

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

1.1 Product identifier

Trade name: Defense-Man

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

Application of the substance / the mixture Turf fertilizer

Uses advised against

To be used only where there is a recognized need. Do not exceed the appropriate dose rates.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

TURF Handels GmbH

Am Hartboden 48

A-8101 Gratkorn

T: +43 3124 29064

F: +43 3124 29062

Further information obtainable from: Email: office@turf.at

1.4 Emergency telephone number:

+43 3124 29064

Available during office hours:

Mo - Th: 8 a.m. - 4.30 p.m.

Fr: 8 a.m. - 2.30 p.m.

Call the national emergency number!

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Eye Dam. 1 H318 Causes serious eye damage.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

Additional information: For the wording of the hazard categories, see section 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05



GHS08



GHS09

Signal word Danger

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Hazard-determining components of labelling:

manganese sulphate

Hazard statements

H318 Causes serious eye damage.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust.

P280 Wear eye protection / face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: The mixture does not contain PBT substances $\geq 0,1$ %.

vPvB: The mixture does not contain vPvB substances $\geq 0,1$ %.






SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

[% (w/w)]

CAS: 7785-87-7 EINECS: 232-089-9 Index number: 025-003-00-4 Reg.nr.: 01-2119456624-35-XXXX	manganese sulphate  STOT RE 2, H373  Eye Dam. 1, H318  Aquatic Chronic 2, H411	25 – 80%
CAS: 77-92-9 EINECS: 201-069-1 Index number: 607-750-00-3 RTECS: GE 7350000 Reg.nr.: 01-2119457026-42-XXXX	Citric acid  Eye Irrit. 2, H319; STOT SE 3, H335	5 – < 20%
CAS: 6915-15-7 EINECS: 230-022-8	I-Malic acid  Eye Irrit. 2, H319	5 – 20%

Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

In case of discomfort or doubt, seek medical advice.

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If unconscious, use a stable lateral position and do not administer anything through mouth.

After inhalation:

Supply fresh air; consult doctor in case of complaints.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Take off contaminated clothing and wash it before reuse.

Seek medical treatment.

After eye contact:

Rinse opened eye for several minutes under running water.

Remove contact lenses, if present and easy to do. Continue rinsing.

Consult an ophthalmologist or eye clinic immediately.

After swallowing:

Rinse mouth.

Do NOT induce vomiting.

If the patient is conscious, make him drink water.

Call a doctor immediately.

Never administer anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe eye irritation or damage.

May cause skin irritation on prolonged or repeated use.

Swallowing may cause nausea and diarrhea.

Prolonged overexposure to manganese Sulfates may cause headache, apathy, muscle weakness and neurological effects such as euphoria, impulsiveness and insomnia.

4.3 Indication of any immediate medical attention and special treatment needed

Depending on the condition of the patients, the doctor must assess the symptoms and the overall general condition.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

For safety reasons unsuitable extinguishing agents: Water with full jet

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

COx

Metal Oxides/Oxides

5.3 Advice for firefighters

Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information

Cool endangered receptacles with water spray.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Restricted access to the affected area until cleaning work is completed.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Avoid contact with skin and eyes.

Avoid formation of dust.

Do not breathe dust.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Pick up dry.

Avoid formation of dust.

Clean with water.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Ensure good ventilation.

Keep receptacles tightly sealed.

Avoid contact with skin and eyes.

Avoid breathing dust.

Eye wash bottles and emergency showers should be provided in the immediate area near the workplace.

Use personal protective equipment as required.

Observe protective measures and safety instructions.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store in dry conditions.

Store receptacle in a well ventilated area.

Store in accordance with local/regional/national/international regulations.

Information about storage in one common storage facility:

Store away from foodstuffs.

Store away from feeding stuff.

Store away from oxidising agents.

Further information about storage conditions:

Keep container tightly sealed.

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Protect container from damage.
Protect from frost.

Recommended storage temperature: room temperature

Storage class: 11

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

CAS: 7785-87-7 manganese sulphate

IOELV (EU)	Long-term value: 0.2* 0.05** mg/m ³ as Mn; *inhalable, **respirable fraction
MAK (Austria)	Short-term value: 1.6 E, 0.16 A mg/m ³ Long-term value: 0.2 E, 0.05 A mg/m ³ Als Mn berechnet
AGW (Germany)	Long-term value: 0.02A; 0.2E mg/m ³ 8(II);DFG,Y,10, 20
LEP (Spain)	Long-term value: 0.2 *0.05 mg/m ³ VLI, como Mn; *respirable, d,
VLEP (France)	Long-term value: 0.05* 0.20** mg/m ³ *fraction alvéolaire **inhalable; en manganèse
WEL (Great Britain)	Long-term value: 0.2* 0.05** mg/m ³ as Mn *inhalable fraction **respirable fraction
VL (Italy)	Long-term value: 0.2 mg/m ³ Frazione inalabile; come Mn
WGW (Netherland)	Long-term value: 0.2* 0.05** mg/m ³ als Mn; *inhaleerbaar **respirabel

CAS: 77-92-9 Citric acid

AGW (Germany)	Long-term value: 2 E mg/m ³ 2(I);DFG, Y
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Regulatory information

IOELV (EU): (EU) 2019/1831
MAK (Austria): GKV 2020, 156. Verordnung, 09.04.2021, Teil II
AGW (Germany): TRGS 900
LEP (Spain): Límites de exposición profesional para agentes químicos
VLEP (France): ED 1487 05.2021
WEL (Great Britain): EH40/2020
VL (Italy): D.lgs. n. 81/2008
WGW (Netherland): Grenswaarden gezondheidsschadelijke stoffen

DNELs

CAS: 7785-87-7 manganese sulphate

Dermal	Long-term exposure - systemic effects	0.002 mg/kg bw/d (consumer)
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Inhalative	Long-term exposure - systemic effects	0.004 mg/kg bw/d (workers) 0.043 mg/m ³ (consumer)
	Long-term exposure - local effects	0.2 mg/m ³ (workers) 0.2 mg/m ³ (workers)

PNECs

CAS: 7785-87-7 manganese sulphate

fresh water	0.03 mg/l
sea water	0 mg/l
intermittent release (fresh water)	0.088 mg/l
STP	56 mg/l
sediment (fresh water)	0.011 mg/kg dw
sediment (sea water)	0.001 mg/kg dw
soil	25.1 mg/kg dw

Ingredients with biological limit values:

CAS: 7785-87-7 manganese sulphate

BGW (Germany)	20 µg/l Untersuchungsmaterial: Vollblut Probennahmezeitpunkt: bei Langzeitexposition: am Schichtende nach mehreren vorangegangenen Schichten, Expositionsende bzw. Schichtende Parameter: Mangan
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Regulatory information BGW (Germany): TRGS 903

Additional Occupational Exposure Limit Values for possible hazards during processing:

The national dust limits must be observed in the event of dust generation.

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Appropriate engineering controls

No further data; see section 7.

Technical measures and the use of suitable working methods take priority over the use of personal protective equipment.

Individual protection measures, such as personal protective equipment

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Do not eat or drink while working.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Immediately remove all soiled and contaminated clothing.

Prevent formation of dust.

Do not breathe dust.

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

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Eye wash bottles and emergency showers should be provided in the immediate area near the workplace.

Respiratory protection: Wear dust mask during formation of dust.

Hand protection



Protective gloves

EN 374

The glove material has to be impermeable and resistant to the product/ the substance/ the mixture.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/face protection



Tightly sealed goggles

EN 166

Body protection: Protective work clothing

Environmental exposure controls

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Physical state	Solid
Colour:	White powder with dark powder
Odour:	Odourless
Odour threshold:	No information available.
Melting point/freezing point:	No information available.
Boiling point or initial boiling point and boiling range	No information available.
Flammability	Not determined.
Lower and upper explosion limit	
Lower:	No information available.

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Upper:	No information available.
Flash point:	Not applicable.
Decomposition temperature:	No information available.
pH	No information available.
Viscosity:	
Kinematic viscosity	Not applicable.
Dynamic:	Not applicable.
Solubility	
water:	Soluble.
Partition coefficient n-octanol/water (log value)	

77-92-9	Citric acid	-1,6 log Kow
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Vapour pressure:	Not applicable.
Density and/or relative density	
Density:	No information available.
Vapour density	Not applicable.
Particle characteristics	See section 3.

9.2 Other information

Appearance:

Form: Powder

Important information on protection of health and environment, and on safety.

Ignition temperature:	Product is not selfigniting.
Explosive properties:	Product does not present an explosion hazard.
Change in condition	
Softening point/range	
Oxidising properties	None.
Evaporation rate	Not applicable.

Information with regard to physical hazard classes

Explosives	void
Flammable gases	void
Aerosols	void
Oxidising gases	void
Gases under pressure	void
Flammable liquids	void
Flammable solids	void
Self-reactive substances and mixtures	void
Pyrophoric liquids	void
Pyrophoric solids	void
Self-heating substances and mixtures	void
Substances and mixtures, which emit flammable gases in contact with water	void
Oxidising liquids	void
Oxidising solids	void

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Organic peroxides	void
Corrosive to metals	void
Desensitised explosives	void

SECTION 10: Stability and reactivity

- 10.1 Reactivity** No hazardous reactions known if stored and used as prescribed.
- 10.2 Chemical stability** No decomposition if used and stored according to specifications.
- 10.3 Possibility of hazardous reactions** No dangerous reactions known.
- 10.4 Conditions to avoid** No further relevant information available.
- 10.5 Incompatible materials:**
oxidizing agent
Bases
- 10.6 Hazardous decomposition products:**
No decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

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

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

LD/LC50 values relevant for classification:

CAS: 7785-87-7 manganese sulphate

Oral	LD50	2,150 mg/kg (rat)
Inhalative	LC50/4h	> 4.45 mg/l (rat)

CAS: 77-92-9 Citric acid

Oral	LD50	5,400 mg/kg (mouse)
Dermal	LD50	> 2,000 mg/kg (rat)

CAS: 6915-15-7 l-Malic acid

Oral	LD50	3,500 mg/kg (rat)
Dermal	LD50	20,000 mg/kg (rat)

- Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- Serious eye damage/irritation** Causes serious eye damage.
- Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- Carcinogenicity** Based on available data, the classification criteria are not met.
- Reproductive toxicity** Based on available data, the classification criteria are not met.
- STOT-single exposure** Based on available data, the classification criteria are not met.
- STOT-repeated exposure** May cause damage to organs through prolonged or repeated exposure.
- Aspiration hazard** Based on available data, the classification criteria are not met.

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11.2 Information on other hazards

Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

CAS: 7785-87-7 manganese sulphate

LC50 (96 h) 49.9 mg/l (fish)

CAS: 77-92-9 Citric acid

LC50 (48 h) 440 mg/l (fish)

CAS: 6915-15-7 l-Malic acid

EC50 (48 h) 240 mg/l (daphnia)

12.2 Persistence and degradability

For the inorganic ingredients, the methods for determining biodegradability are not applicable.

77-92-9 Citric acid 97 % (28 d)

12.3 Bioaccumulative potential

77-92-9 Citric acid -1,6 log Kow

12.4 Mobility in soil No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: The mixture does not contain PBT substances $\geq 0,1$ %.

vPvB: The mixture does not contain vPvB substances $\geq 0,1$ %.

12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Remark: Toxic for fish

Additional ecological information:

General notes:

Toxic to aquatic life with long lasting effects.

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Only dispose of product residues via authorised companies according to local legislation.

European waste catalogue

Notes: The European Waste Catalogue (EWC) classifies waste materials and categorises them according to what they are and how they were produced. This may cause other classifications. The final decision belongs to the last user.

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02 01 08*	agrochemical waste containing hazardous substances
HP4	Irritant - skin irritation and eye damage
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP14	Ecotoxic

Uncleaned packaging:

Recommendation:

Dispose of packaging according to regulations on the disposal of packagings.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID/ADN, IMDG, IATA

UN3077

14.2 UN proper shipping name

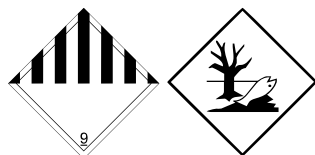
ADR/RID/ADN

3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (manganese sulphate)
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (manganese sulphate)

IMDG, IATA

14.3 Transport hazard class(es)

ADR/RID/ADN, IATA



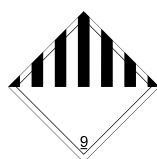
Class

9 Miscellaneous dangerous substances and articles.

Label

9

IMDG



Class

9 Miscellaneous dangerous substances and articles.

Label

9

14.4 Packing group

ADR/RID/ADN, IMDG, IATA

III

14.5 Environmental hazards:

Special marking (ADR/RID/ADN):

Symbol (fish and tree)

Special marking (IATA):

Symbol (fish and tree)

14.6 Special precautions for user

Warning: Miscellaneous dangerous substances and articles.

Hazard identification number (Kemler code):

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Trade name: **Defense-Man**

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EMS Number: F-A,S-F
Stowage Category A
Stowage Code SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
14.7 Maritime transport in bulk according to IMO instruments Not applicable.

Transport/Additional information:

ADR/RID/ADN

Limited quantities (LQ) 5 kg
Excepted quantities (EQ) Code: E1
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 1000 g
Transport category 3
Tunnel restriction code (-)

IMDG

Limited quantities (LQ) 5 kg
Excepted quantities (EQ) Code: E1
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 1000 g
UN "Model Regulation": UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANGANESE SULPHATE), 9, III

SECTION 15: Regulatory information

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

Directive 2012/18/EU

Named dangerous substances - ANNEX I None of the ingredients is listed.

Seveso category E2 Hazardous to the Aquatic Environment

Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t

Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

REGULATION (EU) 2019/1148

Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

None of the ingredients is listed.

Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

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Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

National regulations:

Information about limitation of use: Employment restrictions concerning juveniles must be observed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Training hints

Before handling, storage or use for the first time, employees must be informed about the properties of the substance and about measures taken to ensure safety and environmental protection.

Classification according to Regulation (EC) No 1272/2008

Serious eye damage/irritation
Specific target organ toxicity (repeated exposure)
Hazardous to the aquatic environment - long-term (chronic) aquatic hazard

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

Department issuing SDS:

UmEnA GmbH

<http://umena.at>

Email: office@umena.at

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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Safety data sheet
according to 1907/2006/EC



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Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

— EU —