

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Reference number: S0261

Issue date: 14/10/2024 Revision date: 09/10/2024 Supersedes version of: 15/10/2018 Version: 3.0

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

1.1. Product identifier

Product form : Mixture
Trade name : S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)
Product code : S0261
Product group : Blend

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

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem
The Netherlands
T +31(0)23-5319093 - F +31(0)23-5318027
info@duchefa.nl

1.4. Emergency telephone number

Emergency number : Supplier contact information:
+31(0)23-5319093 (M-F 09:00-17:00)
+31(0)6-30008100 (outside office hours)

Country	Organisation/Company	Address	Emergency number	Comment
	World Health Organization world directory of poison centres	http://apps.who.int/poisoncentres/		Consult website for a local poison centre
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Serious eye damage/eye irritation, Category 2 H319

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

Adverse physicochemical, human health and environmental effects

Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP)



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H319 - Causes serious eye irritation.

Precautionary statements (CLP)

: P280 - Wear eye protection.

P337+P313 - If eye irritation persists: Get medical advice/attention.

Extra phrases

: Based on research by TNO in Rijswijk (The Netherlands), commissioned by Duchefa Biochemie B.V. in Haarlem, the medium has no oxidising or explosive properties. As such the substance is not classified as oxidizing (H272, GHS03).

2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
Boric acid (10043-35-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The substance/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 %

Component	
MES monohydrate(145224-94-8)	
Sucrose(57-50-1)	
Myo-Inositol(87-89-8)	
Boric acid(10043-35-3)	The substance is not 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
Nicotinic Acid(59-67-6)	
Pyridoxine hydrochloride(58-56-0)	
Thiamine hydrochloride(67-03-8)	

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Component	
D-Pantothenate calcium(137-08-6)	
D(+)-Biotin(58-85-5)	
Potassium iodide(7681-11-0)	

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Potassium nitrate	CAS-No.: 7757-79-1 EC-No.: 231-818-8 REACH-no: 01-2119488224-35	77,1451	Ox. Sol. 2, H272
Ammonium nitrate	CAS-No.: 6484-52-2 EC-No.: 229-347-8 REACH-no: 01-2119490981-27-0012	7,2637	Ox. Sol. 3, H272 Eye Irrit. 2, H319
MES monohydrate	CAS-No.: 145224-94-8 EC-No.: 224-632-3	6,3595	Not classified
Calcium chloride	CAS-No.: 10043-52-4 EC-No.: 233-140-8 EC Index-No.: 017-013-00-2 REACH-no: 01-2119494219-28	5,396	Eye Irrit. 2, H319
Sucrose	CAS-No.: 57-50-1 EC-No.: 200-334-9	1,2804	Not classified
Myo-Inositol	CAS-No.: 87-89-8 EC-No.: 201-781-2	0,7708	Not classified
Magnesium sulphate anhydrous	CAS-No.: 7487-88-9 EC-No.: 231-298-2	0,6961	Not classified
Potassium dihydrogenphosphate	CAS-No.: 7778-77-0 EC-No.: 231-913-4 REACH-no: 01-2119490224-41	0,6552	Not classified
Ammonium iron(III) citrate	CAS-No.: 1185-57-5 EC-No.: 214-686-6 REACH-no: 01-2120762150-66-xxxx	0,3854	Skin Irrit. 2, H315 Eye Irrit. 2, H319

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Boric acid substance listed on REACH Candidate List	CAS-No.: 10043-35-3 EC-No.: 233-139-2 EC Index-No.: 005-007-00-2 REACH-no: 01-2119486683-25	0,0077	Repr. 1B, H360FD
Zinc sulphate heptahydrate	CAS-No.: 7446-20-0 EC-No.: 231-793-3 EC Index-No.: 030-006-00-9 REACH-no: 01-2119474684-27	0,0077	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Nicotinic Acid	CAS-No.: 59-67-6 EC-No.: 200-441-0 REACH-no: 01-2119968267-24	0,0077	Eye Irrit. 2, H319
Pyridoxine hydrochloride	CAS-No.: 58-56-0 EC-No.: 200-386-2	0,0077	Eye Dam. 1, H318
Thiamine hydrochloride	CAS-No.: 67-03-8 EC-No.: 200-641-8 REACH-no: 01-2120773699-31-xxxx	0,0077	Eye Irrit. 2, H319
D-Pantothenate calcium	CAS-No.: 137-08-6 EC-No.: 205-278-9	0,0077	Not classified
Manganese sulphate monohydrate	CAS-No.: 10034-96-5 EC-No.: 232-089-9 EC Index-No.: 025-003-00-4 REACH-no: 01-2119456624-35	0,0008	Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Chronic 2, H411
Aluminium chloride hexahydrate	CAS-No.: 7784-13-6 EC-No.: 616-520-1	0,0004	Skin Corr. 1A, H314
copper sulphate	CAS-No.: 7758-98-7 EC-No.: 231-847-6 EC Index-No.: 029-004-00-0	0,0001	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Nickel (II) chloride	CAS-No.: 7718-54-9 EC-No.: 231-743-0 EC Index-No.: 028-011-00-6	0,0001	Carc. 1A, H350i Muta. 2, H341 Repr. 1B, H360D Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Oral), H301 STOT RE 1, H372 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
D(+)-Biotin	CAS-No.: 58-85-5 EC-No.: 200-399-3	0,0001	Not classified
Potassium iodide	CAS-No.: 7681-11-0 EC-No.: 231-659-4	0,0001	STOT RE 1, H372

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Nickel (II) chloride	CAS-No.: 7718-54-9 EC-No.: 231-743-0 EC Index-No.: 028-011-00-6	(0,01 ≤ C ≤ 100) Skin Sens. 1, H317 (0,1 < C < 1) STOT RE 2, H373 (1 ≤ C ≤ 100) STOT RE 1, H372 (20 ≤ C ≤ 100) Skin Irrit. 2, H315

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 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 cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after eye contact	: Eye irritation.
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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	: Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO ₂). Water spray.
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5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : - PO_x. - CO_x. - NO_x. - SO_x.

5.3. Advice for firefighters

Firefighting instructions	: Prevent fire fighting water from entering the environment.
Protection during firefighting	: Wear proper protective equipment. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid raising powdered materials into airborne dust.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Wear suitable protective clothing. Avoid contact with skin and eyes.

6.1.2. 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".

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Sweep up dry powder and dispose properly.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid dust formation. Handle in accordance with good industrial hygiene and safety procedures. Avoid contact with skin and eyes. Wear personal protective equipment.

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

Storage conditions : Store at room temperature. Store in dry, well-ventilated area. Hygroscopic.

7.3. Specific end use(s)

For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Manganese sulphate monohydrate (10034-96-5)

Finland - Occupational Exposure Limits

Local name	Mangaani-(II)-sulfaatti, monohydraatti
HTP (OEL TWA) [1]	0,02 mg/m ³ alveolijae
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)

Boric acid (10043-35-3)

Austria - Occupational Exposure Limits

Local name	Borsäure (Orthoborsäure)
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S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Remark	Fortpflanzungsgefährdend: F, D
Regulatory reference	BGBl. II Nr. 156/2021
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Borsäure und Natriumborate
AGW (OEL TWA) [1]	0,5 mg/m ³ (E)
Peak exposure limitation factor	2(I)
Remark	AGS - Ausschuss für Gefahrstoffe; Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden; 10 - Der Arbeitsplatzgrenzwert bezieht sich auf den Elementgehalt des entsprechenden Metalls
Regulatory reference	TRGS900
Ireland - Occupational Exposure Limits	
Local name	Borate compounds inorganic: Boric acid
OEL TWA [1]	2 mg/m ³
Remark	Repr.1B (Substances which are presumed human reproductive toxicants)
Regulatory reference	Chemical Agents Code of Practice 2021
Latvia - Occupational Exposure Limits	
Local name	Borskābe
OEL TWA	10 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325
Lithuania - Occupational Exposure Limits	
Local name	Boro rūgštis
IPRV (OEL TWA)	10 mg/m ³
Remark	R (reprodukcijai toksiškas poveikis)
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Portugal - Occupational Exposure Limits	
Local name	Boratos, compostos inorgânicos
OEL TWA	2 mg/m ³ I (Fração inalável)
OEL STEL	6 mg/m ³ I (Fração inalável)
Remark	A4 (Agente não classificável como carcinogénico no Homem)
Regulatory reference	Norma Portuguesa NP 1796:2014
Slovenia - Occupational Exposure Limits	
Local name	borova kislina in natrijev borat
OEL TWA	0,5 mg/m ³
OEL STEL	1 mg/m ³
Remark	Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti)
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Spain - Occupational Exposure Limits	
Local name	Ácido bórico
VLA-ED (OEL TWA) [1]	2 mg/m ³
VLA-EC (OEL STEL)	6 mg/m ³
Remark	TR1B (Cuando las pruebas utilizadas para la clasificación procedan principalmente de datos en animales), s (Esta sustancia tiene prohibida total o parcialmente su comercialización y uso como fitosanitario y/o como biocida. Para una información detallada acerca de las prohibiciones consúltese: Base de datos de productos biocidas: http://www.msssi.gob.es/ciudadanos/productos.do?tipo=plaguicidas Base de datos de productos fitosanitarios http://www.magrama.gob.es/agricultura/pags/fitos/registro/fichas/pdf/Lista_s_a.pdf), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el "Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos" (REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarse a todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidas y especifica los usos que se han restringido).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Switzerland - Occupational Exposure Limits	
Local name	Acide borique / Borsäure
MAK (OEL TWA) [1]	1,8 mg/m ³ (i) / (e)
KZGW (OEL STEL)	1,8 mg/m ³ (i) / (e)
Notation	R _{1B} , S _S / R _{1B} , S _S
Remark	NIOSH
Regulatory reference	www.suva.ch, 01.01.2024
USA - ACGIH - Occupational Exposure Limits	
Local name	Boric acid
ACGIH OEL TWA	2 mg/m ³ (I - Inhalable particulate matter)
ACGIH OEL STEL	6 mg/m ³ (I - Inhalable particulate matter)
Remark (ACGIH)	TLV® Basis: URT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Potassium iodide (7681-11-0)	
Bulgaria - Occupational Exposure Limits	
Local name	Калиев йодид
OEL TWA	5 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Potassium nitrate (7757-79-1)	
Bulgaria - Occupational Exposure Limits	
Local name	Калиев нитрат
OEL TWA	5 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Latvia - Occupational Exposure Limits	
Local name	Kālija nitrāts
OEL TWA	5 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92)
Lithuania - Occupational Exposure Limits	
Local name	Kalio nitratas
IPRV (OEL TWA)	5 mg/m ³
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
copper sulphate (7758-98-7)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Copper(II) sulfate
IOEL TWA	0,01 mg/m ³ (respirable fraction)
Remark	(Year of adoption 2014)
Regulatory reference	SCOEL Recommendations
Finland - Occupational Exposure Limits	
Local name	Kupari-(II)-sulfaatti
HTP (OEL TWA) [1]	0,02 mg/m ³ Cu, alveolijae
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)
Calcium chloride (10043-52-4)	
Czech Republic - Occupational Exposure Limits	
Local name	Chlorid vápenatý
PEL (OEL TWA)	2 mg/m ³
NPK-P (OEL C)	4 mg/m ³
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Latvia - Occupational Exposure Limits	
Local name	Kalcija hlorīds
OEL TWA	2 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92)

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Sucrose (57-50-1)	
Belgium - Occupational Exposure Limits	
Local name	Saccharose # Sucrose
OEL TWA	10 mg/m ³
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Croatia - Occupational Exposure Limits	
Local name	Saharoza D (+)
GVI (OEL TWA) [1]	10 mg/m ³
KGVI (OEL STEL)	20 mg/m ³
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Estonia - Occupational Exposure Limits	
Local name	Sahharoos
OEL TWA	10 mg/m ³
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21.12.2022, 3)
France - Occupational Exposure Limits	
Local name	Saccharose
VME (OEL TWA)	10 mg/m ³
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 6443, 2022; Outil65)
Ireland - Occupational Exposure Limits	
Local name	Sucrose
OEL TWA [1]	10 mg/m ³
OEL STEL	20 mg/m ³
Regulatory reference	Chemical Agents Code of Practice 2021
Lithuania - Occupational Exposure Limits	
Local name	Sacharolis
IPRV (OEL TWA)	10 mg/m ³
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Portugal - Occupational Exposure Limits	
Local name	Sacarose
OEL TWA	10 mg/m ³
Remark	A4 (Agente não classificável como carcinogénico no Homem)
Regulatory reference	Norma Portuguesa NP 1796:2014
Spain - Occupational Exposure Limits	
Local name	Sacarosa
VLA-ED (OEL TWA) [1]	10 mg/m ³

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	Sucrose
WEL TWA (OEL TWA) [1]	10 mg/m ³
WEL STEL (OEL STEL)	20 mg/m ³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
USA - ACGIH - Occupational Exposure Limits	
Local name	Sucrose
ACGIH OEL TWA	10 mg/m ³
Remark (ACGIH)	TLV® Basis: Dental erosion. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection			
Type	Field of application	Characteristics	Standard
Safety glasses	Dust		EN 166

8.2.2.2. Skin protection

Skin and body protection:

In case of possible repeated skin contact wear protective clothing

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,11		EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection			
Device	Filter type	Condition	Standard
Dust mask	Type P1	Dust protection	EN 143

8.2.2.4. Thermal hazards

No additional information available

8.2.3. 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	: Solid
Colour	: White to slightly yellow.
Appearance	: Powder.
Odour	: Characteristic. Weak.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not applicable
Boiling point	: Not available
Flammability	: Non flammable.
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Readily soluble in water.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions of storage, handling and use.

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

Moisture.

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Thermal decomposition generates : - COx. - NOx. - SOx. - Phosphorus oxides.

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

Aluminium chloride hexahydrate (7784-13-6)	
LD50 oral	3311 mg/kg rabbit
Manganese sulphate monohydrate (10034-96-5)	
LD50 oral rat	2150 mg/kg
LD50 oral	2330 mg/kg (mouse)
LC50 Inhalation - Rat	> 4,45 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EU Method B.2 (Acute Toxicity (Inhalation))
Boric acid (10043-35-3)	
LD50 oral rat	> 2600 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Guideline: EU Method B.1 (Acute Toxicity (Oral))
LD50 oral	3450 mg/kg (mouse)
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: other:
LC50 Inhalation - Rat	> 2,12 mg/l/4h Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: other:
Zinc sulphate heptahydrate (7446-20-0)	
LD50 oral rat	1260 mg/kg Source: GESTIS
Potassium iodide (7681-11-0)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Potassium nitrate (7757-79-1)	
LD50 oral rat	> 2000 mg/kg OECD 425
LD50 oral	> 2000 mg/kg bodyweight Animal:
LD50 dermal rat	> 5000 mg/kg OECD 402
LC50 Inhalation - Rat	> 0,527 mg/l/4h OECD 403
copper sulphate (7758-98-7)	
LD50 oral rat	481 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OTS 798.1100 (Acute Dermal Toxicity), Guideline: other:
Nickel (II) chloride (7718-54-9)	
LD50 oral rat	500 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure), 95% CL: 397 - 642
Potassium dihydrogenphosphate (7778-77-0)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
LC50 Inhalation - Rat	> 0,83 mg/l air Animal: rat, Guideline: EPA OPP 81-3 (Acute inhalation toxicity), Guideline: other:, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EU Method B.2 (Acute Toxicity (Inhalation)), Guideline: other:
Magnesium sulphate anhydrous (7487-88-9)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity), Guideline: other:
Nicotinic Acid (59-67-6)	
LD50 oral rat	7000 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 3,8 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)
Pyridoxine hydrochloride (58-56-0)	
LD50 oral rat	> 6600 mg/kg
LD50 oral	> 6000 mg/kg LD50 oral mouse
Myo-Inositol (87-89-8)	
LD50 oral rat	19483,68 mg/kg bodyweight Animal: rat
LD50 oral	> 10000 mg/kg (mouse)

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Thiamine hydrochloride (67-03-8)	
LD50 oral rat	12340 mg/kg bodyweight Animal: rat, 95% CL: 10340 - 14340
LD50 oral	13347 mg/kg bodyweight Animal: mouse, 95% CL: 11527 - 15167
D(+)-Biotin (58-85-5)	
LD50 oral rat	> 2000 mg/kg
D-Pantothenate calcium (137-08-6)	
LD50 oral rat	10000 mg/kg
Calcium chloride (10043-52-4)	
LD50 oral	2120 mg/kg bodyweight Animal: rat
LD50 dermal rabbit	> 5000 mg/kg bodyweight Animal: rabbit
MES monohydrate (145224-94-8)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 tris (Acute Oral Toxicity - Acute Toxic Class Method), Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity)
Ammonium nitrate (6484-52-2)	
LD50 oral rat	> 2950 (\leq) mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 Inhalation - Rat	> 88,8 mg/l
Sucrose (57-50-1)	
LD50 oral rat	> 29700 mg/kg
Skin corrosion/irritation : Not classified	
Manganese sulphate monohydrate (10034-96-5)	
pH	3 - 4 (50 g/l, 20°C)
Boric acid (10043-35-3)	
pH	5,1
Zinc sulphate heptahydrate (7446-20-0)	
pH	4 - 6 (20°C)(50 g/l)
Potassium iodide (7681-11-0)	
pH	7 - 9 (50 g/l, 20 °C)
Potassium nitrate (7757-79-1)	
pH	0 (5 - 7,5) (50 g/l at 20 °C)
Potassium dihydrogenphosphate (7778-77-0)	
pH	≈ 4,4 (50 g/l, 20 °C)
Nicotinic Acid (59-67-6)	
pH	2,7 (18 g/l, 20 °C)

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Pyridoxine hydrochloride (58-56-0)	
pH	2,4 – 3
Thiamine hydrochloride (67-03-8)	
pH	2,7 – 3,3
D-Pantothenate calcium (137-08-6)	
pH	6,8 – 8
Calcium chloride (10043-52-4)	
pH	≥ 8 – ≤ 10
MES monohydrate (145224-94-8)	
pH	2,5 – 4
Ammonium nitrate (6484-52-2)	
pH	5 – 6,5
Sucrose (57-50-1)	
pH	5,5 – 7 (342 g/l, 20 °C)
Serious eye damage/irritation : Causes serious eye irritation.	
Manganese sulphate monohydrate (10034-96-5)	
pH	3 – 4 (50 g/l, 20°C)
Boric acid (10043-35-3)	
pH	5,1
Zinc sulphate heptahydrate (7446-20-0)	
pH	4 – 6 (20°C)(50 g/l)
Potassium iodide (7681-11-0)	
pH	7 – 9 (50 g/l, 20 °C)
Potassium nitrate (7757-79-1)	
pH	0 (5 – 7,5) (50 g/l at 20 °C)
Potassium dihydrogenphosphate (7778-77-0)	
pH	≈ 4,4 (50 g/l, 20 °C)
Nicotinic Acid (59-67-6)	
pH	2,7 (18 g/l, 20 °C)
Pyridoxine hydrochloride (58-56-0)	
pH	2,4 – 3
Thiamine hydrochloride (67-03-8)	
pH	2,7 – 3,3
D-Pantothenate calcium (137-08-6)	
pH	6,8 – 8

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Calcium chloride (10043-52-4)	
pH	≥ 8 – ≤ 10
MES monohydrate (145224-94-8)	
pH	2,5 – 4
Ammonium nitrate (6484-52-2)	
pH	5 – 6,5
Sucrose (57-50-1)	
pH	5,5 – 7 (342 g/l, 20 °C)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Pyridoxine hydrochloride (58-56-0)	
LOAEL (animal/male, F0/P)	125 mg/kg bodyweight
STOT-single exposure	: Not classified
Ammonium nitrate (6484-52-2)	
LOAEL (dermal, rat/rabbit)	≥ mg/kg bodyweight
STOT-repeated exposure	: Not classified
Manganese sulphate monohydrate (10034-96-5)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Potassium iodide (7681-11-0)	
LOAEL (oral, rat, 90 days)	0,55 mg/kg bodyweight Animal: rat, Guideline: other:
STOT-repeated exposure	Causes damage to organs (thyroid gland) through prolonged or repeated exposure (oral).
Potassium nitrate (7757-79-1)	
NOAEL (oral, rat, 90 days)	≥ 1500 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Nickel (II) chloride (7718-54-9)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Potassium dihydrogenphosphate (7778-77-0)	
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Nicotinic Acid (59-67-6)	
LOAEL (oral, rat, 90 days)	0 mg/kg bodyweight/day
NOAEL (oral, rat, 90 days)	50 mg/kg bodyweight Animal: rat, Guideline: EU Method B.7 (Repeated Dose (28 Days) Toxicity (Oral)), Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)
NOAEL (subacute, oral, animal/male, 28 days)	50 mg/kg bodyweight

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Nicotinic Acid (59-67-6)	
NOAEL (subacute, oral, animal/female, 28 days)	50 mg/kg bodyweight
Thiamine hydrochloride (67-03-8)	
NOAEL (oral, rat, 90 days)	≥ 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:
Ammonium nitrate (6484-52-2)	
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	≥ 0,185 mg/l air Animal: rat, Animal sex: male
NOAEL (subchronic, oral, animal/male, 90 days)	256 mg/kg bodyweight Animal: , Animal sex: male
NOAEL (subchronic, oral, animal/female, 90 days)	284 mg/kg bodyweight Animal: , Animal sex: female

Aspiration hazard : Not classified

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)	
Viscosity, kinematic	Not applicable
Boric acid (10043-35-3)	
Viscosity, kinematic	Not applicable
MES monohydrate (145224-94-8)	
Viscosity, kinematic	Not applicable

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance/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 %

11.2.2. Other information

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

Aluminium chloride hexahydrate (7784-13-6)	
LC50 - Fish [1]	27,1 mg/l
EC50 - Crustacea [1]	27,3 mg/l Daphnia Magna

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Manganese sulphate monohydrate (10034-96-5)	
LC50 - Fish [1]	30,6 mg/l (Pimephales promelas)
EC50 - Crustacea [1]	8,3 mg/l
EC50 72h - Algae [1]	61 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Boric acid (10043-35-3)	
LC50 - Fish [1]	79,7 mg/l Test organisms (species): Pimephales promelas
LC50 - Fish [2]	74 mg/l Test organisms (species): Limanda limanda
EC50 - Crustacea [1]	133 mg/l
EC50 72h - Algae [1]	66 mg/l Test organisms (species): Phaeodactylum tricornutum
EC50 72h - Algae [2]	54 mg/l Test organisms (species): Phaeodactylum tricornutum
NOEC chronic fish	6,4 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) Duration: '34 d'
Zinc sulphate heptahydrate (7446-20-0)	
EC50 - Crustacea [1]	12 mg/l
EC50 72h - Algae [1]	0,05 – 65 mg/l Source: GESTIS
Potassium iodide (7681-11-0)	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	2900 mg/l
NOEC (chronic)	29,87 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	66,356 mg/l Test organisms (species): other: Duration: '28 d'
Potassium nitrate (7757-79-1)	
LC50 - Fish [1]	> 98,9 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 - Crustacea [1]	490 mg/l EC50 48h - Daphnia magna [mg/l]
Potassium dihydrogenphosphate (7778-77-0)	
LC50 - Fish [1]	> 100 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 - Crustacea [1]	> 100 mg/l EC50 48h - Daphnia magna [mg/l]
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Magnesium sulphate anhydrous (7487-88-9)	
LC50 - Fish [1]	680 mg/l Test organisms (species): Pimephales promelas
Nicotinic Acid (59-67-6)	
LC50 - Fish [1]	520 mg/l Test organisms (species): Salmo trutta
EC50 - Crustacea [1]	77 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	89,933 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Nicotinic Acid (59-67-6)	
EC50 72h - Algae [2]	105,666 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 96h - Algae [1]	67,956 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 96h - Algae [2]	114,786 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Pyridoxine hydrochloride (58-56-0)	
LC50 - Fish [1]	> 100 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 - Crustacea [1]	> 100 mg/l EC50 48h - Daphnia magna [mg/l]
EC50 72h - Algae [1]	72 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Myo-Inositol (87-89-8)	
LC50 - Fish [1]	5424,33 mg/l Test organisms (species): Pimephales promelas
EC50 72h - Algae [1]	> 36600 mg/l Test organisms (species): other:
Thiamine hydrochloride (67-03-8)	
LC50 - Fish [1]	> 100 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
D-Pantothenate calcium (137-08-6)	
LC50 - Fish [1]	2860000000 mg/l Source: QSAR
EC50 96h - Algae [1]	757000000 mg/l Source: QSAR
Calcium chloride (10043-52-4)	
LC50 - Fish [1]	4630 mg/l Test organisms (species): Pimephales promelas
LOEC (chronic)	240 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	481 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	230 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '25 d'
MES monohydrate (145224-94-8)	
LC50 - Fish [1]	> 108 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 108 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 108 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
Ammonium nitrate (6484-52-2)	
LC50 - Fish [1]	447 mg/l Cyprinus carpio (Common carp)
EC50 - Crustacea [1]	490 mg/l EC50 48h - Daphnia magna [mg/l]
EC50 - Other aquatic organisms [1]	490 mg/l Test organisms (species):

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Ammonium nitrate (6484-52-2)	
ErC50 algae	> 1700 mg/l 10 days
NOEC (chronic)	555 mg/l 7 days, (<i>Bullia digitalis</i>)

12.2. Persistence and degradability

Aluminium chloride hexahydrate (7784-13-6)	
Persistence and degradability	Product is biodegradable.

Nicotinic Acid (59-67-6)	
Persistence and degradability	Product is biodegradable.
BOD (% of ThOD)	100 % ThOD
Biodegradation	100 %

Pyridoxine hydrochloride (58-56-0)	
Biodegradation	94 % (28 d, OECD 301E)

Thiamine hydrochloride (67-03-8)	
Persistence and degradability	Product is biodegradable.
Biodegradation	74 % (7d)

D(+)-Biotin (58-85-5)	
Persistence and degradability	Minimally biodegradable.

D-Pantothenate calcium (137-08-6)	
Biodegradation	99 % 28d

Ammonium nitrate (6484-52-2)	
Persistence and degradability	Not established.

Sucrose (57-50-1)	
Persistence and degradability	Product is biodegradable.

12.3. Bioaccumulative potential

Boric acid (10043-35-3)	
Partition coefficient n-octanol/water (Log Pow)	0,18

Nicotinic Acid (59-67-6)	
Partition coefficient n-octanol/water (Log Pow)	-2,43 (25 °C, OECD Test 107)
Bioaccumulative potential	No bioaccumulation.

Pyridoxine hydrochloride (58-56-0)	
Partition coefficient n-octanol/water (Log Pow)	-0,7 20 °C , pH 7

Thiamine hydrochloride (67-03-8)	
Partition coefficient n-octanol/water (Log Pow)	< -3,04 22,5 °C

D-Pantothenate calcium (137-08-6)	
Partition coefficient n-octanol/water (Log Pow)	-5,35

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Calcium chloride (10043-52-4)

Partition coefficient n-octanol/water (Log Pow) 0,0500006

Ammonium nitrate (6484-52-2)

Bioaccumulative potential Not established.

Sucrose (57-50-1)

Bioaccumulative potential Bioaccumulation unlikely.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component

Boric acid (10043-35-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The substance/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 %.

12.7. Other adverse effects

Additional information : Prevent entry to sewers and public waters. Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment. Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

ADR	IMDG	IATA
14.1. UN number or ID number		
Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name		
Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)		
Not regulated	Not regulated	Not regulated

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ADR	IMDG	IATA
14.4. Packing group		
Not regulated	Not regulated	Not regulated
14.5. Environmental hazards		
Not regulated	Not regulated	Not regulated
No supplementary information available		

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

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

15.1.1. 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 substance(s) listed on the REACH Candidate List in concentrations $\geq 0.1\%$ or SCL: Boric acid (EC 233-139-2, CAS 10043-35-3)

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)

Explosives Precursors Regulation (2019/1148)

Contains substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

ANNEX I RESTRICTED EXPLOSIVES PRECURSORS

List of substances which are not to be made available to, or introduced, possessed or used by, members of the general public, whether on their own or in mixtures or substances that include those substances, unless the concentration is equal to or lower than the limit values set out in column 2, and for which suspicious transactions and significant disappearances and thefts are to be reported within 24 hours.

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Name	CAS-No.	Limit value	Upper limit value for licensing under Article 5(3)	Combined Nomenclature (CN) code for a separate chemically defined compound meeting the requirements of Note 1 to Chapter 28 or 29 of the CN, respectively	Combined Nomenclature code for mixture without constituents which would determine classification under another CN code
Ammonium nitrate	6484-52-2	45,7 % w/w	No licensing permitted	3102 30 10 (in aqueous solution); 3102 30 90 (other)	ex 3824 99 96

ANNEX II REPORTABLE EXPLOSIVES PRECURSORS

List of substances on their own or in mixtures or in substances for which suspicious transactions and significant disappearances and thefts are to be reported within 24 hours.

Name	CAS-No.	Combined Nomenclature code (CN)	Combined Nomenclature code for mixture without constituents which would determine classification under another CN code
Potassium nitrate	7757-79-1	2834 21 00	ex 3824 99 96

Please see https://home-affairs.ec.europa.eu/policies/internal-security/counter-terrorism-and-radicalisation/protection/legislation-chemicals-used-home-made-explosives_en

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)

15.1.2. National regulations

Ensure all national/local regulations are observed.

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV, Annex 1).
Hazardous Incident Ordinance (12. BImSchV) : Is not subject to the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : Manganese sulphate monohydrate, Nickel (II) chloride are listed
SZW-lijst van mutagene stoffen : Manganese sulphate monohydrate is listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : Nickel (II) chloride is listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : Boric acid, Nickel (II) chloride are listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : Boric acid, copper sulphate, Nickel (II) chloride are listed

Denmark

Danish National Regulations : 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

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Issue date	Modified	
	Revision date	Added	
	Supersedes	Added	
	Flammability	Added	
	Adverse health effects caused by endocrine disrupting properties	Added	
	Regulatory framework	Added	
	Reference number	Modified	
1.1	Product group	Modified	
1.1	Trade name	Modified	
1.1	Name	Modified	
1.1	Product code	Modified	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.1	Adverse physicochemical, human health and environmental effects	Added	
2.2	Precautionary statements (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
3	Composition/information on ingredients	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after inhalation	Modified	
4.1	First-aid measures after ingestion	Modified	
4.1	First-aid measures after eye contact	Modified	
4.2	Symptoms/effects after eye contact	Modified	
4.3	Other medical advice or treatment	Added	
5.2	Hazardous decomposition products in case of fire	Modified	
5.3	Protection during firefighting	Modified	
6.1	Protective equipment	Added	
6.1	Emergency procedures	Modified	
6.2	Environmental precautions	Modified	
6.3	Other information	Added	
6.3	Methods for cleaning up	Modified	
6.4	Reference to other sections (8, 13)	Added	
7.1	Hygiene measures	Added	

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Indication of changes			
Section	Changed item	Change	Comments
7.1	Precautions for safe handling	Modified	
7.2	Storage conditions	Modified	
8.2	Environmental exposure controls	Added	
8.2	Appropriate engineering controls	Added	
9.1	Viscosity, kinematic	Added	
9.1	Freezing point	Added	
9.1	Flash point	Added	
9.1	Explosive limits (vol %)	Added	
9.1	Auto-ignition temperature	Added	
10.3	Possibility of hazardous reactions	Added	
12.1	Ecology - general	Added	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
13.1	Waste treatment methods	Modified	
15.2	Chemical safety assessment	Added	
16	Other information	Added	
16	Data sources	Modified	
16	Abbreviations and acronyms	Modified	

Abbreviations and acronyms:	
ATE	Acute Toxicity Estimate
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
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
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
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
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
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 disrupting properties

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. TNO (Netherlands Organisation for Applied Scientific Research). ECHA (European Chemicals Agency). Supplier's safety documents.

Other information : DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.

Full text of H- and EUH-statements:	
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-statements:	
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Carc. 1A	Carcinogenicity (inhalation) Category 1A
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H272	May intensify fire; oxidiser.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
Muta. 2	Germ cell mutagenicity, Category 2
Ox. Sol. 2	Oxidising Solids, Category 2
Ox. Sol. 3	Oxidising Solids, Category 3
Repr. 1B	Reproductive toxicity, Category 1B
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

Safety Data Sheet (SDS), EU Duchefa 2023

S-Medium (Micro and Macro elements incl. vitamins, buffer and organics)

S0261

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

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.