



## SECTION 1: IDENTIFICATION

- 1.1 GHS Product identifier:** TurfRx Micro+
- Other means of identification:**  
Non-applicable
- 1.2 Recommended use of the chemical and restrictions on use:**  
Relevant uses: Fertilizer. For professional users only.  
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:**  
Redox Chemicals LLC  
130 South 100 West PO Box 129  
83318 Burley - Idaho - Estados Unidos  
Phone: 208-678-2610 - Fax: 208-677-3609  
casey@redoxchem.com  
<https://www.redoxgrows.com/>
- 1.4 Emergency phone number:** 208-678-2610

## SECTION 2: HAZARD(S) IDENTIFICATION

- 2.1 Classification of the substance or mixture:**  
**29 CFR 1910.1200:**  
Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.  
Acute Tox. 5: Acute toxicity if swallowed, Category 5, H303  
Aquatic Acute 1: Hazardous to the aquatic environment, acute hazard, Category 1, H400  
Aquatic Chronic 2: Hazardous to the aquatic environment, long-term hazard, Category 2, H411  
Eye Dam. 1: Serious eye damage, Category 1, H318  
Skin Irrit. 3: Skin irritation, Category 3, H316  
STOT RE 2: Specific target organ toxicity, repeated exposure, Category 2, H373
- 2.2 Label elements:**  
**29 CFR 1910.1200:**  
**Danger**
- 
- Hazard statements:**  
Acute Tox. 5: H303 - May be harmful if swallowed.  
Aquatic Chronic 1: H410 - Very toxic to aquatic life with long lasting effects.  
Eye Dam. 1: H318 - Causes serious eye damage.  
Skin Irrit. 3: H316 - Causes mild skin irritation.  
STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure.
- Precautionary statements:**  
P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
P273: Avoid release to the environment.  
P280: Wear protective gloves/protective clothing/eye protection/protective footwear.  
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.  
P312: Call a POISON CENTER or doctor/physician if you feel unwell.  
P314: Get medical advice/attention if you feel unwell.  
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively.
- 2.3 Hazards not otherwise classified (HNOC):**  
Non-applicable

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)**

**3.1 Substances:**

Non-applicable

**3.2 Mixtures:**

**Chemical description:** Mixture of substances

**Components:**

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200. Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: Non-applicable	<b>Iron Sulfate</b> Acute Tox. 4: H302; Aquatic Acute 3: H402; Aquatic Chronic 3: H412; Eye Irrit. 2A: H319; Skin Irrit. 2: H315 - Warning	2.5 - <15 %
CAS: 10034-96-5	<b>Manganese sulphate</b> Aquatic Acute 2: H401; Aquatic Chronic 2: H411; Eye Dam. 1: H318; STOT RE 2: H373 - Danger	2.5 - <15 %
CAS: 7446-19-7	<b>Zinc Sulfate</b> Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Dam. 1: H318 - Danger	2.5 - <15 %
CAS: 10043-35-3	<b>Boric acid</b> Acute Tox. 4: H302 - Warning	<2.5 %
CAS: 7758-99-8	<b>Copper Sulfate</b> Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Dam. 1: H318 - Danger	<2.5 %
CAS: Non-applicable	<b>Sodium molybdate</b>	<2.5 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

**SECTION 4: FIRST-AID MEASURES**

**4.1 Description of necessary measures:**

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

**By inhalation:**

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

**By skin contact:**

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

**By eye contact:**

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

**By ingestion/aspiration:**

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

**4.2 Most important symptoms/effects, acute and delayed:**

Acute and delayed effects are indicated in sections 2 and 11.

**4.3 Indication of immediate medical attention and special treatment needed, if necessary:**

Non-applicable

**SECTION 5: FIRE-FIGHTING MEASURES**

**5.1 Suitable (and unsuitable) extinguishing media:**

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## SECTION 5: FIRE-FIGHTING MEASURES (continued)

### Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

### Unsuitable extinguishing media:

Non-applicable

### 5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

### 5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

### Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures:

#### For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

#### For emergency responders:

See section 8.

### 6.2 Environmental precautions:

Avoid at all cost any type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

### 6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

### 6.4 Reference to other sections:

See sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling:

#### A.- General precautions for safe use

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Maintain order, cleanliness and destroy using safe methods (section 6).

#### B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

#### C.- Technical recommendations on general occupational hygiene

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

#### D.- Technical recommendations to prevent environmental risks

Due to the danger of this product for the environment it is recommended to use it within an area containing contamination control barriers in case of spillage, as well as having absorbent material in close proximity.

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**SECTION 7: HANDLING AND STORAGE (continued)**

**7.2 Conditions for safe storage, including any incompatibilities:**

A.- Technical measures for storage

Store in a cool, dry, well-ventilated location

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

**7.3 Specific end use(s):**

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters:**

Substances whose occupational exposure limits have to be monitored in the workplace:

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000):

Identification	Occupational exposure limits	
	Sodium molybdate CAS: Non-applicable	8-hour TWA PEL
	Ceiling Values - TWA PEL	

US. ACGIH Threshold Limit Values (2022):

Identification	Occupational exposure limits	
	Iron Sulfate CAS: Non-applicable	TLV-TWA
	TLV-STEL	2 mg/m <sup>3</sup>
Manganese sulphate CAS: 10034-96-5	TLV-TWA	0.02 mg/m <sup>3</sup>
	TLV-STEL	
Sodium molybdate CAS: Non-applicable	TLV-TWA	0.5 mg/m <sup>3</sup>
	TLV-STEL	

CALIFORNIA- TABLE AC-1 PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS:

Identification	Occupational exposure limits	
	Iron Sulfate CAS: Non-applicable	PEL
	STEL	
Manganese sulphate CAS: 10034-96-5	PEL	0.2 mg/m <sup>3</sup>
	STEL	
Copper Sulfate CAS: 7758-99-8	PEL	1 mg/m <sup>3</sup>
	STEL	
Sodium molybdate CAS: Non-applicable	PEL	0.5 mg/m <sup>3</sup>
	STEL	

**8.2 Appropriate engineering controls:**

A.- Individual protection measures, such as personal protective equipment

Always provide effective general and, when necessary, local exhaust ventilation to maintain the ambient workplace atmosphere below the exposure limits.. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For additional information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Protective gloves against minor risks	Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional /industrial users, we recommend using chemical protection gloves. Use gloves in accordance with manufacturer´s use limitations and OSHA standard 1910.138 (29CFR)

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

**D.- Eye and face protection**

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer's use limitations and OSHA standard 1910.133 (29CFR)

**E.- Bodily protection**

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration.
	Anti-slip work shoes	Replace before any evidence of deterioration.

**F.- Additional emergency measures**

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

**Environmental exposure controls:**

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

**National volatile organic compound emission standards (40 CFR Part 59):**

V.O.C.(weight-percent):	0 % weight
V.O.C. at 68 °F:	0 kg/m <sup>3</sup> (0 g/L)

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties:**

For complete information see the product datasheet.

**Appearance:**

Physical state at 68 °F:	Liquid
Appearance:	Fluid
Color:	Not available
Odor:	Characteristic
Odour threshold:	Non-applicable *

**Volatility:**

Boiling point at atmospheric pressure:	212 °F
Vapour pressure at 68 °F:	2350 Pa
Vapour pressure at 122 °F:	12381.01 Pa (12.38 kPa)
Evaporation rate at 68 °F:	Non-applicable *

**Product description:**

Density at 68 °F:	1192.8 kg/m <sup>3</sup>
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\*Not relevant due to the nature of the product, not providing information property of its hazards.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)**

Relative density at 68 °F:	1.193
Dynamic viscosity at 68 °F:	1.59 cP
Kinematic viscosity at 68 °F:	1.33 mm <sup>2</sup> /s
Kinematic viscosity at 104 °F:	Non-applicable *
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 °F:	Non-applicable *
Partition coefficient n-octanol/water 68 °F:	Non-applicable *
Solubility in water at 68 °F:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
<b>Flammability:</b>	
Flash Point:	Non Flammable (>199.4 °F)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
<b>Particle characteristics:</b>	
Median equivalent diameter:	Non-applicable

**9.2 Other information:**

**Information with regard to physical hazard classes:**

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *

**Other safety characteristics:**

Surface tension at 68 °F:	Non-applicable *
Refraction index:	Non-applicable *

\*Not relevant due to the nature of the product, not providing information property of its hazards.

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity:**

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

**10.2 Chemical stability:**

Chemically stable under the indicated conditions of storage, handling and use.

**10.3 Possibility of hazardous reactions:**

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

**10.4 Conditions to avoid:**

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

**10.5 Incompatible materials:**

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## SECTION 10: STABILITY AND REACTIVITY (continued)

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

### 10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO<sub>2</sub>), carbon monoxide and other organic compounds.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

#### Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

#### A- Ingestion (acute effect):

- Acute toxicity : The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

#### B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

#### C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Produces skin inflammation.
- Contact with the eyes: Produces serious eye damage after contact.

#### D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.  
IARC: Non-applicable
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

#### E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

#### F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

#### G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Exposure in high concentration can cause a breakdown in the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

#### H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

#### Other information:

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**SECTION 11: TOXICOLOGICAL INFORMATION (continued)**

Non-applicable

**Specific toxicology information on the substances:**

Identification	Acute toxicity		Genus
	LD50 oral	LD50 dermal	
Boric acid CAS: 10043-35-3	>5000 mg/kg	Non-applicable	Rat
	Non-applicable	Non-applicable	
	Non-applicable	Non-applicable	
Copper Sulfate CAS: 7758-99-8	482 mg/kg	Non-applicable	Rat
	Non-applicable	Non-applicable	
	Non-applicable	Non-applicable	
Iron Sulfate CAS: Non-applicable	1480 mg/kg	Non-applicable	Rat
	Non-applicable	Non-applicable	
	Non-applicable	Non-applicable	
Zinc Sulfate CAS: 7446-19-7	500 mg/kg (ATEi)	Non-applicable	
	Non-applicable	Non-applicable	
	Non-applicable	Non-applicable	

**SECTION 12: ECOLOGICAL INFORMATION**

The experimental information related to the eco-toxicological properties of the product itself is not available

**12.1 Ecotoxicity (aquatic and terrestrial, where available):**

**Acute toxicity:**

Identification	Concentration		Species	Genus
	LC50	EC50		
Iron Sulfate CAS: Non-applicable	>10 - 100 (96 h)			Fish
	>10 - 100 (48 h)			Crustacean
	>10 - 100 (72 h)			Algae
Manganese sulphate CAS: 10034-96-5	>1 - 10 (96 h)			Fish
	>1 - 10 (48 h)			Crustacean
	>1 - 10 (72 h)			Algae
Zinc Sulfate CAS: 7446-19-7	0.43 mg/L (96 h)		Oncorhynchus mykiss	Fish
	Non-applicable			
	Non-applicable			
Copper Sulfate CAS: 7758-99-8	0.81 mg/L (96 h)		Cyprinus carpio	Fish
	Non-applicable			
	Non-applicable			

**Chronic toxicity:**

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**SECTION 12: ECOLOGICAL INFORMATION (continued)**

Identification	Concentration		Species	Genus
Zinc Sulfate CAS: 7446-19-7	NOEC	0.44 mg/L	Oncorhynchus mykiss	Fish
	NOEC	Non-applicable		
Boric acid CAS: 10043-35-3	NOEC	11.2 mg/L	Pimephales promelas	Fish
	NOEC	25.9 mg/L	Hyalella azteca	Crustacean

**12.2 Persistence and degradability:**

Not available

**12.3 Bioaccumulative potential:**

Identification	Bioaccumulation potential	
Boric acid CAS: 10043-35-3	BCF	0
	Pow Log	-0.76
	Potential	Low

**12.4 Mobility in soil:**

Not available

**12.5 Results of PBT and vPvB assessment:**

Non-applicable

**12.6 Other adverse effects:**

Not described

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Disposal methods:**

**Waste management (disposal and evaluation):**

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. Waste should not be disposed of to drains. See epigraph 6.2.

**Regulations related to waste management:**

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

**SECTION 14: TRANSPORT INFORMATION**

**Transport of dangerous goods by land:**

With regard to 49 CFR on the Transport of Dangerous Goods:



**14.1 UN number:**

UN3082

**14.2 UN proper shipping name:**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Manganese sulphate)

**14.3 Transport hazard class(es):**

9

Labels:

9

**14.4 Packing group, if applicable:**

III

**14.5 Marine pollutant:**

Yes

**14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**

Physico-Chemical properties: see section 9

Limited quantities: 5 L

Under 49 CFR 171.4, Except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars, and aircraft

**14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):**

Non-applicable

**Transport of dangerous goods by sea:**

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**SECTION 14: TRANSPORT INFORMATION (continued)**

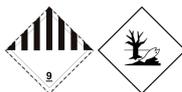
With regard to IMDG 39-18:



- 14.1 UN number:** UN3082
- 14.2 UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Manganese sulphate)
- 14.3 Transport hazard class(es):** 9  
Labels: 9
- 14.4 Packing group, if applicable:** III
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**  
Special regulations: 335, 969, 274  
EmS Codes: F-A, S-F  
Physico-Chemical properties: see section 9  
Limited quantities: 5 L  
Segregation group: Non-applicable
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

**Transport of dangerous goods by air:**

With regard to IATA/ICAO 2022:



- 14.1 UN number:** UN3082
- 14.2 UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Manganese sulphate)
- 14.3 Transport hazard class(es):** 9  
Labels: 9
- 14.4 Packing group, if applicable:** III
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**  
Physico-Chemical properties: see section 9
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations specific for the product in question:**

Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): Manganese sulphate ; Zinc Sulfate ; Copper Sulfate  
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable  
The Toxic Substances Control Act (TSCA) : Iron Sulfate ; Boric acid ; Sodium molybdate  
Massachusetts RTK - Substance List: Iron Sulfate ; Manganese sulphate ; Zinc Sulfate ; Copper Sulfate  
New Jersey Worker and Community Right-to-Know Act: Iron Sulfate ; Manganese sulphate ; Zinc Sulfate ; Copper Sulfate  
New York RTK - Substance list: Iron Sulfate ; Manganese sulphate ; Zinc Sulfate ; Boric acid ; Copper Sulfate  
Pennsylvania Worker and Community Right-to-Know Law: Iron Sulfate ; Manganese sulphate ; Zinc Sulfate ; Copper Sulfate  
CANADA-Domestic Substances List (DSL): Iron Sulfate ; Zinc Sulfate ; Boric acid ; Sodium molybdate  
CANADA-Non-Domestic Substances List (NDSL): Non-applicable  
NTP (National Toxicology Program): Non-applicable  
Minnesota - Hazardous substances ERTK: Iron Sulfate ; Manganese sulphate ; Boric acid ; Sodium molybdate  
Rhode Island - Hazardous substances RTK: Iron Sulfate ; Manganese sulphate ; Zinc Sulfate ; Copper Sulfate  
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable  
Hazardous Air Pollutants (Clean Air Act): Manganese sulphate  
CALIFORNIA LABOR CODE - The Hazardous Substances List: Iron Sulfate ; Manganese sulphate ; Zinc Sulfate ; Copper Sulfate ; Sodium molybdate  
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: Iron Sulfate (1000 pounds) ; Manganese sulphate (1 pounds) ; Zinc Sulfate (1 pounds) ; Copper Sulfate (1 pounds)

**Specific provisions in terms of protecting people or the environment:**

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Date of compilation: 6/3/2022

Version: 1

**SECTION 15: REGULATORY INFORMATION (continued)**

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

**Other legislation:**

Take into consideration other applicable federal, state, and local laws and local regulations.

**SECTION 16: OTHER INFORMATION****Legislation related to safety data sheets:**

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

**Texts of the legislative phrases mentioned in section 2:**

H318: Causes serious eye damage.

H400: Very toxic to aquatic life.

H411: Toxic to aquatic life with long lasting effects.

H316: Causes mild skin irritation.

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

H303: May be harmful if swallowed.

**Texts of the legislative phrases mentioned in section 3:**

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

**29 CFR 1910.1200:**

Acute Tox. 4: H302 - Harmful if swallowed.

Aquatic Acute 1: H400 - Very toxic to aquatic life.

Aquatic Acute 2: H401 - Toxic to aquatic life.

Aquatic Acute 3: H402 - Harmful to aquatic life.

Aquatic Chronic 1: H410 - Very toxic to aquatic life with long lasting effects.

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

Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects.

Eye Dam. 1: H318 - Causes serious eye damage.

Eye Irrit. 2A: H319 - Causes serious eye irritation.

Skin Irrit. 2: H315 - Causes skin irritation.

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

**Advice related to training:**

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

**Principal bibliographical sources:**

Occupational Safety & Health Administration (OSHA).

**Abbreviations and acronyms:**

IMDG: International maritime dangerous goods code

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

COD: Chemical Oxygen Demand

BOD5: 5-day biochemical oxygen demand

BCF: Bioconcentration factor

LD50: Lethal Dose 50

CL50: Lethal Concentration 50

EC50: Effective concentration 50

Log-POW: Octanol-water partition coefficient

Koc: Partition coefficient of organic carbon

IARC: International Agency for Research on Cancer

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Manufacturer Disclaimer: The information contained in this safety data sheet ("SDS") is based on sources, technical knowledge and current legislation. Furthermore, is based on data believed to be accurate; thus, the company does not assume any liability for its accuracy. The information provided herein cannot be considered a guarantee of the properties of this product and the same is simply a description of the security requirements. The use, occupational methodology and/or conditions for users of this product are not within our awareness or control. It is ultimately the responsibility of the user(s) to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information of this SDS only refers to this product, which should not be used for purposes other than those specified. Finally, the manner in which this product is used and whether there is any infringement of patents is the sole responsibility of the user(s).

END OF SAFETY DATA SHEET