



MATERIAL SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 and No. 1272/2008

Version #1 of 25/01/2015

GENERIC EU MSDS – NO COUNTRY SPECIFIC DATA

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

1.1 Product identifiers

Product name	BIO-PROTAN® Microvega
Product number	1125
Brand of	Protan AG
REACH no.	A registration number is not available for this substance as the substance or its uses are exempt from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses:	Industrial manufacturing (all) [SU3]. Agriculture, forestry, fishery [SU1]
Uses advised against:	Do not use for purposes other than those listed

1.3 Details of the supplier of the safety data sheet

Company	Protan Aktiengesellschaft, Runkelstrasse 38, LI-9495 Triesen
Phone	+423 375 15 25
Fax	+423 375 15 26
Email address	info@protan.li

1.4 Emergency telephone number

Protan AG	+423 375 15 25 (working hours)
Poison emergency call (24h)	+41 (0)44 251 51 51 (Centre Suisse d'Information Toxicologique), From Switzerland call tel. 145 +49 (0)30 19240 (Gift-Notruf Berlin, language EN and DE)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product is classified as hazardous according to the provisions of Regulation (EC) 1272/2008 (CLP/GHS) and subsequent amendments. The product requires a safety data sheet in compliance with the provisions of Regulation (EC) 1907/2006 and subsequent amendments.


Further information on the risks to health and/or the environment are available in sections 11 and 12 of this Material Safety Data sheet.

2.1.1. Regulation 1272/2008/EC (CLP) and subsequent amendments

Classification and hazard indication	Eye Dam. 1	H318
Refer to paragraph 16 for full text of risk phrases and hazard statements	Aquatic Chronic 2	H411

2.2 Label elements

Labelling in accordance with Regulation 1272/2008/EC (CLP) and subsequent amendments:

Hazard pictogram(s):		
Signal word:	Danger	
Hazard statement(s):	H318	Causes serious eye damage
Physical Hazards (H2XX)	H411	Toxic to aquatic life with long lasting effects
Health Hazards (H3XX)		
Environmental Hazards (H4XX)		
Precautionary statement(s):	P202	Do not handle until all safety precautions have



	P280	been read and understood. Wear protective gloves/protective clothing/ eye protection/ face protection
	P308+P313	IF exposed or concerned: Get medical advice/attention.
	P310	Immediately call a POISON CENTER or doctor/physician.
	P273	Avoid release to the environment.
	P501	Dispose of contents/container in accordance with regional regulations.

2.3 Other hazards

PBT/ vPvB criteria:	Assessment on PBT (persistent, bio accumulative and toxic substances) or vPvB (very persistent and very bio accumulative substances) has not been conducted according to Annex XIII of Regulation (EC) 1907/2006.
Other hazards:	None known

SECTION 3: Composition/Information on ingredients

3.1 Substances

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3.2 Mixture

Natural polymer (amino acids and peptides) modified by chemical hydrolysis and mixed with boron ethanolamine, iron sulphate, magnesium sulphate, zinc sulphate, manganese sulphate, diammonium molybdate.

Type of formulation: liquid fertilizer, soluble in water

Chemical name	CAS no.	EC no.	Index no.	Classification (Reg. EC 1272/2008)	Content (%w/w)
Iron (II) Sulphate Heptahydrate	7782-63-0	231-753-5	026-003-01-4	GHS07: Acute tox.4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	≤ 5,5%
Zinc Sulphate Heptahydrate	7732-18-5	231-793-3	030-006-00-9	GHS05: Acute tox.4, H302; GHS07: Eye Dam. 1, H318; GHS09: Aquatic Acute 1, H400; Aquatic Chronic 1, H410	≤ 4,6%
Boric Acid	10043-35-3	233-139-2	005-007-00-2	GHS08: Reprtox. 1B, H360FD	≤ 3,2%
Manganese (II) Sulphate Monohydrate	10034-96-5	232-089-9	025-003-00-4	GHS05: Eye Dam. 1, H318; GHS08: STOT RE 2, H373; GHS09: Aquatic Chronic 2, H411:	≤ 3,2%
Diammonium-Molybdate	27546-07-2	248-517-2	-	GHS07: Skin Irrit. 2, H315; Eye Irrit 2, H319; STOT SE 3A; H335	≤ 0,1%

Refer to paragraph 16 for full text of risk phrases and hazard statements

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	If feeling unwell after first aid measures, seek medical advice. Show this safety data sheet to the doctor in attendance
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In case of skin contact	Take off contaminated clothing. Wash off with soap and running water the areas of body that may have been exposed to the product. Wash contaminated clothing before reuse.
In case of eye contact	Rinse eyes thoroughly with running water, keeping eyelids open for min 10 minutes. Remove contact lenses. Seek medical advice.
If swallowed/Ingested	Rinse mouth with water. Seek medical advice if feeling unwell and/or swallowed in great quantity. Never give anything by mouth to an unconscious person.
If inhaled	If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Acute effect is eye irritation. The most important known symptoms and effects are described in section 2.2 (labelling) and section 11.

4.3 Indication of any immediate medical attention and special treatment needed

Treat according to symptoms.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable media	Use <u>water spray</u> , CO ₂ , alcohol resistant foam, dry chemical, depending on the materials involved in the fire.
Unsuitable media	None in particular. Use <u>water jets</u> only to cool the surfaces of the containers exposed.

5.2 Special hazards arising from the substance or mixture

No direct fire and explosion hazard. Product is not reactive and not flammable. Can emit toxic fumes if involved in a fire: carbon oxide and nitrous vapours, ammonia, sulphur oxides (SO_x), fumes with metal oxides (see section 10). Do not breathe-in combustion products.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and suitable protective clothing.

5.4 Further information

Dispose of contaminated fire extinction water and fire remains considering the classification of the product and according to applicable national/local regulations (see section 2.2).

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

General advice	Always ensure your own safety first. Use proper equipment as indicated in section 8.
For non-emergency personal	Follow safety precautions and act according to the rules of hygiene and good industrial practice.
For emergency responders	Wear gloves and protective clothing and avoid contact with eyes and skin. Provide sufficient ventilation and wear respiratory protection in case of vapour release. Evacuate the danger area. If necessary, consult an expert. In case of fire, wear respiratory protection and eliminate all unguarded flames and sources of ignition.



6.2 Environmental precautions

Contains Zinc Sulphate Heptahydrate and Manganese (II) Sulphate Monohydrate toxic to aquatic life with long lasting effects. Avoid release to the environment. Collect spillage as much as possible for re-use and limit the area of shedding. Do not let product enter drains, sewers, surface water, ground water. If the product has entered a watercourse in sewers or has contaminated soil or vegetation, notify it to the authorities. Dispose of contents/container in accordance with regional regulations.

6.3 Methods and material for containment and cleaning up

Recover the product for removal or re-use. Possibly absorb it with liquid-binding material (earth, sand, diatomite, acid binders, universal binders, sawdust). Keep in suitable, labelled and closed container for disposal in accordance with regulations.

6.4 Reference to other sections

For emergency contact info	see section 1
For personal protection	see section 8
For waste disposal	see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures/ precautions	Avoid contact with eyes, skin and clothing and avoid inhalation of vapours. When diluting, always stir the product into standing water. Keep containers tightly sealed. Do not store in open or unlabelled containers.
General occupation hygiene	Handle in accordance with good industrial hygiene practice and observing general safety regulations for handling chemicals: Do not eat, drink or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/ Storage conditions	Keep in original container closed tightly. Do not store in open or unlabelled containers. Normal storage conditions without particular incompatibilities. Keep containers upright and safe avoiding possibility of falls or collisions.
Storage compatibility	Store separately from food and animal feed.
Additional disclosures on stock conditions	Avoid thermal shock for the possibility of crystallization and product precipitation. Avoid storing at temperatures above 30 °C and below 5 °C for handling problems due to viscosity increase.
Storage class	Non combustible liquid.

7.3 Specific end use(s)

Fertilizer. No other specific uses are stipulated apart from the uses mentioned in section 1.2

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The product does not contain any relevant quantities of materials with critical value limits to monitor. Apply general workplace control parameters. No further information apart from section 7.

8.2 Exposure controls

Personal protective equipment:	Handle in accordance with good industrial hygiene practice and the usual
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precautionary measures for handling chemicals. We recommend to avoid contact with eyes. Avoid contact with skin to prevent possible irritation. Wear safety goggles and gloves. Choose body protection in relation to work exposure. Side shield goggles recommended where there is a risk of leaks or splashes.



- Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Side shield goggles recommended in case of splash exposure risk.
- Hand protection	Handle with gloves. Inspect gloves prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. For full and splash contact, we advise the use of "Nitrile Rubber Gloves (NBR)", minimum layer thickness of 0.11 mm. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
- Skin and body protection	Choose body protection in relation to work exposure to the concentration and amount of dangerous substances and to the specific work place. Wash with soap and water after removing protective clothing.
- Respiratory protection	Respiratory protection is not required.
Control of environmental exposure	Avoid pure product release in the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance, form	liquid	Vapour pressure	not determined
Appearance, colour	black	Vapour density	not determined
Odour	undefined	Relative density	1,18 – 1,20 kg/l
Odour threshold	not applicable	Water solubility(ies)	soluble
pH value at 20°C (1:10 solution)	4 - 5	Partition coefficient: n-octanol/water	not determined
Melting point	not determined	Auto-ignition temperature	not determined
Freezing point	- 2 °C		
Initial boiling point and boiling range	not determined	Decomposition temperature	not determined
Flash point	not applicable	Viscosity (dynamic at 20°C)	not determined
Evaporation rate	not applicable	Explosive properties	not determined
Flammability (solid, gas)	not self-igniting	Oxidising properties	not determined
Upper/lower flammability or explosive limits	not explosive	Vapour pressure	not determined

9.2 Other safety information

No further relevant information available.



SECTION 10: Stability and reactivity
10.1 Reactivity

No reactivity hazards.

10.2 Chemical stability

Stable under recommended storage conditions. No decomposition associated with the proposed use. The product contains no preservatives and is stable when stored undiluted in clean containers and if handled according to label directions. With decreasing shelf life, you may see a slight precipitate without altering product quality (see section 7, handling and storage).

10.3 Possibility of hazardous reactions

To our knowledge, the product does not present particular risk under normal conditions of use. For further information, refer to section 10.5.

10.4 Conditions to avoid

Avoid storage in open containers and with temperatures above 30°C and less than 10°C.

10.5 Incompatible materials

With strong oxidant agents like oxidants mineral acids, organic peroxides, organic water peroxides, elementary metals, exothermic reactions can occur. Avoid the mixture with strong acids. Apply cautiously in combination with copper, mineral oil based products and sulphur products.

10.6 Hazardous decomposition products

In the event of fire, refer to section 5.

SECTION 11: Toxicological information
11.1 Information on toxicological effects
Acute toxicity:

Quantitative and qualitative data on the toxicity of the product are not available. Based on information available for similar products the product can reasonably be classified as:

NON IRRITATING TO SKIN
 IRRITATING TO EYES
 TOXIC TO AQUATIC ORGANISMS

SECTION 12: Ecological information
12.1 Toxicity

The product is a fertilizer and does not cause adverse effects in the environment if handled according to the advised dosages and recommendations of use. Low concentrations discharged correctly into adapted biological sewage treatment plants do not interfere with degradation activity of activated sludge. Handle according to good industrial hygiene practice. Avoid dispersal in the environment. Inform competent authorities in case of contamination of waterways, sewers, soil or vegetation. Further data regarding the aquatic toxicity are not available.

12.2 Persistence and degradability

No data available

12.3 Bio accumulative potential

No data available.



12.4 Mobility in the soil

Prevent the penetration of concentrated product in the soil and the dispersion in surface waters without proper biological treatment of wastewater.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not carried out.

12.6 Other adverse effects

No data available.

SECTION 13: Disposal considerations
13.1 Waste treatment methods

Unused product	Recover if possible. Dispose of surplus and non-recyclable solutions by a licensed disposal company following the national and local regulations. Handle in accordance with good industrial hygiene practice and the usual precautionary measures for handling chemicals.
Contaminated packaging	Do not reuse empty containers. Dispose of as unused product. Do not remove label until container is thoroughly cleaned.

SECTION 14: Transport information
14.1 UN number

ADR/RID: 3082

IMDG: 3082

IATA: 3082

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, liquid, N.O.S. (manganese sulphate, zinc sulphate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, liquid, N.O.S. (manganese sulphate, zinc sulphate)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, liquid, N.O.S. (manganese sulphate, zinc sulphate)

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: yes

IMDG: Marine pollutant: yes

IATA: 9

14.6 Special precautions for users
Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packaging and combination packaging containing inner packaging with dangerous goods > 5L for liquids or > 5kg for solids.

SECTION 15: Regulatory information

Hazardous substance or mixture according to Regulation (EC) No. 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures).

BIO-PROTAN® Microvega is produced and marketed according to the following regulations:

Regulation (EC) No. 1069/2009 laying down health rules concerning animal by-products not intended for human



consumption and Regulation (EC) No. 889/2008 laying down detailed rules for the implementation of Regulation (EC) No. 834/2007 (Organic production and labelling of organic products with regard to organic production, labelling and controls).

This safety data sheet complies with the requirements of Article 31 of EC Regulation 1907/2006/EC (REACH regulation) and the information contained herein is displayed in the order prescribed in Annex II to that regulation as amended in the year 2010 (435/2010/EC).

The purpose of this safety data sheet is to facilitate the carrying out of a risk assessment. We remind employers of their duty to carry out such an assessment and subsequently to provide an appropriate working environment. It is the employer's duty to procure all necessary personal protective equipment and ensure that all workers handling the product use such equipment.

15.1 Safety, health, and environmental regulation specific for the substance or mixture

Restrictions in relation to the product or contained substances pursuant to Annex XVII to Regulation (CE) 1907/2006	None
Substances in candidate list (Art 59 REACH)	None
Substances subject to authorization (Annex XIV)	None
Sanitary control	Workers exposed to chemicals are subject to the control of health authorities following the national and local regulations.

15.2 Chemical safety assessment

No chemical safety assessment required or carried out by the supplier of the product.

SECTION 16: Other information

Changes since last issue	New release.
Safety data sheet contact person	Protan AG, Christian DOBERS, phone no. +423 375 15 25
General bibliography	Regulation (EC) 453/2010/EC of the European Parliament amending Regulation 1907/2006/EC (REACH) Regulation (EC) 1107/2009 (CLP) Regulation (EC) 790/2009 (I apt. CLP) Regulation (EC) 1272/2008 (CLP/GHS) Safety Data Sheets provided by suppliers of component substances.
Abbreviations and acronyms	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road RID: Regulations Concerning the International Transport of Dangerous Goods by Rail IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association ICAO: International Civil Aviation Organization GHS: Globally Harmonized System of Classification and Labelling of Chemicals RTECS: Registry of Toxic Effects of Chemical Substances REACH: Registration, Evaluation, and Authorisation of Chemicals CLP: Classification, Labelling and Packaging
Description of Hazard statements	Repr. 1B = Reproductive toxicity / cat. 1B



(H-phrases) set out in SECTION 2-3

STOT RE 2 = Specific Target Organ Toxicity / repeated exposure / cat. 2
 STOT SE 3A = Specific Target Organ Toxicity / single exposure / cat. 3A
 Acute tox.4 = Acute Toxicity, category 4
 Aquatic acute 1 = Hazardous to the aquatic environment / acute / cat. 1
 Aquatic chronic 1 = Hazardous to the aquatic environment / chronic / cat. 1
 Aquatic chronic 2 = Hazardous to the aquatic environment / chronic / cat. 2
 Eye Dam. 1 = Eye damage, cat. 1
 Eye Irrit. 2 = Eye irritation, cat. 2
 Skin Irrit. 2 = Skin Irritation, cat. 2



GHS05: For substances and mixtures, which are corrosive to metals, corrosive to skin and damage eyes severely



GHS07: Acute toxicity (oral, dermal, inhalation)



GHS08: Health hazard



GHS09: Environmental Hazard

H302 = Harmful if swallowed
 H315 = Causes skin irritation
 H318 = Causes serious eye damage
 H319 = Causes serious eye Irritation
 H335 = May cause respiratory irritation
 H360FD = May damage fertility or the unborn child
 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



Legal notice

This Material Safety Data Sheet (MSDS) is additional to the Technical Data Sheet (TDS) but does not replace it. The MSDS contains guidance on the safe handling, use, processing, storage, transportation and disposal of the product. This document relates to the original product BIO-PROTAN® Microvega. It may not be valid for the formulation or combination with other materials or in any process. The product is developed and tested for the specified uses and should not be used for any other purposes. Any other use may involve risks. The user will take sole responsibility for the precautions relating to the use of the product. The information in this MSDS is applicable to the product with regard to appropriate safety precautions and is not intended to guarantee any particular properties. This document is not to be considered a warranty or quality specification.

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