

SAFETY DATA SHEET

MANGANESE / ZINC DF

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



SDS # : NP-0372-A
Revision date: 2020-01-29
Format: EU
Version 1

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

Product Code(s) NP-0372-A
Product Name MANGANESE / ZINC DF

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

Recommended Use: A soluble fertilizer 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 1244 537370
E-mail: fmc.agro.uk@fmc.com

For further information, please contact:

Contact point E-Mail: SDS-Info@fmc.com
Phone: +1 215-299-6000 (General Information)

1.4. Emergency telephone number

Emergency telephone Medical emergencies:

Austria: +43 1 406 43 43
Belgium: +32 70 245 245
Bulgaria: +359 2 9154 409
Cyprus: 1401
Czech Republic: +420 224 919 293, +420 224 915 402
Denmark: +45 82 12 12 12
France: +33 (0) 1 45 42 59 59
Finland: +358 9 471 977
Greece: 30 210 77 93 777
Hungary: +36 80 20 11 99
Ireland (Republic): +352 1 809 2166
Italy: +39 02 6610 1029
Lithuania: +370 523 62052, +370 687 53378
Luxembourg: +352 8002 5500
Netherlands: +31 30 274 88 88
Norway: +47 22 591300
Poland: +48 22 619 66 54, +48 22 619 08 97

Portugal: 800 250 250 (in Portugal only), +351 21 330 3284
Romania: +40 21318 3606
Slovakia: +421 2 54 77 4 166
Slovenia: +386 41 650 500
Spain: +34 91 562 04 20
Sweden: +46 08-331231112
Switzerland: 145
United Kingdom: 0870 600 6266 (in the UK only)
U.S.A. & Canada: +1 800 / 331-3148
All other countries: +1 651 / 632-6793 (Collect)

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)
Specific target organ toxicity — repeated exposure	Category 2 (H373)
Chronic aquatic toxicity	Category 2 (H411)

2.2. Label elements

Hazard pictograms



Signal Word
Danger

Hazard Statements

H318 - Causes serious eye damage

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

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements

P260 - Do not breathe dust

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 in accordance with local regulations.

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.

Chemical name	EC-No	CAS-No	Weight percent	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Manganese (II) sulfate	232-089-9	7785-87-7	>60	STOT RE 2 (H373) Aquatic Chronic 2 (H411)	01-2119456624-35-XXXX

Zinc sulfate	231-793-3	7733-02-0	10-30	Eye Dam. 1 (H318) Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119474684-27-XXXX
tetrasodium 2-[2-[bis(2-oxido-2-oxoethyl)amino]ethyl-(2-oxido-2-oxoethyl)amino]acetate	200-573-9	64-02-8	<1	Acute Tox. 4 (H302+332) Eye Dam. 1 (H318) STOT RE 2 (H373)	01-2119486762-27-XXXX

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Transfer to hospital for specialist examination.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
Inhalation	Remove person from exposure ensuring one's own safety while doing so. Consult a physician.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Consult a physician.

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

Most important symptoms and effects, both acute and delayed	<p>Skin contact: Irritation or pain may occur at the site of contact. There may be redness or whiteness of the skin in the area of exposure.</p> <p>Eye contact: There may be pain and redness. The eyes may water profusely. May cause permanent damage.</p> <p>Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur.</p> <p>Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.</p> <p>Delayed / immediate effects: Immediate effects can be expected after short-term exposure. Possible systemic effects via inhalation.</p>
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4.3. Indication of any immediate medical attention and special treatment needed

Indication of immediate medical attention and special treatment needed, if necessary	Treat symptomatically. It may be helpful to show this safety data sheet to physician.
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Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Using spraywater to cool the containers.

Unsuitable extinguishing media

Avoid heavy hose streams.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear. Wear protective clothing to prevent contact with skin and eyes.

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. Keep people away from and upwind of spill/leak. In case of spill, avoid contact. Isolate area and keep out animals and unprotected persons. Avoid dust formation.

For further clean-up instructions, call FMC 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

Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways. 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**

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Transfer spilled material to plastic bags with a shovel or dustpan and broom using non-sparking tools, if possible. Clean and neutralize spill area, tools and equipment with a solution of caustic soda and detergent or an appropriate alcohol (e.g., methanol, ethanol or isopropanol). Continue washing with a strong solution of soap and water, using the least amount possible. Absorb rinsate and add it to the waste collected. Repeat if necessary. Then place the bags in a plastic container. Waste container must be classified and labeled prior to disposal. Before re-entering the area where the spill occurred, ventilate closed spaces at least 15 minutes. For waste disposal, see indications in Section 13.

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**

Avoid contact by using personal protective equipment. Ensure adequate ventilation. Avoid dust formation in confined areas.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

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

Keep container tightly closed. Store above 5°C. Keep away from food, drink and animal feedingstuffs. Keep out of reach of children and animals.

Packageing material

Must only be kept in original packaging.

7.3. Specific end use(s)

Specific Use(s)

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

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	Italy	Portugal	The Netherlands	Finland	Denmark
Manganese (II) sulfate 7785-87-7	-	-	-	TWA 0.02 mg/m ³	-

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Personal protective equipment

Eye/Face Protection Tightly fitting safety goggles. Provide emergency on-site eyewash.

Hand Protection Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

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	Dry powder
Appearance	Powder
Odour	Odourless
Colour	Brown
Odour threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling point/boiling range	No information available
Flash point	No information available
Evaporation Rate	No information available
Flammability (solid, gas)	
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	No information available
Water solubility	Soluble in water
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 _{st}	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Stable under recommended storage 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 acids. Strong reducing agents. Strong oxidising agents.

10.6. Hazardous decomposition products

See Section 5 for more information.

Section 11: TOXICOLOGICAL INFORMATION

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

. No acute toxicity information is available for this product.

LD50 Oral > 2000 mg/kg (calculated)

Chemical name	LD50 Oral	LD50 Dermal	Inhalation LC50
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Manganese (II) sulfate	2150 mg/kg (rat)		>4.45 mg/L 4hr (rat)
Zinc sulfate	1538 mg/kg (rat)	>2000 mg/kg (rabbit)	
tetrasodium 2-[2-[bis(2-oxido-2-oxoethyl)amino]ethyl-(2-oxido-2-oxoethyl)amino]acetate	1780-2000 mg/kg (rat)		LOAEC = 0.03 mg/L

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 See classification in Section 2.
Symptoms Skin contact: Irritation or pain may occur at the site of contact. There may be redness or whiteness of the skin in the area of exposure.
Eye contact: There may be pain and redness. The eyes may water profusely. May cause permanent damage.
Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur.
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. Possible systemic effects via inhalation.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

The ecotoxicity of the product is measured as:

Daphnia magna, 48h LC50 = 12.7 mg/L (calculated)
Algae, 72h ErC50 = 13.6 mg/L (calculated)
Oncorhynchus mykiss, 96h LC50 = 4.13 mg/L (calculated)

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Manganese (II) sulfate	72h ErC50 = 54.5 mg/L 72h NOEC = 1 mg/L (Desmodesmus subspicatus)	96h LC50 = 8.71 mg/L (Oncorhynchus mykiss)	48 h LC50 = 26.9 mg/L (Daphnia magna)
Zinc sulfate	72h IC50 = 0.270 mg/L (Raphidocelis subcapitata)	8mo NOEC = 0.078 mg/L 96h LC50 = 0.500 mg/L (Pimephales promelas)	48h EC50 = 0.991 mg/L (Daphnia magna)
tetrasodium 2-[2-[bis(2-oxido-2-oxoethyl)amino]ethyl-(2-oxido-2-oxoethyl)amino]acetate	-	96h LC50 = 41 mg/L (Lepomis macrochirus) 35d NOEC =>25.7 mg/L (Brachydanio rerio)	48h EC50 = 140 mg/L (Daphnia magna)

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

Mobility in soil

Soluble in water.

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 Dispose of in accordance with local regulations.

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.(MANGANESE SULPHATE, ZINC SULPHATE)
14.3 Hazard class 9
14.4 Packing Group III
14.5 Marine Pollutant Not classified
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 This product is not transported in bulk containers.

RID

14.1 UN/ID no UN3077
14.2 Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(MANGANESE SULPHATE, ZINC 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. (MANGANESE SULPHATE, ZINC 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. (MANGANESE SULPHATE, ZINC 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/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Manganese (II) sulfate 7785-87-7	X	X	X	X	X	X	X	X
Zinc sulfate 7733-02-0	X	X	X	X	X	X	X	X
tetrasodium 2-[2-bis(2-oxido-2-oxoethyl) amino]ethyl-(2-oxido-2-oxo ethyl)amino]acetate 64-02-8	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.

Section 16: OTHER INFORMATION**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under sections 2 and 3**

H302 - Harmful if swallowed

H302 + H332 - Harmful if swallowed or if inhaled

H318 - Causes serious eye damage

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

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

Key literature references and sources for data

Data measured on the product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

Revision date: 2020-01-29**Reason for revision:** Format Change.**Training Advice** This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Prepared By

FMC Corporation

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End of Safety Data Sheet