

# SAFETY DATA SHEET

## RADISTART MAX

This safety data sheet complies with the requirements of:  
Regulation (EC) No. 453/2010 and Regulation (EC) No. 1272/2008



SDS # : NP-0194-A  
Revision date: 2018-07-31  
Format: EU  
Version 1.02

### Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Code(s) NP-0194-A  
Product Name RADISTART MAX

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

Recommended Use: A fertilizer with micronutrients for use in agriculture and horticulture  
Restrictions on use Use as recommended by the label.

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

Supplier FMC Agro Limited  
Rectors Lane  
Pentre  
Flintshire  
CH5 2DH  
United Kingdom  
Tel: + 44 (0) 1244 537370  
E-mail: fmc.agro.uk@fmc.com

For further information, please contact:

Contact point Tel: +44(0)1244 537370  
Email: fmc.agro.uk@fmc.com

#### 1.4. Emergency telephone number

Emergency telephone Tel: +44(0)1244 537370 (Office hours only)

### Section 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture Regulation (EC) No 1272/2008

Serious eye damage/eye irritation	Category 1 (H318)
Chronic aquatic toxicity	Category 2 (H411)

#### 2.2. Label elements

Hazard pictograms



**Signal Word**

Danger

**Hazard Statements**

H318 - Causes serious eye damage

H411 - Toxic to aquatic life with long lasting effects

**Precautionary Statements**

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

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

P501: Dispose of contents/container as hazardous waste.

**2.3. Other hazards**

This product is not identified as a PBT/vPvB substance.

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances**

The product is a mixture, not a substance.

**3.2 Mixture containing the following hazardous ingredients:**

Chemical name	EC-No	CAS-No	Weight percent	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Copper sulfate	231-793-3	7758-98-7	0.1 - 1	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119520566-40-XXXX
Zinc sulfate	231-793-3	7733-02-0	1 - 15	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119474684-27-XXXX

**Additional Information**

For the full text of the H-, R- and EUH- phrases mentioned in this Section, see Section 16.

### Section 4: FIRST AID MEASURES

**4.1. Description of first aid measures****Eye Contact**

Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Transfer to hospital for specialist examination.

**Skin Contact**

Wash off immediately with soap and plenty of water.

**Inhalation**

Remove person from exposure ensuring one's own safety while doing so.

**Ingestion**

Rinse mouth. Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.

**4.2. Most important symptoms and effects, both acute and delayed****Most important symptoms and effects, both acute and delayed**

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

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

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

Eye bathing equipment should be available on the premises.

### **Section 5: FIREFIGHTING MEASURES**

#### **5.1. Extinguishing media**

##### **Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

##### **Unsuitable extinguishing media**

No information available

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

Toxic fumes may be released in fire situations.

#### **5.3. Advice for firefighters**

As in any fire, wear self-contained breathing apparatus and full protective gear. Contaminated fire extinguishing water should not be discharged into drains, if preventable.

### **Section 6: ACCIDENTAL RELEASE MEASURES**

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

##### **Personal Precautions**

Do not attempt to take action without suitable protective clothing. For personal protection see section 8. Stop leak if you can do it without risk. In case of spill, avoid contact. Isolate area and keep out animals and unprotected persons. Keep people away from and upwind of spill/leak.

For further clean-up instructions, call Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

##### **For emergency responders**

Use personal protection recommended in Section 8.

#### **6.2. Environmental precautions**

Do not discharge into drains or rivers. Contain the spillage using bunding. Accidental release into water courses must be alerted to the appropriate regulatory body.

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

##### **Methods for Containment**

Surface drains within close vicinity of the spill should be covered. Cover powder spill with plastic sheet or tarp to minimise spreading and keep powder dry.

##### **Methods for cleaning up**

Small spills should be immediately swept up or vacuumed using equipment with high efficiency final filter. Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Transfer to a closable, labeled salvage container for disposal by an appropriate method. Refer to section 13 of SDS for suitable method of disposal.

#### **6.4. Reference to other sections**

See section 8 for more information. See section 13 for more information.

### **Section 7: HANDLING AND STORAGE**

**7.1. Precautions for safe handling****Handling**

Use only in area provided with appropriate exhaust ventilation. Avoid contact with skin, eyes and clothing. Avoid dust formation.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities****Storage**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Avoid contact with water or humidity. Keep away from direct sunlight. Keep out of reach of children and animals. Keep away from food, drink and animal feedingstuffs.

**7.3. Specific end use(s)****Specific Use(s)**

No data available.

**Risk Management Methods (RMM)**

The information required is contained in this Safety Data Sheet.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1. Control parameters**

Chemical name	European Union	The United Kingdom	France	Spain	Germany
Copper sulfate 7758-98-7	-	1 mg/mg <sup>3</sup> (8hr TWA) 2 mg/m <sup>3</sup> (15 min. STEL) (respirable dust)	-	-	-
Chemical name	Italy	Portugal	The Netherlands	Finland	Denmark
Copper sulfate 7758-98-7	-	-	-	TWA 0.02 mg/m <sup>3</sup>	-

**Derived No Effect Level (DNEL)** No information available.

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls**

**Engineering measures** Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

**Eye/Face Protection** Safety glasses with side-shields. Provide emergency on-site eyewash.

**Hand Protection** Protective gloves. Impervious butyl rubber gloves. Wear chemical protective gloves made of materials such as nitrile or neoprene.

**Skin and Body Protection** Wear protective gloves/clothing.

**Respiratory Protection** Respiratory protective device with particle filter.

**Environmental exposure controls** Refer to specific Member State legislation for requirements under Community environmental legislation.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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

**Physical State** Solid

**Appearance** No information available

Odour	Ammoniacal
Colour	Brown
Odour threshold	No information available
pH	No information available
Melting point/freezing point	190 °C
Boiling point/boiling range	No information available
Flash point	No information available
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit	No information available
Vapour pressure	No information available
Vapour density	No information available
Specific gravity	0.85 - 0.95
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidising properties	No information available

## 9.2. Other information

Softening point	No information available
Molecular weight	No information available
VOC content (%)	No information available
Density	No information available
Bulk density	No information available
K <sub>st</sub>	No information available

## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None under normal use conditions

### 10.2. Chemical stability

Stable under recommended storage conditions.

#### Explosion data

**Sensitivity to Mechanical Impact** No information available.

**Sensitivity to Static Discharge** No information available.

### 10.3. Possibility of hazardous reactions

#### Hazardous polymerisation

Hazardous polymerization does not occur.

#### Hazardous reactions

None under normal processing. Decomposition may occur on exposure to conditions or materials listed below.

### 10.4. Conditions to avoid

Heat.

### 10.5. Incompatible materials

Strong oxidising agents, Strong acids, Strong bases.

**10.6. Hazardous decomposition products**

May emit toxic fumes under fire conditions.

## Section 11: TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects****Acute toxicity****Product Information**

**LD50 Oral** > 2000 mg/kg (rat) (Calculated Estimated Acute Toxicity - EAT)

Chemical name	LD50 Oral	LD50 Dermal	Inhalation LC50
Copper sulfate	= 300 mg/kg ( Rat )	= 1000 mg/kg ( Rabbit )	
Zinc sulfate	1710 mg/kg ( Rat )	>2000mg/kg (Rat)	

**Skin corrosion/irritation** No information available.  
**Serious eye damage/eye irritation** No information available.  
**Sensitisation** No information available.  
**Mutagenicity** No information available.  
**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.  
**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.

**Symptoms**

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

**Aspiration hazard**

No information available.

## Section 12: ECOLOGICAL INFORMATION

**12.1. Toxicity****Ecotoxicity**

ALGAE (*Pseudokirchneriella subcapitata*): 72H IC50 = 4.98 (calculated) mg/L  
DAPHNID (*Daphnia magna*): 48H EC50 = 4.30 (calculated) mg/L  
RAINBOW TROUT (*Oncorhynchus mykiss*): 96H LC50 = 3.56 (calculated) mg/L

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Copper sulfate	-	96 h LC50: = 0.1 mg/L ( <i>Oncorhynchus mykiss</i> )	48 h EC50: 0.0058 - 0.0073 mg/L ( <i>Daphnia magna</i> ) Static
Zinc sulfate	72 h EC50: = 0.056 mg/L ( <i>Pseudokirchneriella subcapitata</i> ) static 72 h EC50: = 64.8 mg/L	96 h LC50: = 0.162 mg/L ( <i>Oncorhynchus mykiss</i> ) flow-through 96 h LC50: 0.03 - 0.05	48 h EC50: = 0.75 mg/L ( <i>Daphnia magna</i> ) 48 h EC50: 0.538 - 0.908 mg/L ( <i>Daphnia magna</i> ) Static

	(Chlorella vulgaris) 96 h EC50: = 2.4 mg/L (Chlorella vulgaris)	mg/L (Oncorhynchus mykiss) semi-static 96 h LC50: 0.34 - 0.93 mg/L (Oncorhynchus mykiss) static 96 h LC50: 0.23 - 0.48 mg/L (Pimephales promelas) 96 h LC50: 49.23 - 64.16 mg/L (Poecilia reticulata) semi-static 96 h LC50: 16.85 - 27.18 mg/L (Cyprinus carpio) static 96 h LC50: 3 - 4.6 mg/L (Lepomis macrochirus) flow-through 96 h LC50: = 0.63 mg/L (Poecilia reticulata) 96 h LC50: 0.48 - 1.72 mg/L (Poecilia reticulata) static 96 h LC50: = 0.06 mg/L (Pimephales promelas) static 96 h LC50: 3.55 - 6.32 mg/L (Lepomis macrochirus) static 96 h LC50: 0.218 - 0.42 mg/L (Pimephales promelas) flow-through 96 h LC50: 0.168 - 0.25 mg/L (Pimephales promelas) semi-static 96 h LC50: = 0.15 mg/L (Cyprinus carpio) semi-static	
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**12.2. Persistence and degradability**

No information available.

**12.3. Bioaccumulative potential**

No information available.

**12.4. Mobility in soil****Mobility in soil**

No information available.

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

This product is not identified as a PBT/vPvB substance.

**12.6. Other adverse effects**

Toxic to aquatic organisms.

## Section 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods****Waste from residues / unused products**

Transfer to a suitable container and arrange for collection by specialised disposal company. Do not contaminate ponds, waterways or ditches with chemical or used containers. Do not discharge to sewer systems.

**Contaminated Packaging**

Clean container with water. Dispose of rinse water in accordance with local and national guidelines. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**OTHER INFORMATION**

NOTE : The user's attention is drawn to the possible existence of specific European, national or local regulations regarding disposal.

## Section 14: TRANSPORT INFORMATION

**IMDG/IMO**

14.1 UN/ID no	UN3077
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC SULPHATE; COPPER SULPHATE)
14.3 Hazard class	9
14.4 Packing Group	III
14.5 Marine Pollutant	Yes
Environmental Hazard	Yes
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	The product is not transported in bulk tankers.

**RID**

14.1 UN/ID no	UN3077
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC SULPHATE; COPPER SULPHATE)
14.3 Hazard class	9
14.4 Packing Group	III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3

**ADR/RID**

14.1 UN/ID no	UN3077
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC SULPHATE; COPPER SULPHATE)
14.3 Hazard class	9
14.4 Packing Group	III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3

**ICAO/IATA**

14.1 UN/ID no	UN3077
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC SULPHATE; COPPER SULPHATE)
14.3 Hazard class	9
14.4 Packing Group	III
14.5 Environmental Hazard	Yes
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3

## Section 15: REGULATORY INFORMATION

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

#### European Union

##### Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)  
This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)



**Persistent Organic Pollutants**

Not Applicable

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009**

Not Applicable

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Copper sulfate 7758-98-7	X	X	X	X	X	X	X	X
Zinc sulfate 7733-02-0	X	X	X	X	X	X	X	X

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

<b>Section 16: OTHER INFORMATION</b>
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**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of R-phrases referred to under sections 2 and 3**

Not applicable

**Full text of H-Statements referred to under sections 2 and 3**

H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H319 - Causes serious eye irritation  
H410 - Very toxic to aquatic life with long lasting effects  
H411 - Toxic to aquatic life with long lasting effects

**Legend**

**ADR:** European Agreement concerning the International Carriage of Dangerous Goods by Road  
**CAS:** CAS (Chemical Abstracts Service)  
**Ceiling:** Maximum limit value:  
**DNEL:** Derived No Effect Level (DNEL)  
**EINECS:** EINECS (European Inventory of Existing Chemical Substances)  
**GHS:** Globally Harmonised System (GHS)  
**IATA:** International Air Transport Association (IATA)  
**ICAO:** International Civil Aviation Organization  
**IMDG:** International Maritime Dangerous Goods (IMDG)  
**LC50:** LC50 (lethal concentration)  
**LD50:** LD50 (lethal dose)  
**PBT:** Persistent, Bioaccumulative, and Toxic (PBT) Chemicals  
**RID:** Regulations Concerning the International Transport of Dangerous Goods by Rail  
**STEL:** Short term exposure limit  
**SVHC:** SVHC: Substances of Very High Concern for Authorisation:

**TWA:** time weighted average  
**vPvB:** very Persistent and very Bioaccumulative

**Revision date:** 2018-07-31

**Reason for revision:** Format Change.

Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

Prepared By

FMC Corporation

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**End of Safety Data Sheet**