

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

1.1 Product identifier

Trade name: Defense-CuZn

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

Application of the substance / the mixture Soil amendment

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

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Dam. 1 H318 Causes serious eye damage.

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very 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



GHS07



GHS09

Trade name: Defense-CuZn

(Contd. of page 1)

Signal word Danger

Hazard-determining components of labelling:

zinc sulphate (anhydrous)
copper sulphate

Hazard statements

H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective gloves / eye protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
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:

Inorganic product. The criteria of the PBT assessment according to REACH are not applicable for inorganic substances.

vPvB:

Inorganic product. The criteria of the vPvB assessment according to REACH are not applicable for inorganic substances.






SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

[% (w/w)]

CAS: 7733-02-0 EINECS: 231-793-3 Index number: 030-006-00-9	zinc sulphate (anhydrous)  Eye Dam. 1, H318  Aquatic Acute 1, H400; Aquatic Chronic 1, H410  Acute Tox. 4, H302	65 – 70%
CAS: 7758-98-7 EINECS: 231-847-6 Index number: 029-004-00-0 RTECS: GL 8800000	copper sulphate  Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=1)  Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	20 – 30%

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

(Contd. on page 3)

Trade name: Defense-CuZn

(Contd. of page 2)

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

In case of discomfort or doubt, seek medical advice.

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

No further relevant information available.

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.

(Contd. on page 4)

Trade name: Defense-CuZn

(Contd. of page 3)

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.

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.

Thorough dedusting.

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.

Recommended storage temperature: room temperature

(Contd. on page 5)

Trade name: **Defense-CuZn**

(Contd. of page 4)

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: 7733-02-0 zinc sulphate (anhydrous)

MAK (Germany)	Long-term value: 0.1A* 2E** mg/m ³ *alveolengängig; **eintembar
---------------	---

CAS: 7758-98-7 copper sulphate

MAK (Austria)	Short-term value: 4E; 0.4A* mg/m ³ Long-term value: 1E; 0.1A* mg/m ³ als Cu berechnet; *als Rauch
---------------	---

MAK (Germany)	Long-term value: 0.01 A mg/m ³ als Cu
---------------	---

LEP (Spain)	Long-term value: 0.01 mg/m ³ Fracc. resp.; d ,como Cu
-------------	---

WEL (Great Britain)	Short-term value: 2 mg/m ³ Long-term value: 1 mg/m ³ dusts and mists, as Cu
---------------------	---

WGW (Netherland)	Long-term value: 0.1 mg/m ³ inhaleerbaar
------------------	--

Regulatory information

MAK (Germany): MAK- und BAT-Liste

MAK (Austria): GKV 2020, 156. Verordnung, 09.04.2021, Teil II

LEP (Spain): Límites de exposición profesional para agentes químicos

WEL (Great Britain): EH40/2020

WGW (Netherland): Grenswaarden gezondheidsschadelijke stoffen

DNELs No data available.

PNECs No data available.

Regulatory information

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.

(Contd. on page 6)

Trade name: Defense-CuZn

(Contd. of page 5)

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.

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.

Material of gloves

Rubber gloves

Butyl rubber, BR

Chloroprene rubber, CR

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.

(Contd. on page 7)

Trade name: Defense-CuZn

(Contd. of page 6)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Physical state	Solid
Colour:	white/blue
Odour:	sulfur odour
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.
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)	Not determined.
Vapour pressure:	Not applicable.
Density and/or relative density	
Density:	No information available.
Relative density	Not determined.
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.
Solvent content:	
Solids content:	100.0 %
Change in condition	
Softening point/range	
Oxidising properties	No information available.
Evaporation rate	Not applicable.

(Contd. on page 8)

Trade name: **Defense-CuZn**

(Contd. of page 7)

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
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 High temperatures

10.5 Incompatible materials: oxidizing agent

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 Harmful if swallowed.

LD/LC50 values relevant for classification:

CAS: 7733-02-0 zinc sulphate (anhydrous)

Oral	LD50	926 mg/kg (rat)
		Quelle: Europäische Chemikalienagentur http://www.echa.eu

CAS: 7758-98-7 copper sulphate

Oral	LD50	300 mg/kg (rat)
		Quelle: Europäische Chemikalienagentur http://www.echa.eu

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation Causes serious eye damage.

(Contd. on page 9)

Trade name: Defense-CuZn

(Contd. of page 8)

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

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

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: 7733-02-0 zinc sulphate (anhydrous)

EC50 (48 h) 0.259 mg/l (daphnia) (*Daphnia magna*)

LC50 (96 h) 0.3 mg/l (fish) (*Pimephales promelas*)

IC50 (72 h) 0.136 mg/l (algae) (*Pseudokirchneriella subcapitata*)

CAS: 7758-98-7 copper sulphate

EC50 (48 h) 0.0094 mg/l (daphnia) (*Daphnia magna*)

EC50 (72 h) 0.136 mg/l (algae) (*Chlamydomonas reinhardtii*)

LC50 (96 h) 0.0138 mg/l (fish) (*Onchorhynchus mykiss*)

12.2 Persistence and degradability

For inorganic substances/products, the methods for determining biodegradability are not applicable.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT:

Inorganic product. The criteria of the PBT assessment according to REACH are not applicable for inorganic substances.

vPvB:

Inorganic product. The criteria of the vPvB assessment according to REACH are not applicable for inorganic substances.

12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Remark: Very toxic for fish

Additional ecological information:

General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

(Contd. on page 10)



Trade name: Defense-CuZn

(Contd. of page 9)

Very toxic to aquatic life with long lasting effects.

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.

02 01 08*	agrochemical waste containing hazardous substances
HP4	Irritant - skin irritation and eye damage
HP6	Acute 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 not regulated

14.2 UN proper shipping name

ADR/RID/ADN, IMDG, IATA not regulated

14.3 Transport hazard class(es)

ADR/RID/ADN, ADN, IMDG, IATA

Class not regulated

14.4 Packing group

ADR/RID/ADN, IMDG, IATA not regulated

14.5 Environmental hazards: Not applicable.

14.6 Special precautions for user Not applicable.

14.7 Maritime transport in bulk according to IMO

instruments Not applicable.

UN "Model Regulation": not regulated

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.

(Contd. on page 11)

Trade name: Defense-CuZn

(Contd. of page 10)

Seveso category E1 Hazardous to the Aquatic Environment

Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t

Qualifying quantity (tonnes) for the application of upper-tier requirements 200 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.

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

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H400 Very toxic to aquatic life.

H410 Very 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

Acute toxicity - oral

Skin corrosion/irritation

Serious eye damage/irritation

Hazardous to the aquatic environment - short-term (acute) aquatic hazard

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.

(Contd. on page 12)



Trade name: Defense-CuZn

(Contd. of page 11)

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

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

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

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

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1