University of Reading

Unicellular algae medium

Safety data sheet

Prepared in accordance with Regulation (EC) No. 1907/2006 (REACH)

Version 1.0 | Created: 6 May 2016 | Revised: Not applicable

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

Product name and description	Unicellular algae medium
Trade name/Brand	*Sciento* product code K10
Synonyms	Enrichment medium
REACH Number	Not applicable, mixture
CAS Number	Not applicable, mixture
EC Number	Not applicable, mixture
Recommended use	This product is a laboratory preparation for educational use only. It should be used in accordance with the instructions in the NCBE-SAPS *Investigating photosynthesis kit* (See Section 16).
Uses advised against	None found
Supplier of the product and of this safety data sheet	National Centre for Biotechnology Education (NCBE) University of Reading 2 Earley Gate Whiteknights READING RG6 6AU United Kingdom T: 0118 9873743 F: 0118 9750140 E: NCBE@reading.ac.uk W: www.ncbe.reading.ac.uk
Manufacturer of the product	Sciento 61 Bury Old Road Whitefield MANCHESTER M45 6TB United Kingdom T: 0161 773 6338 F: 0161 773 6338 E: sales@sciento.co.uk W: www.sciento.co.uk
Emergency telephone number	0118 9873743 (NCBE, University of Reading. 08.30 to 17.00 weekdays only)

SECTION 2. Hazards identification

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

Oxidizing solids (Cat. 3), H272
Eye irritation (Cat. 2), H319
Acute toxicity (Cat. 4), H302, H312, H332

Label elements

WARNING

H272	May intensify fire; oxidiser
H302	Harmful if swallowed
H312	Harmful in contact with skin
H319	Causes serious eye irritation
H332	Harmful if inhaled
P220	Keep/Store away from clothing/combustible materials
P261	Avoid breathing dust
P305+P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other hazards

None.

Note: Some statements are omitted from the product label, as the volume of the mixture is less than 125 ml.

SECTION 3. Composition/information on ingredients

Name of component (Synonym) [CLP index number]	Weight* (%)	EC (EINECS) number	CAS number	REACH registration number	Classification under Regulation (EC) No 1272/2008 [CLP]**
Sodium nitrate	62	231-554-3	7631-99-4	–	Ox. Sol. 3 (H272) Eye Irrit. 2 (H319)
Magnesium sulfate (Magnesium sulphate) [Not indexed under CLP yet]	16	231-298-2	7487-88-9	–	Acute Tox. 4 (H302, H312, H332)
Dipotassium hydrogen-orthophosphate (Dipotassium phosphate) [Not indexed under CLP yet]	15	231-834-5	7758-11-4	–	–
Calcium chloride [017-013-00-2]	4	233-140-8	10043-52-2	–	Eye Irrit. 2 (H319)
Ammonium chloride [017-014-00-8]	3	235-186-4	12125-02-9	–	Acute Tox. 4 (H302) Eye Irrit. 2 (H319)
Trace elements	<1	–	–	–	–

** These values refer to the percentage by weight (actually mass) of each component in the mixture, and should not be regarded as a 'recipe' for making up the medium.*

*** As required by the relevant EU Directive, these hazard classifications refer to the pure (100%) substances, and to the dried medium supplied. Once diluted in water as directed, the medium does not present a hazard.*

For the full text of the safety classifications (H statements), refer to Section 16.

SECTION 4. First aid measures

General information	Seek medical attention if an ill effect develops. Show this safety data sheet to the doctor.
Inhalation	Move the casualty to fresh air. If the casualty is not breathing, give artificial respiration. Consult a doctor.
Skin contact	Wash skin with plenty of water and mild soap. Seek medical attention if irritation occurs.
Eye contact	Check for and remove contact lenses if present. Rinse opened eye immediately with running water, also wash under the eyelids, for at least 15 minutes. Seek medical advice immediately.
Ingestion	Rinse out mouth with water, then drink plenty of water. Do not induce vomiting. Seek medical help immediately.
Self-protection of the first aider	Rinse your hands with water after handling the powder.
Most important symptoms and effects, both acute and delayed	Causes serious eye irritation. Harmful in contact with the skin. Harmful if inhaled.
Indication of any immediate medical attention and special treatment	IF IN EYES: Rinse thoroughly with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical advice and show this Safety Data Sheet to the doctor.
Advice to doctor	No additional information available.

SECTION 5. Firefighting measures

Extinguishing media
Water spray, carbon dioxide, foam or dry powder.

Special hazards arising from the substance or mixture
Nitrogen oxides (NOx); Sodium oxides; Sulphur oxides; Magnesium oxides, Hydrogen chloride gas, Calcium oxide.

Advice for firefighters
Wear protective equipment and self-contained breathing apparatus if the quantity of the substance involved warrants it.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes. Wear a lab coat and eye protection. Ensure adequate ventilation when handling the powder, but avoid raising an airborne dust. If necessary wear protective gloves and a face mask.

In an emergency, evacuate personnel to safe areas. Avoid breathing the dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let the product enter drains. Discharge into the environment must be avoided.

Methods and material for containment and cleaning up
Wear a face mask, eye protection, a lab coat and gloves. Sweep up the dry powder with a dustpan and brush. Wash the surface with water and dry with paper towels. Dispose of the waste as described in Section 13.

Reference to other sections
See Section 13 for disposal instructions. See Section 8 for personal protection details.

SECTION 7. Handling and storage

Precautions for safe handling
Avoid raising or inhaling any airborne dust. Keep away from sources of heat and ignition. No smoking.

Conditions for safe storage, including any incompatibilities
Store in dry conditions at room temperature. Do not expose to temperatures above 50 °C. The powder is hygroscopic. Dispose of the powder if it has absorbed moisture and become darker and/or formed a solid lump.

Specific end use(s)
This is a growth medium for unicellular algae, to be used diluted with water according to the instructions in the *NCBE-SAPS photosynthesis kit*.

SECTION 8. Exposure controls/personal protection

Control parameters

Exposure limits
Components with workspace control parameters

Component	CAS Number	Workplace exposure limit		Legal basis
Ammonium chloride	12125-02-9	Long term exposure limit (8 hour time-weighted average reference period)	10 mg/m^3	UK. EH40 WEL
		Short-term exposure limit (15 minute reference period)	20 mg/m^3	

Biological limit values No information available.
Derived no effect level No information available.
Predicated no effect level No information available.

Exposure controls
Handle in accordance with good laboratory hygiene and safety practice. Wash hands before breaks and after handling the mixture. Wear safety glasses with side shields. Handle with gloves.

SECTION 9. Physical and chemical properties

Physical state Powder.
Appearance Off white powder.
Odour Odourless.
pH Not applicable.
Flash point Does not flash.
Solubility Highly soluble in water.

SECTION 10. Stability and reactivity

Reactivity No information available.
Chemical stability When stored dry and at room temperature, the product is stable.
Possibility of hazardous reactions No known hazardous reactions.
Conditions to avoid Fusion of mixtures of metal cyanides, including lead thiocyanate, with metal chlorates, perchlorates, nitrates or nitrites causes a violent explosion. Addition of one solid component (even as a residue in small amount) to another molten component is also highly dangerous. Avoid heat. Avoid strong oxidising agents.
Incompatible materials Strong acids, Strong bases, Strong reducing agents, Powdered metals, Organic materials, Alkali metals, Alkaline earth metals, Cyanides, Thiocyanates, Borane/ Boron oxides, Zinc, Calcium oxide, Methyl vinyl ether.
Hazardous decomposition products In the event of a fire: See Section 5.

SECTION 11. Toxicological information

SODIUM NITRATE

Acute toxicity	LD50 Oral (Rat) 3,430 mg/kg LD50 Dermal (Rat) > 5,000 mg/kg LD50 Intravenous (Mouse) 175 mg/kg Serious eye damage/eye irritation (Rabbit)
Chronic toxicity	No information available.
Germ cell mutagenicity	Human HeLa cell: Unscheduled DNA synthesis.
Carcinogenicity	Carcinogenicity - Rat - Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumours. Tumorigenic Effects: Testicular tumours. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity	Mouse - male - Oral Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility and count).
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Additional Information	RTECS: WC5600000. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

MAGNESIUM SULFATE

Acute toxicity	LD50 Oral (Rat) >2,000 mg/kg LD50 Inhalation (Rabbit) > 2,000 mg/l LD50 Intraperitoneal (Mouse) 1,029 mg/kg
Chronic toxicity	No information available.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity	No information available
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Additional Information	RTECS: OM4500000. Diarrhoea, Vomiting, Central nervous system depression.

CALCIUM CHLORIDE

Acute toxicity	LD50 Oral (Rat) 2,301 mg/kg Moderate eye irritation (Rabbit)
Chronic toxicity	No information available.
Germ cell mutagenicity	Rat. Unscheduled DNA synthesis.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity	No information available
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Additional Information	RTECS: EV9800000.

AMMONIUM CHLORIDE

Acute toxicity	LD50 Oral (Rat) 1,650 mg/kg Eye irritation (Rabbit)
Chronic toxicity	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity	No information available
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Additional Information	RTECS: BP45500000.

SECTION 12. Ecological information

Toxicity (Sodium nitrate)	LC50 *Gambusia affinis* 6,650 mg/l : 96 h EC50 *Daphnia magna* and other aquatic invertebrates 6,000 mg/l : 24 h
Toxicity (Magnesium sulfate)	LC50 *Pimiphales promalas* 2,820 mg/l : 96 h EC50 *Daphnia magna* and other aquatic invertebrates 343.56 mg/l : 48 h EC50 *Desmodesmus subspicatus* 2,700 mg/l : 72 h
Toxicity (Calcium chloride)	LC50 *Lepomis macrochirus* 10,650 mg/l : 96 h EC50 *Daphnia magna* and other aquatic invertebrates 2,400 mg/l : 48 h
Toxicity (Ammonium chloride)	LC50 *Cyprinus carpio* 209 mg/l : 96 h LC50 *Oncorhynchus mykiss* 3.98 mg/l : 96 h NOEC *Oncorhynchus mykiss* 57 mg/l : 96 h EC50 *Daphnia magna* and other aquatic invertebrates 161 mg/l : 48 h
Persistence and degradability	No information available.
Bioaccumulative potential	No information available.
Mobility in soil	No information available.
Results of PBT and vPVB assessment	This mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	Toxic to aquatic life.

SECTION 13. Disposal considerations

Waste from residues/unused product	Wash down a foul water drain with plenty of water.
Contaminated packaging	Dispose of in normal waste according to local regulations.

SECTION 14. Transport information

SODIUM NITRATE	
UN number	ADR/RID; IMDG; IATA: 1498
UN proper shipping name	ADR/RID; IMDG; IATA: SODIUM NITRATE
Transport hazard class	ADR/RID; IMDG; IATA: 5.1
Packaging group	ADR/RID; IMDG; IATA: III
Environmental hazards	ADR/RID; IMDG; IATA: No
Special precautions for user	No information available
Other components of the mixture	
UN number	Not applicable.
UN proper shipping name	Not applicable.
Transport hazard class	Not applicable.
Packaging group	Not applicable.
Environmental hazards	Not applicable.
Special precautions for user	Not applicable.

SECTION 15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
No information available.

Chemical Safety Assessment
No information available.

SECTION 16. Other information

Full text of GHS hazard statements

H272 May intensify fire; oxidiser
H302 Harmful if swallowed
H312 Harmful in contact with skin
H319 Causes serious eye irritation
H332 Harmful if inhaled

Refer to the Teacher's guide which accompanies the NCBE-SAPS *Investigating photsynthesis kit*. This can be downloaded from the NCBE's Web site: **www.ncbe.reading.ac.uk**

The information given in this Safety Data Sheet is based on the present state of our knowledge.

This Safety Data Sheet has been compiled and is solely intended for this product.

END OF SAFETY DATA SHEET