
VALAGRO Safety Sheet
Date: May 30, 2018 Rev. 1.1
Product: MC CREAM
Code: 12464
Print Date: May 30, 2018

SAFETY SHEET

MC CREAM

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

1.1. Product identifier

Mixture identification:

Trade name: MC CREAM

Trade code: 12464

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

Recommended use:

Fertilizer

1.3. Details of the supplier of the safety data sheet

Produced and packed by:

VALAGRO Spa

Via Cagliari, 1 Zona Industriale

66041 Atessa (CH) ITALY

Tel. (+39) 08728811 Fax (+39) 0872881382

www.valagro.com

Distributed and guaranteed by:

Valagro USA Inc.

2020 Ponce de Leon Blvd, Ste. 1203

Coral Gables, FL 33134

Phone +1-786-230-1020 / +1-786-230-1019

Competent person responsible for the safety data sheet:

regulatory@valagro.com

1.4. Emergency telephone number:

Valagro USA Inc Phone +1-786-230-1020 / +1-786-230-1019

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to OSHA Hazard Communication Standard (29 CFR 1910.1200):

The product is not classified as dangerous

2.2. Label elements

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances

N.A.

3.2 Mixtures

VALAGRO Safety Sheet

Date: May 30, 2018 Rev. 1.1

Product: MC CREAM

Code: 12464

Print Date: May 30, 2018


Hazardous components:

3% - 5% manganese sulphate

Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9


 3.3/1 Eye Dam. 1 H318


 3.9/2 STOT RE 2 H373


 4.1/C2 Aquatic Chronic 2 H411

1% - 3% zinc sulphate

Index number: 030-006-00-9 CAS: 7733-02-0 EC: 231-793-3

 3.3/1 Eye Dam. 1 H318

 4.1/A1 Aquatic Acute 1 H400

 4.1/C1 Aquatic Chronic 1 H410

 3.1/4/Oral Acute Tox. 4 H302

For full text of H-statements: see SECTION 16

4. FIRST AID MEASURES

4.1 Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Never give anything by mouth to an unconscious person; If person is conscious rinse mouth with water and then give plenty of water to drink. Do not induce vomiting unless instructed to do so by medical personnel. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

4.2 Most important symptoms and effects, both acute and delayed

No data available for the mixture.

Possible symptoms that may occur:

Contact with eyes:

May cause eye irritation

Symptoms include pain and redness

Inhalation: unlikely under normal working conditions;

May cause irritation to the respiratory tract

Symptoms: cough

Ingestion:

The product dissolved in water, cause an acid reaction and if swallowed can cause irritation and burns of the mouth, throat and digestive tract.

VALAGRO Safety Sheet

Date: May 30, 2018 Rev. 1.1

Product: MC CREAM

Code: 12464

Print Date: May 30, 2018

Symptoms: abdominal pain, gastrointestinal disorders

Contact with skin:

May cause irritation to the skin

Symptoms: redness, itching, pain.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment:

In case of incident seek medical advice showing the safety data sheet

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2 Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke containing sulphur oxides

5.3 Advice for fire-fighters

Wear suitable personal protective equipment and self-contained breathing apparatus.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

Protective clothing for firefighters (full protective suit, helmet, gloves, boots) must conform to the standard EN469

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training

Wear protective clothes giving a total skin protection, gloves and safety glasses.

Keep away from the affected area people not involved in the emergency intervention.

Ensure adequate ventilation.

Alert the internal emergency team.

For emergency responders:

Wear protective clothes giving a total skin protection, latex gloves and safety glasses.

See protective measures under point 7 and 8.

Remove people to safety.

6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it in landfill approved;

If possible, collect in clean plastic containers labeled and reuse as fertilizer.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, soil, sand.

6.3. Methods and material for containment and cleaning up

Wash with plenty of water, contain the spill with absorbent material

Collect the product for example using shovel and broom

6.4. Reference to other sections

See also section 8 and 13

VALAGRO Safety Sheet
 Date: May 30, 2018 Rev. 1.1
 Product: MC CREAM
 Code: 12464
 Print Date: May 30, 2018

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

- Avoid contact with skin and eyes, inhalation of vapours and mists.
- Don't use empty container before they have been cleaned.
- Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
- Contaminated clothing should be changed before entering eating areas.
- Do not eat or drink while working.
- See also section 8 for recommended protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

- Keep in original containers tightly closed in a well-ventilated place far from heat source
- Keep away from food, drink and feed.
- Incompatible materials:
Alkaline and acid substances; oxidants and reducing substances
- Instructions as regards storage premises:
Adequately ventilated premises.

7.3 Specific end use(s)

- None in particular

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

- manganese sulphate - Index: 025-003-00-4, CAS: 7785-87-7, EC No: 232-089-9

Exposure limit Manganese (Mn) TWA 0.2 mg/m³ inorganic compounds

Critical effect: central nervous system

Workers:

DNEL skin = 0.00414 mg / kg / day

DNEL inhalation = 0.2 mg / kg / day

Population:

DNEL skin = 0.0021 mg / kg / day

DNEL inhalation = 0.043 mg / m³

Environment:

PNEC water (fresh water) = 0.0128 mg / l

PNEC water (sea water) = 0.0004 mg / l

PNEC water (intermittent emissions) = 0.03 mg / l

PNEC STP = 56 mg / l

PNEC sediment (fresh water) = 0.0114 mg / kg dw sediment

PNEC sediment (sea water) = 0.00114 mg / kg dw sediment

PNEC soil = 25.1 mg / kg soil dw

- zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3

soluble zinc compounds

Country/organisation	8 hour-TWA mg/m ³	15 min-STEL mg/m ³	References
USA	1	2	ACGIH (1991)
The Netherlands	1		SZW (1997)
UK	1	2 ^{a)}	HSE (1998)

VALAGRO Safety Sheet
 Date: May 30, 2018 Rev. 1.1
 Product: MC CREAM
 Code: 12464
 Print Date: May 30, 2018

Sweden	1 ^{b)}		National Board of Occupational Safety and Health, Sweden (1993)
Denmark	0.5		Arbejdstilsynet, 1992

a) This value is a 10 minutes-STEL

b) This TWA is determined for dust

DNELs and PNECs

DNELs

• Oral

- DNEL_{oral soluble Zn} = 50 mg Zn/day (i.e., 0.83 mg Zn/kg bw/day);
- DNEL_{oral insoluble Zn} = 50 mg Zn/day (i.e., 0.83 mg Zn/kg bw/day);

• Dermal

- DNEL_{dermal soluble Zn} = 500 mg Zn/day (i.e., 8.3 mg Zn/kg bw/day);
- DNEL_{dermal insoluble Zn} = 5000 mg Zn/day (i.e., 83 mg Zn/kg bw/day);

• Inhalation - Worker

- DNEL_{inhal soluble Zn (worker)} = 1 mg Zn/m³;
- DNEL_{inhal insoluble Zn (worker)} = 5 mg Zn/m³;

• Inhalation - Consumer

- DNEL_{inhal soluble Zn (consumer)} = 1.3 mg Zn/m³;
- DNEL_{inhal insoluble Zn (consumer)} = 2.5 mg Zn/m³;

PNECs derived for the zinc ion

Compartment (Environment)	PNEC value for Zn ion
Freshwater	20.6* µg/L
Saltwater	6.1* µg/L
STP	52 µg/L
Freshwater sediment	117.8* mg/kg sediment d.w. A generic bioavailability factor of 0.5 is applied by default: PNEC _{bioav} : 235.6 mg/kg sediment d.w.
Saltwater sediment	56.5* mg/kg sediment d.w. A generic bioavailability factor of 0.5 is applied by default: PNEC _{bioav} : 113 mg/kg sediment d.w.
Soil	35.6* mg/kg soil d.w. A generic bioavailability/ageing factor of 3 is applied by default: PNEC _{bioav} : 106.8 mg/kg soil d.w.
Oral	No potential for bioaccumulation

*added value

8.2. Exposure controls

VALAGRO Safety Sheet

Date: May 30, 2018 Rev. 1.1

Product: MC CREAM

Code: 12464

Print Date: May 30, 2018

Eye protection:

Use close fitting safety goggles according to the standard EN 166, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin

Protection for hands:

Use protective gloves according to EN 374 that provides comprehensive protection, e.g. NBR, P.V.C., neoprene or rubber.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

Environmental exposure controls:

Prevent the contamination of soil, surface water or groundwater

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance and colour:	green suspension
Odour:	odorless
Odour threshold:	N.A.
pH:	3.8
Melting point / freezing point:	N.A.
Initial boiling point and boiling range:	> 100°C
Solid/gas flammability:	not applicable
Upper/lower flammability or explosive limits:	not applicable
Vapour density:	N.A.
Flash point:	not applicable
Evaporation rate:	N.A.
Vapour pressure:	N.A.
Density:	1.1 Kg/dm ³ at 20°C
Solubility in water:	N.A.
Lipid solubility:	N.A.
Partition coefficient (n-octanol/water):	N.A.
Auto-ignition temperature:	not applicable
Decomposition temperature:	N.A.
Viscosity:	N.A.
Explosive properties:	not applicable
Oxidizing properties:	not applicable

9.2 Other information

Miscibility:	N.A.
Fat Solubility:	N.A.
Conductivity:	0.15
Substance Groups relevant properties	N.A.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

None

VALAGRO Safety Sheet

Date: May 30, 2018 Rev. 1.1

Product: MC CREAM

Code: 12464

Print Date: May 30, 2018

10.4 Conditions to avoid:

Avoid high temperatures

10.5 Incompatible materials:

Alkaline and acid substances; oxidants and reducing substances

10.6 Hazardous decomposition products:

None.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxicological information of the mixture:

Serious eye damage/irritation: non-irritant according to OECD test No 405

Toxicological information of the main substances in the mixture:

a) acute toxicity:

- manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
 LD50 Oral = 2150 mg/Kg Singh PP and Junnarkar AY (1991)
 LC50 Inhalation > 4.98 mg/l Griffiths, DR (2010)
 Skin: Manganese sulphate, absorption through skin is unlikely

- zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3

Product	Results	Species	Doses	Ref.
Zinc sulphate monohydrate hexahydrate heptahydrate	LD50 Oral	Rata	574 to 2,949 862 to 4,429 920 to 4,725 mg/kg	Litton Bionetics, 1974 Courtois et al., 1978
Zinc sulphate	LD50 Dermal	Rat	>2000 mg/kg	Van Huygevoort (1999a)

b) skin corrosion/irritation:

- manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
 in vivo test on rabbit OECD 404: Not irritating - Ref .Pooles (2010)
- zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
 not irritant (Van Huygevoort, 1999b;Lansdown, 1991)

c) serious eye damage/irritation:

- manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
 Test in vitro Reconstituted Corneal Epithelium: not irritant Ref. Warren N (2009b)
 Test in vivo: Irreversible eye damage (test based on one rabbit)
- zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
 Severe irritant (Van Huygevoort, 1999f)

d) respiratory or skin sensitisation:

- manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
 Skin: Not classified as a sensitizer
 Respiratory system: N.A.
- zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
 no sensitizing effect known (Van Huygevoort, 1999i, Ikarashi et al, 1992)

VALAGRO Safety Sheet

Date: May 30, 2018 Rev. 1.1

Product: MC CREAM

Code: 12464

Print Date: May 30, 2018

- e) germ cell mutagenicity:
 - manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
not mutagenic
 - zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
no mutagenic

- f) carcinogenicity:
 - manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
not classified as cancerogenic
 - zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
not classified as cancerogenic

- g) reproductive toxicity:
 - manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
not classified
 - zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
not classified

- h) STOT-single exposure:
 - manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
not classified
 - zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
not classified

- i) STOT-repeated exposure:
 - manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
STOT RE 2 May cause damage to the brain through prolonged or repeated exposure by
inhalation.
 - zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
not classified

- j) aspiration hazard:
 - manganese sulphate Index number: 025-003-00-4, CAS: 7785-87-7, EC: 232-089-9
STOT RE 2 May cause damage to the brain through prolonged or repeated exposure by
inhalation.
 - zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
not classified

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Adopt good working practices, so that the product is not released into the environment.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- manganese sulphate - Index: 025-003-00-4, CAS: 7785-87-7, EC No: 232-089-9
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aquatic compartment	Results	Substance	Reference
---------------------	---------	-----------	-----------

VALAGRO Safety Sheet
 Date: May 30, 2018 Rev. 1.1
 Product: MC CREAM
 Code: 12464
 Print Date: May 30, 2018

Short-term toxicity: <i>Oncorhynchus mykiss</i> Fresh water	LC50 (96 h): 14.5 mg/L Mn	Test material Manganese sulphate monohydrate	Davies PH (1980)
Long-term toxicity: <i>Oncorhynchus mykiss</i> , fresh water	NOEC (4 mo): 0.6 mg/L Mn	Test material (EC name): manganese sulphate	Davies P & Brinkman S (1994)
Short-term toxicity: <i>Daphnia magna</i> , fresh water	LC50 (48 h): 9.8 mg/L dissolved (meas. (arithm. mean)) based on: as Mn ²⁺	Test material (EC name): manganese chloride	Biesinger KE & Christensen GM (1972)
Long-term toxicity: <i>Daphnia magna</i> , salt water	LC50 (3 settimane): 5700 µg/L dissolved (meas. (arithm. mean)) based on: mortality	Test material (EC name): manganese chloride	Biesinger KE & Christensen GM (1972)
Algae: <i>Desmodesmus subspicatus</i> (algae, Growth Inhibition Test), fresh water	EC50 (72 h): 61 mg/L test mat. (nominal) based on: growth rate	Test material manganese sulphate monohydrate	Vryenhoef H (2010)

- zinc sulphate - Index: 030-006-00-9, CAS: 7733-02-0, EC No: 231-793-3
 Acute aquatic toxicity
 For zinc heptahydrate (a ZnSO₄·7H₂O/Zn molecular weight ratio of 4.4):
 - for pH <7: 1.82 mg Zn/l (based on 48 hr Ceriodaphnia dubia test cfr. above)
 - for pH >7-8.5: 0.60 mg Zn/l (based on 72 hr Selenastrum capricornutum test cfr. above)
- 12.2 Persistence and degradability
None
- 12.3 Bioaccumulative potential
The mixture doesn't contain any bioaccumulative component
- 12.4 Mobility in soil
The product is soluble and mobile in both terrestrial and aquatic compartments
- 12.5 Results of PBT and vPvB assessment
N.A.
- 12.6 Other adverse effects
None known

13. DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods
- Product: Recover if possible. Operate according to local and national.
 Contact local authorities who will provide guidance regarding the disposal of special waste.
 - Packaging: Dispose according to current regulations

VALAGRO Safety Sheet
 Date: May 30, 2018 Rev. 1.1
 Product: MC CREAM
 Code: 12464
 Print Date: May 30, 2018

14. TRANSPORT INFORMATION

- 14.1 UN number:
Not classified as dangerous in the meaning of transport regulations.
- 14.2 UN proper shipping name:
N.A.
- 14.3 Transport hazard class(es):
N.A.
- 14.4 Packing Group:
N.A.
- 14.5 Environmental hazards
Marine pollutant: No
- 14.6 Special Precautions for User
N.A.
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Environmental Pollutant:
No

15. REGULATORY INFORMATION

Hazard Communication Standard (HCS) Haz Com 2012
 OSHA, 29 CFR 1910.1200(g) and Appendix D. United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), third revised edition, United Nations, 2009. Hazard Communication Standard
 United Nations Recommendations on the Transport of Dangerous Goods.
 OSHA Permissible Exposure Limit
[29 CFR 1926.55 Appendix A](#)
 American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV)
 National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limit (REL)
 Chemical Abstracts Service (CAS) Registry Number
 Regulation (EC) n. 1272/2008 (CLP)

16. OTHER INFORMATION

- Text of phrases referred to under heading 3:
- 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.
 - H400 Very toxic to aquatic life.
 - H410 Very toxic to aquatic life with long lasting effects.
 - H302 Harmful if swallowed.

Hazard class and hazard category	Code	Description
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
STOT RE 2	3.9/2	Specific target organ toxicity - repeated exposure, Category 2
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2

VALAGRO Safety Sheet

Date: May 30, 2018 Rev. 1.1

Product: MC CREAM

Code: 12464

Print Date: May 30, 2018

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

N.A.:	No data available
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWATLV:	Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
WGK:	German Water Hazard Class.