Material Safety Data Sheet
according to Regulation (EC) No. 1907/2006

Nutribor®

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

1.1 Product identifier

Trade name	:	Nutribor®
UFI	:	P5R5-E004-D005-EKHH

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

Use of the Substance/Mixture	:	Fertilizer

1.3 Details of the supplier of the safety data sheet

Company	:	COMPO EXPERT GmbH Krögerweg 10 D-48155 Münster
Telephone	:	+49 (0) 251 29 79 81 – 000
Telefax	:	+49 (0) 251 29 79 81 - 111
E-mail address of person responsible for the SDS	:	info@compo-expert.com

1.4 Emergency telephone number

GBK GmbH - Global Regulatory Compliance - 24h
Telephone: +49 (0) 6132 - 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Reproductive toxicity, Category 1B	H360FD: May damage fertility. May damage the unborn child.
Chronic aquatic toxicity, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H360FD	May damage fertility. May damage the unborn child.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/ eye protection/ face protection.

Response:

P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P405	Store locked up.

Disposal:

P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

May impair fertility.
May cause harm to the unborn child.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Mixture of inorganic salts
This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation1907/2006/EC.

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
manganese sulphate (1:1)	7785-87-7 232-089-9 01-2119456624-35-XXXX	STOT RE 2; H373 Aquatic Chronic 2; H411 Eye Dam. 1; H318	<= 3
Boric acid	11113-50-1 234-343-4 01-2119486683-25-XXXX	Repr. 1B; H360FD	>= 5,5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Take off immediately all contaminated clothing.
Wash contaminated clothing before re-use.

If inhaled : If breathed in, move person into fresh air.
Administer amyl nitrite.

In case of skin contact : Wash off with soap and plenty of water.
After contact with skin, wash immediately with plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : The product is not flammable.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Heating or fire can release toxic gas.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Avoid dust formation.
Keep away from sources of ignition - No smoking.
Contact manufacturer.

6.2 Environmental precautions

Environmental precautions : Should not be released into the environment.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Ensure adequate ventilation.
Use mechanical handling equipment.
Sweep up or vacuum up spillage and collect in suitable container for disposal.
Clean contaminated surface thoroughly.
Flush with water.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid dust formation. Keep away from sources of ignition - No smoking.
Advice on protection against fire and explosion	:	During processing, dust may form explosive mixture in air. Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).
Hygiene measures	:	Keep away from food, drink and animal feedingstuffs. Take off immediately all contaminated clothing. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep in a dry, cool and well-ventilated place.
Further information on storage conditions	:	humid air and water
Storage class (TRGS 510)	:	6.1D, Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Specific use(s)	:	Always read the label and product information before use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
manganese sulphate (1:1)	manganese sulphate	(Inhalable fraction)	0,5 mg/m3	DE TRGS 900
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., The threshold value is based on the element content of the corresponding metal., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		AGW (Inhalable	0,5 mg/m3	DE TRGS

		fraction)	(Manganese)	900
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., The threshold value is based on the element content of the corresponding metal., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
			0,5 mg/m3	
Boric acid	11113-50-1	TWA	2,6 mg/m3	DE TRGS 900
		STEL	5,2 mg/m3	DE TRGS 900
			0,5 mg/m3	

Obey general dustlimit.

Mangansulfat	7785-87-7, 7785-87-7	manganese: 20 µg/l (Blood)	Immediately after exposition or after working hours, In case of long-term exposition: after more than one shift	TRGS 903

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Boric acid	Workers	Inhalation	Long-term exposure, Systemic effects	8,28 mg/m3
	Workers	Skin contact	Long-term exposure, Systemic effects	392 mg/kg
	Consumers	Ingestion	Short-term exposure, Systemic effects	0,98 mg/kg
	Consumers	Ingestion	Long-term exposure, Systemic effects	0,98 mg/kg
	Consumers	Inhalation	Long-term exposure, Systemic effects	4,15 mg/m3
	Consumers	Skin contact	Long-term exposure, Systemic effects	196 mg/kg

8.2 Exposure controls

Engineering measures

Ensure thorough ventilation of stores and work areas.

Take precautionary measures against static discharges.

Personal protective equipment

Eye protection	:	Wear suitable gloves and eye/face protection.
Hand protection		
Remarks	:	For prolonged or repeated contact use protective gloves. Preventive skin protection
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	Short term Half mask with a particle filter P2 (EN 143)
Protective measures	:	Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

General advice	:	Should not be released into the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	crystalline
Colour	:	white
Odour	:	characteristic
pH	:	ca. 6
Melting point/range	:	No data available
Boiling point/boiling range	:	Not applicable

Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	The product is not flammable.
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	Not applicable
Bulk density	:	ca. 1.000 kg/m³
Solubility(ies)		
Water solubility	:	partly soluble
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No decomposition if stored and applied as directed.
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	Not considered an oxidizing substance

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

10.4 Conditions to avoid

Conditions to avoid : Keep away from heat and sources of ignition.

10.5 Incompatible materials

Materials to avoid : Water
Avoid moisture.

10.6 Hazardous decomposition products

Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)
Sulphur oxides

SECTION 11: Toxicological information

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

Acute toxicity

Components:

manganese sulphate (1:1):

Acute oral toxicity : LD50 (Rat): 2.150 mg/kg

Boric acid:

Acute oral toxicity : LD50 (Mouse): 3.450 mg/kg

LD50 (Rat): 2.660 mg/kg

Acute inhalation toxicity : LC50 (Rat): 2 mg/l

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2.000 mg/kg

Skin corrosion/irritation

Components:

Boric acid:
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Remarks: Contact with eyes may cause irritation.

Components:

Boric acid:
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation

Respiratory or skin sensitisation

Product:

Remarks: None known.

Components:

Boric acid:
Method: OECD Test Guideline 406
Result: non-sensitizing

germ cell mutagenicity

Components:

Boric acid:

Genotoxicity in vitro	:	Test Type: Mammalian cell gene mutation assay Result: Mutagenicity tests revealed no genotoxic potential. Remarks: In vitro tests did not show mutagenic effects
Germ cell mutagenicity-Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

Components:

Boric acid:
Species: Rat
Application Route: Oral
Method: OECD Test Guideline 451
Remarks: Animal testing did not show any carcinogenic effects.

Reproductive toxicity

Components:

Boric acid:

Effects on foetal development	:	Remarks: Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and

developmental effects.

Reproductive toxicity - Assessment	:	May damage fertility. May damage the unborn child.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties

No data available

Further information

No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	Remarks: No data available

Components:

manganese sulphate (1:1):

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 30 mg/l

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: Expected to be ultimately biodegradable

Components:

Boric acid:

Biodegradability	:	Remarks: Not applicable

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Product:

Mobility	:	Remarks: No data available
Distribution among environmental compartments	:	Remarks: No data available

Components:

Boric acid:

Mobility	:	Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	Remarks: Not applicable

Components:

Boric acid:

Assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. Remarks: Not applicable

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Product:

Additional ecological information	:	Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. Fertilizer Check if agriculture use is possible.
Contaminated packaging	:	Dispose of as unused product. If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14: Transport information

14.1 UN number or ID number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not relevant

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : contains Boric acid

Water contaminating class (Germany) : WGK 2 water endangering

15.2 Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Full text of H-Statements

H318	:	Causes serious eye damage.
H360FD	:	May damage fertility. May damage the unborn child.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic	:	Chronic aquatic toxicity
Eye Dam.	:	Serious eye damage
Repr.	:	Reproductive toxicity
STOT RE	:	Specific target organ toxicity - repeated exposure

(Q)SAR - (Quantitative) Structure Activity Relationship; 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; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; DIN - Standard of the German Institute for Standardisation; ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TRGS - Technical Rule for Hazardous Substances; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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