

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version	Revision Date:	SDS Number:	Date of last issue: -
4.1	28.11.2024	50001053	Date of first issue: 01.03.2020

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

1.1 Product identifier

Product name LORATE®

Other means of identification

Product code 50001053

Unique Formula Identifier (UFI) : 6NYW-N2JW-DN4N-SQYE

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

Use of the Substance/Mixture : Herbicide

Recommended restrictions on use : Use as recommended by the label.
For professional users only.

1.3 Details of the supplier of the safety data sheet

Supplier Address FMC Agricultural Solutions A/S
Thyborønvej 78
DK-7673 Harbøre
Denmark

Telephone: +45 9690 9690
Telefax: +45 9690 9691
E-mail address: SDS-Info@fmc.com .

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:
Ireland: 353-19014670 (CHEMTREC)

Medical emergency:
Ireland (Republic): +352 1 809 2166

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Short-term (acute) aquatic hazard, Category 1

H400: Very toxic to aquatic life.

Long-term (chronic) aquatic hazard, Category 1

H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : P102 Keep out of reach of children.

Response:

P391 Collect spillage.

Disposal:

P501 Dispose of contents/container as hazardous waste in accordance with local regulations.

Additional Labelling

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

For special phrases (SP) and safety intervals, consult the label.

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.

Ecological information: 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.

Toxicological information: 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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1 Revision Date: 28.11.2024 SDS Number: 50001053 Date of last issue: -
Date of first issue: 01.03.2020

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
metsulfuron-methyl (ISO)	74223-64-6 613-139-00-2	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1,000 M-Factor (Chronic aquatic toxicity): 1,000	20
sodium carbonate	497-19-8 207-838-8 011-005-00-2	Eye Irrit. 2; H319	>= 1 - < 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.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.
- If inhaled : Remove to fresh air.
If unconscious, place in recovery position and seek medical advice.
If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.
- In case of skin contact : If on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and plenty of water.
Get medical attention if irritation develops and persists.
- In case of eye contact : Flush eyes with water as a precaution.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Do not induce vomiting without medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : To our knowledge, adverse effects in humans have not been reported.
The product is not expected to cause severe adverse effects to health, but adverse health effects cannot be excluded in case of massive exposure.
Generally, sulphonylurea herbicides cause lethargy, confusion, dizziness, seizures and coma on ingestion.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
Immediate medical attention is required in case of ingestion.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Dry chemical, CO₂, water spray or regular foam.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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.
Nitrogen oxides (NO_x)
Sulphur oxides
Carbon oxides
Hydrogen cyanide

5.3 Advice for firefighters

Special protective equipment for firefighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

- | | |
|--------------------------------|--|
| Specific extinguishing methods | : Use a water spray to cool fully closed containers. Remove undamaged containers from fire area if it is safe to do so. |
| Further information | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. 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. |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- | | |
|----------------------|---|
| Personal precautions | : Evacuate personnel to safe areas.
Do not touch or walk through the spilled material.
If it can be safely done, stop the leak.
Ensure adequate ventilation.
Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.
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 equipment may intervene. |
|----------------------|---|

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 | : Never return spills in original containers for re-use.
Pick up and transfer to properly labeled containers without creating dust.
Keep in suitable, closed containers for disposal. |
|-------------------------|---|

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- | | |
|-------------------------|---|
| Advice on safe handling | : Avoid contact with skin and eyes.
For personal protection see section 8. |
|-------------------------|---|

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures : General industrial hygiene practice. Do not breathe dust. Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

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. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions : The product is stable under normal conditions of warehouse storage. Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
sucrose	57-50-1	OELV - 8 hrs (TWA)	10 mg/m ³	IE OEL
		OELV - 15 min (STEL)	20 mg/m ³	IE OEL

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1 Revision Date: 28.11.2024 SDS Number: 50001053 Date of last issue: -
Date of first issue: 01.03.2020

Substance name	End Use	Exposure routes	Potential health effects	Value
sodium carbonate	Workers	Inhalation	Long-term local effects	10 mg/m3
	Consumers	Inhalation	Acute local effects	10 mg/m3
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	Workers	Inhalation	Long-term systemic effects	40.2 mg/m3
	Workers	Dermal	Long-term systemic effects	112 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	7.14 mg/m3
	Consumers	Oral	Long-term systemic effects	40 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	Fresh water	273 mg/l
	Intermittent use/release	1 mg/l
	Marine water	27.3 mg/l
	Intermittent use/release	0.1 mg/l
	Fresh water sediment	1030 mg/kg dry weight (d.w.)
	Marine sediment	103 mg/kg dry weight (d.w.)
	Soil	46.4 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
- Hand protection
Material : Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Skin and body protection : Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
- Filter type : Particulates type (P)
- Protective measures : Plan first aid action before beginning work with this product.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version	Revision Date:	SDS Number:	Date of last issue: -
4.1	28.11.2024	50001053	Date of first issue: 01.03.2020

Always have on hand a first-aid kit, together with proper instructions.

Wear suitable protective equipment.

When using do not eat, drink or smoke.

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	: solid
Form	: granules
Colour	: brown
Odour	: mild
Odour Threshold	: not determined
Melting point/ range	: Not available for this mixture.
Boiling point/boiling range	: Decomposition
Flammability	: Not highly flammable, may be ignitable
Upper explosion limit / Upper flammability limit	: not determined
Lower explosion limit / Lower flammability limit	: not determined
Flash point	: not determined
Auto-ignition temperature	: No data available
Decomposition temperature	: Not available for this mixture.
pH	: 9.2
Viscosity	Concentration: 10 g/l 1 %
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: not determined
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: Not available for this mixture.
Vapour pressure	: Not available for this mixture.
Relative density	: Not available for this mixture.
Density	: No data available
Bulk density	: 0.660 g/m ³
	Tap density
Relative vapour density	: not determined
Particle characteristics	
Particle size	: No data available

9.2 Other information

Explosives	: Not explosive
Oxidizing properties	: The product is not oxidizing.
Self-ignition	: not determined
Evaporation rate	: Not applicable
Miscibility with water	: dispersible

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Surface tension	:	Not applicable
Molecular weight	:	Not applicable

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	:	Dust may form explosive mixture in air.No decomposition if stored and applied as directed.
---------------------	---	--

10.4 Conditions to avoid

Conditions to avoid	:	Avoid extreme temperatures Avoid dust formation. Heat, flames and sparks. Heating of the mixture may evolve harmful and irritant vapours.
---------------------	---	--

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

Stable under recommended storage conditions.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: Fixed Dose Method
Acute inhalation toxicity	:	> 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: Information given is based on data on the components.
Acute dermal toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 402

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Components:

metsulfuron-methyl (ISO):

- Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: US EPA Test Guideline OPP 81-1
Assessment: The substance or mixture has no acute oral toxicity
- LD50 (Rat, female): > 5,000 mg/kg
Method: OECD Test Guideline 425
GLP: yes
Assessment: The substance or mixture has no acute oral toxicity
Remarks: no mortality
- Acute inhalation toxicity : LC50 (Rat, male and female): > 5.11 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Breathing difficulties
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality
- Acute dermal toxicity : LD50 (Rabbit, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402
Symptoms: Irritation
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: no mortality

sodium carbonate:

- Acute oral toxicity : LD50 (Rat, male and female): 2,800 mg/kg
- Acute inhalation toxicity : LC50 (Rat, male): 2.3 mg/l
Exposure time: 2 h
Test atmosphere: dust/mist
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Target Organs: Skin
Symptoms: Erythema

Skin corrosion/irritation

Not classified based on available information.

Product:

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version	Revision Date:	SDS Number:	Date of last issue: -
4.1	28.11.2024	50001053	Date of first issue: 01.03.2020

Components:

metsulfuron-methyl (ISO):

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	US EPA Test Guideline OPP 81-5
Result	:	No skin irritation

sodium carbonate:

Species	:	Rabbit
Exposure time	:	4 h
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

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

Components:

metsulfuron-methyl (ISO):

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

sodium carbonate:

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

Components:

metsulfuron-methyl (ISO):

Test Type	:	Maximisation Test
-----------	---	-------------------

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Exposure routes	: Skin contact
Species	: Guinea pig
Method	: US EPA Test Guideline OPPTS 870.2600
Result	: Not a skin sensitizer.

Germ cell mutagenicity

Not classified based on available information.

Product:

Germ cell mutagenicity- Assessment : Contains no ingredient listed as a mutagen

Components:

met sulfuron-methyl (ISO):

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Metabolic activation: Metabolic activation
Result: positive
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Result: negative

sodium carbonate:

Genotoxicity in vitro : Test Type: reverse mutation assay
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
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.

Carcinogenicity

Not classified based on available information.

Product:

Carcinogenicity - Assessment : Contains no ingredient listed as a carcinogen

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Components:

metsulfuron-methyl (ISO):

Species	: Rat, male and female
Exposure time	: 104 weeks
NOAEL	: 500 ppm
Result	: negative

Species	: Mouse, male and female
Exposure time	: 18 month(s)
NOAEL	: 5,000 ppm
Result	: negative

Reproductive toxicity

Not classified based on available information.

Product:

Reproductive toxicity - Assessment	: Contains no ingredient listed as toxic to reproduction
------------------------------------	--

Components:

metsulfuron-methyl (ISO):

Effects on fertility	: Test Type: Two-generation study Species: Rat, male and female Application Route: Oral Result: negative
----------------------	---

Effects on foetal development	: Test Type: Embryo-foetal development Species: Rabbit, female Application Route: Ingestion Symptoms: Maternal effects Result: negative
-------------------------------	---

	: Test Type: Embryo-foetal development Species: Rat, female Application Route: Ingestion Symptoms: Maternal effects Result: negative
--	--

sodium carbonate:

Effects on foetal development	: Species: Rat Application Route: Oral Dose: 2.45, 11.4, 52.9, 245 milligram per kilogram Duration of Single Treatment: 6 - 15 d General Toxicity Maternal: NOAEL: > 245 mg/kg body weight Teratogenicity: NOAEL: > 245 mg/kg body weight Result: negative
-------------------------------	--

Reproductive toxicity - Assessment	: Weight of evidence does not support classification for reproductive toxicity
------------------------------------	--

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

STOT - single exposure

Not classified based on available information.

Product:

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

STOT - repeated exposure

Not classified based on available information.

Product:

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

Components:

sodium carbonate:

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

Repeated dose toxicity

Components:

metsulfuron-methyl (ISO):

Species : Rat, male and female
NOEL : 1000 ppm
Application Route : Oral - feed
Exposure time : 90 days
Symptoms : Reduced body weight

sodium carbonate:

Species : Rat, male and female
NOAEL : > 0.01 mg/kg
Application Route : inhalation (dust/mist/fume)
Test atmosphere : dust/mist

Aspiration toxicity

Not classified based on available information.

Product:

The mixture does not have properties associated with aspiration hazard potential.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Assessment : 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.

Neurological effects

Components:

metsulfuron-methyl (ISO):

No neurotoxicity observed in animal studies

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): > 625 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 625 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.6 mg/l Exposure time: 72 h EC50 (Lemna gibba (duckweed)): 2.35 µg/l Exposure time: 14 d
Toxicity to terrestrial organisms	: LD50: > 100 µg/bee Exposure time: 48 h End point: Acute contact toxicity Species: Apis mellifera (bees) LD50: 114 µg/bee Exposure time: 48 h End point: Acute oral toxicity Species: Apis mellifera (bees)

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.
Remarks: Based on EU Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.
Remarks: Based on EU Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)

Components:

metsulfuron-methyl (ISO):

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 120 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

EC50 (Daphnia magna (Water flea)): 43.1 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Anabaena flos-aquae (cyanobacterium)): 65.7 µg/l
Exposure time: 96 h
Method: OPPTS 850.5400
GLP: yes

NOEC (Anabaena flos-aquae (cyanobacterium)): 45 µg/l
Exposure time: 96 h
Method: OPPTS 850.5400
GLP: yes

ErC50 (Selenastrum capricornutum (green algae)): 157 µg/l
Exposure time: 72 h
GLP: yes

NOEC (Selenastrum capricornutum (green algae)): 50 µg/l
Exposure time: 72 h
GLP: yes

M-Factor (Acute aquatic toxicity) : 1,000

Toxicity to fish (Chronic toxicity) : NOEC: 68 mg/l
Exposure time: 21 d
Species: Oncorhynchus mykiss (rainbow trout)

NOEC: 10 mg/l
End point: reproduction
Exposure time: 21 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 229

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 3.13 mg/l
End point: reproduction
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211

NOEC: 0.5 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1,000

Toxicity to soil dwelling organisms : NOEC: 6 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)

NOEC: 5.6 mg/kg
End point: reproduction
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222
GLP:yes

Method: OECD Test Guideline 216
Remarks: No significant adverse effect on nitrogen mineralization.

Toxicity to terrestrial organisms : LD50: > 50 µg/bee
Exposure time: 48 h
End point: Acute contact toxicity
Species: Apis mellifera (bees)
Method: OEPP/EPPO Test Guideline 170

LD50: > 50 µg/bee
Exposure time: 48 h
End point: Acute oral toxicity
Species: Apis mellifera (bees)
Method: OEPP/EPPO Test Guideline 170

LD50: > 2,510 mg/kg
Species: Anas platyrhynchos (Mallard duck)

NOEC: 1,000 mg/kg
End point: Reproduction Test
Species: Colinus virginianus

NOEC: 1,000 ppm
End point: Reproduction Test
Species: Anas platyrhynchos (Mallard duck)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

Method: OECD Test Guideline 206

sodium carbonate:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 300 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia (water flea)): 200 mg/l
Exposure time: 48 h
Test Type: semi-static test

12.2 Persistence and degradability

Product:

Biodegradability : Result: Not readily biodegradable.
Remarks: Estimation based on data obtained on active ingredient.
Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

metsulfuron-methyl (ISO):

Biodegradability : Result: Not readily biodegradable.
Remarks: Primary degradation half-lives vary with circumstances, from a few weeks to a few months in aerobic soil and water.

sodium carbonate:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate.
Estimation based on data obtained on active ingredient.

Components:

metsulfuron-methyl (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Exposure time: 28 d
Bioconcentration factor (BCF): < 1
Remarks: Does not bioaccumulate.

Partition coefficient: n- : Pow: 0.018 (25 °C)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

octanol/water

log Pow: -1.7 (25 °C)
pH: 7

sodium carbonate:

Bioaccumulation : Remarks: Does not bioaccumulate.

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 Endocrine disrupting properties

Product:

Assessment : 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.

12.7 Other adverse effects

Product:

Additional ecological information : No other ecological effects to be specially mentioned.
See product label for additional application instructions relating to environmental precautions.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	: Empty remaining contents. Do not re-use empty containers. Packaging that is not properly emptied must be disposed of as

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

the unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	: UN 3077
ADR	: UN 3077
RID	: UN 3077
IMDG	: UN 3077
IATA	: UN 3077

14.2 UN proper shipping name

ADN	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron-methyl)
ADR	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron-methyl)
RID	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron-methyl)
IMDG	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron-methyl)
IATA	: Environmentally hazardous substance, solid, n.o.s. (Metsulfuron-methyl)

14.3 Transport hazard class(es)

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

14.4 Packing group

ADN	
Packing group	: III
Classification Code	: M7
Hazard Identification Number	: 90
Labels	: 9

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

ADR

Packing group	: III
Classification Code	: M7
Hazard Identification Number	: 90
Labels	: 9
Tunnel restriction code	: (-)

RID

Packing group	: III
Classification Code	: M7
Hazard Identification Number	: 90
Labels	: 9

IMDG

Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft)	: 956
Packing instruction (LQ)	: Y956
Packing group	: III
Labels	: Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft)	: 956
Packing instruction (LQ)	: Y956
Packing group	: III
Labels	: Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous	: yes
---------------------------	-------

ADR

Environmentally hazardous	: yes
---------------------------	-------

RID

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. E1 ENVIRONMENTAL HAZARDS

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

TCSI : On the inventory, or in compliance with the inventory

TSCA : Product contains substance(s) not listed on TSCA inventory.

AIIC : Not in compliance with the inventory

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

MEM TECHNICAL (MANATI)

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version	Revision Date:	SDS Number:	Date of last issue: -
4.1	28.11.2024	50001053	Date of first issue: 01.03.2020

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

H319	: Causes serious eye irritation.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
IE OEL	: Ireland. List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2
IE OEL / OELV - 8 hrs (TWA)	: Occupational exposure limit value (8-hour reference period)
IE OEL / OELV - 15 min (STEL)	: Occupational exposure limit value (15-minute reference period)

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 - International 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;

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



LORATE®

Version 4.1	Revision Date: 28.11.2024	SDS Number: 50001053	Date of last issue: - Date of first issue: 01.03.2020
----------------	------------------------------	-------------------------	--

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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Based on product data or assessment
Based on product data or assessment

Disclaimer

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. You can contact FMC Corporation to ensure that this document is the most current available from FMC Corporation. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. The user is responsible for determining whether the product is fit for a particular purpose and suitable for the user's conditions and methods of use. Since the conditions and methods of use are beyond the control of FMC Corporation, FMC Corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

Prepared by

FMC Corporation

FMC and the FMC Logo are trademarks of FMC Corporation and/or an affiliate.

© 2021-2024 FMC Corporation. All Rights Reserved.

IE / 6N