Hyberol

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Revision date: 1/10/2025 Supersedes version of: 1/09/2023 Version: 4.0

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

1.1. Product identifier

Product form	:	Mixture
Product name	:	Hyberol
UFI	:	HYH5-X5R5-UD0A-483D
Product group	:	Trade product
Other means of identification	:	Solution of boron polyol chelates and complexes and zinc (II) polyaminocarboxylic acid chelates appearing on the list of admitted chelating agents and chelated trace-elements (EC regulation nr. 2019/1009.

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

Relevant identified uses

Use of the substance/mixture	:	Fertilisers

1.3. Details of the supplier of the safety data sheet

BMS Micro-Nutrients NV
Rijksweg 32
be 2880 Bornem
Belgium
T +32/3 899 10 10
info@chelal.com, www.chelal.com

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Reproductive toxicity, Category 1B H360
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS08

Signal word (CLP)	:	Danger
Contains	:	Reaction products of monoethanolamine and boric acid (1:3)
Hazard statements (CLP)	:	H360 - May damage fertility or the unborn child.
Precautionary statements (CLP)	:	P201 - Obtain special instructions before use. P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P308+P313 - IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	EC Index-No.: 275-554-1 REACH-no: 01-2120773690-49	18-22	Aquatic Chronic 3, H412
Reaction products of monoethanolamine and boric acid (1:3)	REACH-no: 01-2119548394-33	15 – 20	Repr. 1B, H360FD

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.
First-aid measures for first aider : First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact : None under normal conditions.
Symptoms/effects after eye contact : None under normal conditions.
Symptoms/effects after ingestion : None under normal conditions.

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 : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : No fire hazard.
Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Handling temperature : 5 – 30 °C
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.
Storage conditions : Keep cool. Protect from sunlight.
Storage temperature : 5 – 30 °C
Packaging materials : Store always product in container of same material as original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

Hyberol	
Belgium - Occupational Exposure Limits	
boron (inhalable)	2; 6 mg/m³

Hyberol	
Germany - Occupational Exposure Limits (Generic OEL data)	
zinc and inorganic compounds (long term inhalable & respirable fraction; short term inhalable & respirable fraction)	2 & 0,1; 4 & 0,4 mg/m³
boron (inhalable)	0.5; 1 mg/m³
Spain - Occupational Exposure Limits	
boron (inhalable)	2; 6 mg/m³

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
Germany - Occupational Exposure Limits (Generic OEL data)	
zinc and inorganic compounds (long term inhalable & respirable fraction; short term inhalable & respirable fraction)	2 & 0,1; 4 & 0,4 mg/m³

Reaction products of monoethanolamine and boric acid (1:3)	
Belgium - Occupational Exposure Limits	
boron (long term; short term)	2; 6 mg/m³
Germany - Occupational Exposure Limits (Generic OEL data)	
boron (long term inhalable aerosol; short term inhalable aerosol)	0,5; 1 mg/m³
Spain - Occupational Exposure Limits	
boron (long term; short term)	2; 6 mg/m³

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Personal protection equipment

Personal protective equipment:
Wear recommended personal protective equipment.
Personal protective equipment symbol(s):



Eye and face protection

Eye protection:
Safety glasses

Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Protective gloves

Respiratory protection

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	dark brown.
Odour	:	odourless.
Odour threshold	:	Not available
Melting point	:	Not applicable
Freezing point	:	Not available
Boiling point	:	Not available
Flammability	:	Non flammable.
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	8 – 8,5 (1% solution)
Viscosity, kinematic	:	Not available
Solubility	:	complete.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	≈ 1,22 kg/l
Relative density	:	Not available
Relative vapour density at 20°C	:	Not available
Particle characteristics	:	Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
LD50 oral rat	> 5000 mg/kg bodyweight (OECD 423) result obtained on a similar substance: reaction mass of MnEDTA, MnDTPA and MnHEEDTA
LC50 Inhalation - Rat (Dust/Mist)	> 5 mg/l/4h (OECD 436)

Skin corrosion/irritation : Not classified
pH: 8 – 8,5 (1% solution)

Reaction products of monoethanolamine and boric acid (1:3)	
pH	8 – 8,5 (1% solution)

Serious eye damage/irritation : Not classified
pH: 8 – 8,5 (1% solution)

Reaction products of monoethanolamine and boric acid (1:3)	
pH	8 – 8,5 (1% solution)

Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : May damage fertility or the unborn child.

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
NOAEL (animal/female, F0/P)	> 1000 mg/kg bodyweight Wistar rat; 50-60 days; OECD 422, result obtained on a similar substance: reaction mass of MnEDTA, MnDTPA and MnHEEDTA

STOT-single exposure : Not classified
STOT-repeated exposure : Not classified

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
NOAEL (subacute, oral, animal/male, 28 days)	> 1000 mg/kg bodyweight Wistar rat; OECD 422, result obtained on a similar substance: reaction mass of MnEDTA, MnDTPA and MnHEEDTA
NOAEL (subacute, oral, animal/female, 28 days)	> 1000 mg/kg bodyweight Wistar rat; 50-60 days; OECD 422, result obtained on a similar substance: reaction mass of MnEDTA, MnDTPA and MnHEEDTA

Aspiration hazard : Not classified

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute) : Not classified
Hazardous to the aquatic environment, long–term (chronic) : Not classified

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
LC50 - Fish [1]	> 1050 mg/l Danio rerio (OECD 203)

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
EC50 - Crustacea [1]	> 1118 mg/l (24h & 48h OECD 202)
ErC50 algae	20,4 mg/l 72h (OECD 201)

12.2. Persistence and degradability

Hyberol	
Persistence and degradability	Rapidly degradable

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
Persistence and degradability	Inherently biodegradable.

Reaction products of monoethanolamine and boric acid (1:3)	
Persistence and degradability	Rapidly degradable

12.3. Bioaccumulative potential

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA	
Partition coefficient n-octanol/water (Log Kow)	< -10
Bioaccumulative potential	A toxicokinetic assessment was performed based on the available data of the substance. Based on the physical/chemical properties of the reaction mixture of ZnEDTA, ZnDTPA and ZnHEEDTA, absorption factors for this substance are derived to be 10% (oral), 10% (inhalation) and 10% (dermal) for risk assessment purposes. No significant bioaccumulation potential is expected.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Disposal must be done according to official regulations.
Additional information : Do not re-use empty containers.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR) : Not applicable
UN-No. (IMDG) : Not applicable

UN-No. (IATA)	:	Not applicable
UN-No. (ADN)	:	Not applicable
UN-No. (RID)	:	Not applicable

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable
Proper Shipping Name (ADN)	:	Not applicable
Proper Shipping Name (RID)	:	Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

ADN

Transport hazard class(es) (ADN) : Not applicable

RID

Transport hazard class(es) (RID) : Not applicable

14.4. Packing group

Packing group (ADR)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Packing group (IATA)	:	Not applicable
Packing group (ADN)	:	Not applicable
Packing group (RID)	:	Not applicable

14.5. Environmental hazards

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

Inland waterway transport

Not applicable

Rail transport

Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

National regulations

Germany

Water hazard class (WGK)	:	WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1).
Chemicals Prohibition Ordinance (ChemVerbotsV)	:	This product is subject to ChemVerbotsV Annex 2 Entry 1. The following requirements must be observed: authorization requirement (according to § 6 paragraph 1 sentence 1), basic requirements for carrying out the delivery (according to § 8 paragraph 1, 3 and 4), identification and documentation (according to § 9 paragraph 1 to 3) and exclusion of the shipping route (according to § 10).
Hazardous Incident Ordinance (12. BImSchV)	:	Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen	:	None of the components are listed
SZW-lijst van mutagene stoffen	:	None of the components are listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	:	None of the components are listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	:	None of the components are listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	:	None of the components are listed

Denmark

Danish National Regulations	:	Young people below the age of 18 years are not allowed to use the product Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

For the following substances of this mixture a chemical safety assessment has been carried out:

Reaction mass of ZnEDTA, ZnDTPA and ZnHEEDTA

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disruptor

Full text of H- and EUH-statements:	
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3

Full text of H- and EUH-statements:	
H360	May damage fertility or the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H412	Harmful to aquatic life with long lasting effects.
Repr. 1B	Reproductive toxicity, Category 1B

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.