

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Product name	MULTIPLE PRO Spektrum Universal
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#### Other means of identification

Product code	50001215
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#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-  
stance/Mixture : A fertilizer for use in agriculture

Recommended restrictions  
on use : Use as recommended by the label.

#### 1.3 Details of the supplier of the safety data sheet

<u>Supplier Address</u>	FMC Ukraine LLC 8 Illinska Street 04070 Kyiv Ukraine  Telephone: Website: fmc.com.ua E-mail address: SDS-Info@fmc.com, info@fmc.com.ua .
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#### 1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:  
Ukraine: 380-947101374 (CHEMTREC)

Medical emergency:  
All other countries: +1 651 / 632-6793 (Collect)

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### **Classification (REGULATION (EC) No 1272/2008)**

Serious eye damage, Category 1	H318: Causes serious eye damage.
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Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
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Long-term (chronic) aquatic hazard, Cat-	H410: Very toxic to aquatic life with long lasting
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# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

Category 1

effects.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H318 Causes serious eye damage.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P273 Avoid release to the environment.  
P280 Wear eye protection/ face protection.

#### **Response:**

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P391 Collect spillage.

#### **Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:  
dicopper oxide

#### **Additional Labelling**

EUH208 Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4      Revision Date: 08.04.2025      SDS Number: 50001215      Date of last issue: 04.04.2025  
Date of first issue: 18.09.2020

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
manganese carbonate	598-62-9 209-942-9		>= 30 - < 50
dicopper oxide	1317-39-1 215-270-7 029-002-00-X	Acute Tox. 4; H302 Acute Tox. 4; H332 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 3 - < 10
ethanediol	107-21-1 203-473-3 603-027-00-1	Acute Tox. 4; H302 STOT RE 2; H373 (Kidney)	>= 2,5 - < 10

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing  
Avoid inhalation, ingestion and contact with skin and eyes.  
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- If inhaled : Move to fresh air.  
If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash contaminated clothing before re-use.  
Wash off immediately with plenty of water for at least 15 minutes.  
Get medical attention if irritation develops and persists.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.  
Protect unharmed eye.

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2025
1.4	08.04.2025	50001215	Date of first issue: 18.09.2020

---

Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.

### 4.2 Most important symptoms and effects, both acute and delayed

Risks : Causes serious eye damage.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.  
High volume water jet

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.  
  
Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.  
Carbon oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Firefighters should wear protective clothing and self-contained breathing apparatus.  
  
Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: Accidental release measures

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

Personal precautions : Use personal protective equipment.  
Never return spills in original containers for re-use.  
Mark the contaminated area with signs and prevent access to unauthorized personnel.  
Only qualified personnel equipped with suitable protective

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## MULTIPLE PRO Spektrum Universal

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2025
1.4	08.04.2025	50001215	Date of first issue: 18.09.2020

---

equipment may intervene.  
For disposal considerations see section 13.

### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
To avoid spills during handling keep bottle on a metal tray.  
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.  
Wash hands before breaks and at the end of workday.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully re-sealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards. To maintain product quality, DO NOT ALLOW TO FREEZE.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully re-sealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4      Revision Date: 08.04.2025      SDS Number: 50001215      Date of last issue: 04.04.2025  
Date of first issue: 18.09.2020

Recommended storage temperature : > 5 °C

Further information on storage stability : No decomposition if stored and applied as directed.  
Do not freeze.

### 7.3 Specific end use(s)

Specific use(s) : Fertilizers

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
manganese carbonate	598-62-9	TWA (inhalable fraction)	0,2 mg/m <sup>3</sup> (Manganese)	2017/164/EU
	Further information: Indicative			
		TWA (Respirable fraction)	0,05 mg/m <sup>3</sup> (Manganese)	2017/164/EU
	Further information: Indicative			
ethanediol	107-21-1	MAC (aerosol and vapour)	5 mg/m <sup>3</sup>	UA OEL
	Further information: Danger class 3			
		TWA	20 ppm 52 mg/m <sup>3</sup>	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	40 ppm 104 mg/m <sup>3</sup>	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
dicopper oxide	Consumers	Oral	Long-term systemic effects	0,041 mg/kg bw/day
	Consumers	Oral	Acute systemic effects	0,082 mg/kg bw/day
manganese carbonate	Workers	Inhalation	Long-term systemic effects	0,2 mg/m <sup>3</sup>
	Workers	Dermal	Long-term systemic effects	0,004 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,043 mg/m <sup>3</sup>
	Consumers	Dermal	Long-term systemic effects	0,0021 mg/kg bw/day

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4      Revision Date: 08.04.2025      SDS Number: 50001215      Date of last issue: 04.04.2025  
Date of first issue: 18.09.2020

ethanediol	Workers	Inhalation	Long-term local effects	35 mg/m3
	Workers	Dermal	Long-term systemic effects	106 mg/kg
	Consumers	Inhalation	Long-term local effects	7 mg/m3
	Consumers	Dermal	Long-term systemic effects	53 mg/kg

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
dicopper oxide	Fresh water	0,0078 mg/l
	Marine water	0,0052 mg/l
	Sewage treatment plant	0,230 mg/l
	Fresh water sediment	87 mg/kg dry weight (d.w.)
	Marine sediment	676 mg/kg dry weight (d.w.)
	Soil	65 mg/kg dry weight (d.w.)
manganese carbonate	Fresh water	0,0084 mg/l
	Intermittent use/release	0,011 mg/l
	Marine water	840 ng/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	8,18 mg/kg dry weight (d.w.)
	Marine sediment	0,810 mg/kg dry weight (d.w.)
	Soil	8,15 mg/kg dry weight (d.w.)
ethanediol	Fresh water	10 mg/l
	Marine water	1 mg/l
	Sewage treatment plant	199,5 mg/l
	Fresh water sediment	37 mg/kg dry weight (d.w.)
	Marine sediment	3,7 mg/kg dry weight (d.w.)
	Soil	1,53 mg/kg dry weight (d.w.)

## 8.2 Exposure controls

### Personal protective equipment

Eye/face protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Hand protection  
Material : Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Respiratory protection : No personal respiratory protective equipment normally required.
- Protective measures : Plan first aid action before beginning work with this product. Always have on hand a first-aid kit, together with proper instructions.  
Ensure that eye flushing systems and safety showers are located close to the working place.  
Wear suitable protective equipment.
- In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Physical state : liquid  
Form : suspension  
Colour : red brown  
Odour : Faint odour  
Odour Threshold : No data available  
pH : 8 - 11  
Concentration: 100 %
- Melting point/freezing point : No data available  
Initial boiling point and boiling range : No data available  
Flash point : No data available  
Upper explosion limit / Upper flammability limit : No data available  
Lower explosion limit / Lower flammability limit : No data available  
Vapour pressure : No data available  
Relative vapour density : No data available  
Relative density : 1,68 - 1,72  
Density : No data available  
Bulk density : No data available  
Solubility(ies)  
Water solubility : dispersible  
Solubility in other solvents : No data available
- Partition coefficient: n- : No data available



# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

---

octanol/water  
Auto-ignition temperature : No data available  
Decomposition temperature : No data available  
Viscosity  
Viscosity, dynamic : 1.800 - 4.500 mPa,s  
Viscosity, kinematic : No data available  
Explosive properties :  
No data available  
Oxidizing properties : Non-oxidizing

### 9.2 Other information

Particle size : No data available  
Particle Size Distribution : No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if stored and applied as directed.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : None reasonably foreseeable.No decomposition if stored and applied as directed.

### 10.4 Conditions to avoid

Conditions to avoid : Avoid extreme temperatures  
Direct sources of heat.  
Protect from frost.

### 10.5 Incompatible materials

Materials to avoid : Avoid strong acids, bases, and oxidizers

### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

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

#### Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

---

Method: Calculation method

Acute toxicity estimate: > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

### **Components:**

#### **manganese carbonate:**

Acute oral toxicity : LD0 (Rat, female): > 2.000 mg/kg  
Method: OECD Test Guideline 420  
Remarks: no mortality

Acute inhalation toxicity : LC0 (Rat, male and female): > 5,35 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Remarks: no mortality  
Based on data from similar materials

#### **dicopper oxide:**

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg  
Method: Acute toxicity estimate according to Regulation (EC)  
No. 1272/2008

LD50 (Rat, male and female): 1.340 mg/kg  
Symptoms: Fatality, Gastrointestinal tract damage

Acute inhalation toxicity : Acute toxicity estimate: 3,34 mg/l  
Test atmosphere: dust/mist  
Method: Acute toxicity estimate according to Regulation (EC)  
No. 1272/2008

LC50 (Rat, male and female): 3,34 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: respiratory depression, Bruising and haemorrhage formation, Fatality, ataxia, lethargy

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: no mortality

#### **ethanediol:**

Acute inhalation toxicity : LC0 (Rat, male and female): > 2,5 mg/l  
Exposure time: 6 h  
Test atmosphere: dust/mist  
Remarks: no mortality

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2025
1.4	08.04.2025	50001215	Date of first issue: 18.09.2020

---

Acute dermal toxicity : LD50 (Mouse, male and female): > 3.500 mg/kg

### **Skin corrosion/irritation**

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

#### **Product:**

Remarks : No data available

#### **Components:**

##### **manganese carbonate:**

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation

##### **dicopper oxide:**

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation

##### **ethanediol:**

Species	: Rabbit
Result	: No skin irritation

### **Serious eye damage/eye irritation**

Causes serious eye damage.

#### **Product:**

Remarks : No data available

#### **Components:**

##### **manganese carbonate:**

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: No eye irritation

##### **dicopper oxide:**

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: Irreversible effects on the eye

##### **ethanediol:**

Species	: Rabbit
Result	: No eye irritation

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2025
1.4	08.04.2025	50001215	Date of first issue: 18.09.2020

---

### Respiratory or skin sensitisation

#### Skin sensitisation

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

#### Respiratory sensitisation

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

#### Product:

Remarks : No data available

#### Components:

##### manganese carbonate:

Test Type : Local lymph node test  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : Does not cause skin sensitisation.  
Remarks : Based on data from similar materials

##### dicopper oxide:

Test Type : Maximisation Test  
Exposure routes : Intradermal  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitisation.

##### ethanediol:

Test Type : Maximisation Test  
Species : Guinea pig  
Result : Does not cause skin sensitisation.

### Germ cell mutagenicity

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

#### Components:

##### manganese carbonate:

Genotoxicity in vitro : Test Type: reverse mutation assay  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

---

Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse (female)  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### **dicopper oxide:**

Genotoxicity in vitro : Test Type: reverse mutation assay  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse (male and female)  
Application Route: Oral  
Result: negative

Test Type: unscheduled DNA synthesis assay  
Species: Rat (male)  
Application Route: Oral  
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### **ethanediol:**

Genotoxicity in vitro : Test Type: reverse mutation assay  
Method: OPPTS 870.5100  
Result: negative

Genotoxicity in vivo : Test Type: dominant lethal test  
Species: Rat  
Application Route: Oral  
Result: negative

### **Carcinogenicity**

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

### **Components:**

#### **ethanediol:**

Species : Mouse  
Application Route : Oral  
Exposure time : 24 month(s)  
Result : negative

MULTIPLE PRO  
Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

---

**Reproductive toxicity**

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

**Components:****manganese carbonate:**

- Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: inhalation (dust/mist/fume)  
Dose: 0, .005, .01, .02 mg/L  
General Toxicity - Parent: NOEL: 0,02 mg/l  
Method: OECD Test Guideline 416  
Result: negative  
Remarks: Based on data from similar materials
- Effects on foetal development : Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Duration of Single Treatment: 15 d  
General Toxicity Maternal: NOAEL: 0,025 mg/L  
Developmental Toxicity: LOAEL: 0,025 mg/L  
Embryo-foetal toxicity: NOAEL: 0,025 mg/L  
Method: OECD Test Guideline 414  
Result: negative  
Remarks: Based on data from similar materials
- Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

**dicopper oxide:**

- Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 1.53, 7.7, 15.2, 23.6mg/kg/bwd  
General Toxicity - Parent: LOAEL: 23,6 mg/kg bw/day  
General Toxicity F1: LOAEL: 23,6 mg/kg bw/day  
General Toxicity F2: LOAEL: 23,6 mg/kg bw/day  
Method: OECD Test Guideline 416  
Result: negative
- Effects on foetal development : Species: Rabbit, female  
Application Route: Oral  
Dose: 0, 6, 9, 18 mg Cu/mL  
Duration of Single Treatment: 28 d  
General Toxicity Maternal: LOAEL: 9 mg/kg bw/day  
Developmental Toxicity: LOAEL: 9 mg/kg bw/day  
Method: OECD Test Guideline 414  
Result: negative
- Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2025
1.4	08.04.2025	50001215	Date of first issue: 18.09.2020

---

### STOT - single exposure

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

#### Components:

##### **manganese carbonate:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

### STOT - repeated exposure

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

#### Components:

##### **dicopper oxide:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

##### **ethanediol:**

Exposure routes : Oral  
Target Organs : Kidney  
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

### Repeated dose toxicity

#### Components:

##### **manganese carbonate:**

Species : Rabbit, male  
LOAEC : 0,0039 mg/l  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 4 - 6 weeks  
Dose : 0, .001, .0039 mg/L  
Remarks : Based on data from similar materials

##### **dicopper oxide:**

Species : Mouse, male and female  
NOAEL : 1000 ppm  
LOAEL : 2000 ppm  
Application Route : Oral  
Exposure time : 92d  
Dose : 0,1000,2000,4000,8000,16000 ppm  
Method : Regulation (EC) No. 440/2008, Annex, B.26

Species : Rat, male and female  
NOAEL : 1000 ppm  
LOAEL : 2000 ppm  
Application Route : Oral  
Exposure time : 92d

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

Dose : 0, 500, 1000, 2000, 4000, 8000 ppm  
Method : Regulation (EC) No. 440/2008, Annex, B.26

Species : Rat, male and female  
NOAEL : > 0,002 mg/l  
Application Route : inhalation (dust/mist/fume)  
Test atmosphere : dust/mist  
Exposure time : 28d  
Dose : 0.2, 0.4, 0.8, 2.0 mg/m<sup>3</sup>  
Method : OECD Test Guideline 412

### **ethanediol:**

Species : Rat  
NOAEL : 150 mg/kg  
Application Route : Oral  
Exposure time : 12 Months

Species : Dog  
NOAEL : > 2.200 - < 4.400 mg/kg  
Application Route : Dermal  
Exposure time : 4 Weeks  
Method : OECD Test Guideline 410

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

### **Further information**

#### **Product:**

Remarks : No data available

## **SECTION 12: Ecological information**

### **12.1 Toxicity**

#### **Components:**

##### **manganese carbonate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3,17 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Remarks: Based on data from similar materials

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 3,6 mg/l  
aquatic invertebrates  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): > 2,2  
plants  
mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,69



# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

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- mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to microorganisms : NOEC (activated sludge): 1.000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials
- EC50 (activated sludge): > 1.000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials
- Toxicity to fish (Chronic toxicity) : NOEC: 0,55 mg/l  
Exposure time: 65 d  
Species: *Salvelinus fontinalis* (Brook trout)  
Test Type: flow-through test  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1,3 mg/l  
Exposure time: 8 d  
Species: *Ceriodaphnia dubia* (water flea)  
Test Type: static test  
Remarks: Based on data from similar materials
- dicopper oxide:**
- Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 0,0384 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : LC50 (*Daphnia magna* (Water flea)): 0,0098 mg/l  
Exposure time: 48 h  
Test Type: static test
- Toxicity to algae/aquatic plants : EC50 (*Raphidocelis subcapitata* (freshwater green alga)): 0,032 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- NOEC (*Phaeodactylum tricornutum*): 0,0029 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- M-Factor (Acute aquatic toxicity) : 100
- Toxicity to microorganisms : NOEC (activated sludge): 0,23 - 0,45 mg/l  
Exposure time: 30 d  
Test Type: Respiration inhibition

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

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Toxicity to fish (Chronic toxicity) : NOEC: 0,0022 mg/l  
Exposure time: 60 d  
Species: Oncorhynchus mykiss (rainbow trout)  
Test Type: flow-through test  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,004 mg/l  
Exposure time: 7 d  
Species: Ceriodaphnia dubia (water flea)  
Test Type: semi-static test  
Remarks: Based on data from similar materials

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to terrestrial organisms : LD50: 1.400 mg/kg  
Exposure time: 14 d  
Species: Colinus virginianus (Bobwhite quail)

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

### ethanediol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 72.860 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : IC50 (Pseudokirchneriella subcapitata (green algae)): 10.940 mg/l  
Exposure time: 96 h

Toxicity to microorganisms : (activated sludge): > 1.995 mg/l  
Exposure time: 30 min  
Method: ISO 8192

Toxicity to fish (Chronic toxicity) : 1.500 mg/l  
Exposure time: 28 d  
Species: Menidia peninsulae (tidewater silverside)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 33.911 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

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### 12.2 Persistence and degradability

#### Components:

##### **ethanediol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 90 - 100 %  
Exposure time: 10 d  
Method: OECD Test Guideline 301A

### 12.3 Bioaccumulative potential

#### Components:

##### **dicopper oxide:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

##### **ethanediol:**

Partition coefficient: n-octanol/water : log Pow: -1,36

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

#### Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

### SECTION 14: Transport information

#### 14.1 UN number

ADR	: UN 3082
IMDG	: UN 3082
IATA	: UN 3082

#### 14.2 UN proper shipping name

ADR	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dicopper oxide)
IMDG	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dicopper oxide)
IATA	: Environmentally hazardous substance, liquid, n.o.s. (Dicopper oxide)

#### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 9	
IMDG	: 9	
IATA	: 9	

#### 14.4 Packing group

<b>ADR</b>	
Packing group	: III
Classification Code	: M6
Hazard Identification Number	: 90
Labels	: 9
Tunnel restriction code	: (-)
<b>IMDG</b>	
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
<b>IATA (Cargo)</b>	
Packing instruction (cargo aircraft)	: 964

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version 1.4	Revision Date: 08.04.2025	SDS Number: 50001215	Date of last issue: 04.04.2025 Date of first issue: 18.09.2020
----------------	------------------------------	-------------------------	---

Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

### **IATA (Passenger)**

Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

### **14.5 Environmental hazards**

#### **ADR**

Environmentally hazardous : yes

#### **IMDG**

Marine pollutant : yes

#### **IATA (Passenger)**

Environmentally hazardous : yes

#### **IATA (Cargo)**

Environmentally hazardous : yes

### **14.6 Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable for product as supplied.

## **SECTION 15: Regulatory information**

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

#### **The components of this product are reported in the following inventories:**

TCSI : Not in compliance with the inventory  
TSCA : Product contains substance(s) not listed on TSCA inventory.  
AIIIC : Not in compliance with the inventory  
ENCS : Not in compliance with the inventory  
ISHL : Not in compliance with the inventory  
KECI : Not in compliance with the inventory

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2025
1.4	08.04.2025	50001215	Date of first issue: 18.09.2020

PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
TECI	: Not in compliance with the inventory

### 15.2 Chemical safety assessment

A chemical safety assessment is not required for this product (mixture).

## SECTION 16: Other information

### Full text of H-Statements

H302	: Harmful if swallowed.
H318	: Causes serious eye damage.
H332	: Harmful if inhaled.
H373	: May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.

### Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
STOT RE	: Specific target organ toxicity - repeated exposure
2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2017/164/EU	: Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
UA OEL	: Ukraine OEL - Order on Approval of the Hygienic Regulations of Chemicals in the Air of the Working Zone
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
2017/164/EU / TWA	: Limit Value - eight hours
UA OEL / MAC	: Maximum allowable concentration

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - Interna-

# SAFETY DATA SHEET



## MULTIPLE PRO Spektrum Universal

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2025
1.4	08.04.2025	50001215	Date of first issue: 18.09.2020

tional Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Other information :

#### Classification of the mixture:

Eye Dam. 1	H318
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

#### Classification procedure:

Calculation method
Calculation method
Calculation method

### Disclaimer

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