handle similar to packing group II
· IATA · Remarks:	to handle similar to packing group II

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· **UN "Model Regulation":** Void

* **15 Regulatory information**

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

· Section 355 (extremely hazardous substances):
None of the ingredient is listed.

· Section 313 (Specific toxic chemical listings):
None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):
All components have the value ACTIVE.

· Hazardous Air Pollutants
None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

· Cancerogenity categories

· EPA (Environmental Protection Agency)
None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)
None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)
None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

· GHS label elements — The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms

GHS07

· Signal word — Warning

· Hazard-determining components of labeling:

tetraethyl-N,N'-(methylenedicyclohexane-4,1-diyl)bis-DL-aspartate
poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-[3-[3-(2H- benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropoxy]-
poly(oxy-1,2-ethanediyl), α-[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]-ω-hydroxy-
bis(1,2,2,6,6-Pentamethyl-piperidyl)sebacat
methyl 1,2,2,6,6-pentamethyl-4-piperidylsebacate

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· Hazard statements
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.

· Precautionary statements

P261	Avoid breathing vapours.
P280	Wear protective gloves / eye 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.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P501	Dispose of contents/container in accordance with local/ regional/national/international regulations.

· National regulations:

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

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

· VOC USA 0.0 g/l / 0.00 lb/gal

· **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 SDS:** Laboratory

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

· Date of preparation / last revision 07/18/2019 / -

· 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 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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
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. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3