



LORATE®

Version 5.0

Revision Date 08.08.2013

Ref. 130000027902

This Safety Data Sheet adheres to the standards and regulatory requirements of the Republic of Ireland and may not meet the regulatory requirements of other countries.

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

1.1. Product identifier

Product name : LORATE®
Types : Herbicide
Synonyms : C11673129
DPX-T6376 20SX

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

Use of the Substance/Mixture : Herbicide

1.3. Details of the supplier of the safety data sheet

Company : Du Pont (UK) Limited
Wedgwood Way
Stevenage, Herts. SG1 4QN
United Kingdom
Telephone : +44 (0) 1438 734 000
E-mail address : sds-support@che.dupont.com

1.4. Emergency telephone number

Emergency telephone number : +44 (0) 8456 006 640

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Acute aquatic toxicity, Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity, Category 1	H410: Very toxic to aquatic life with long lasting effects.
Dangerous for the environment	R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2. Label elements



LORATE®

Version 5.0
Revision Date 08.08.2013

Ref. 130000027902



Warning

H410 Very toxic to aquatic life with long lasting effects.

Special labelling of certain substances and mixtures EUH401: To avoid risks to human health and the environment, comply with the instructions for use.,

P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1. Substances

not applicable

3.2. Mixtures

Registration number	Classification according to Directive 67/548/EEC	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration
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Metsulfuron methyl (CAS-No.74223-64-6)

	N;R50/53	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	20 %
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Sodium carbonate (CAS-No.497-19-8) (EC-No.207-838-8)

01-2119485498-19	Xi;R36	Eye Irrit. 2; H319	>= 5 - < 10 %
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Lignosulfonic acid, sodium salt, sulfomethylated (CAS-No.68512-34-5)

	Xi;R36	Eye Irrit. 2; H319	>= 5 - < 10 %
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The above products are REACH compliant; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.



LORATE®

Version 5.0

Revision Date 08.08.2013

Ref. 130000027902

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

SECTION 4: First aid measures

4.1. Description of first aid measures

- General advice : Never give anything by mouth to an unconscious person. For specialist advice physicians should contact the National Poisons Information Service: Tel. (01) 809 2911.
- Inhalation : Move to fresh air. Consult a physician after significant exposure. Artificial respiration and/or oxygen may be necessary.
- Skin contact : Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions see a physician. Wash contaminated clothing before re-use.
- Eye contact : If easy to do, remove contact lens, if worn. Hold eye open and rinse slowly and gently with water for 15-20 minutes. If eye irritation persists, consult a specialist.
- Ingestion : Obtain medical attention. DO NOT induce vomiting unless directed to do so by a physician or poison control center. If victim is conscious: Rinse mouth with water.

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

- Symptoms : No cases of human intoxication are known and the symptoms of experimental intoxication are not known.

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

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray, Foam, Dry chemical, Carbon dioxide (CO₂)
- Extinguishing media which shall not be used for safety reasons : High volume water jet, (contamination risk)

5.2. Special hazards arising from the substance or mixture

- Specific hazards during firefighting : Hazardous decomposition products formed under fire conditions. Carbon dioxide (CO₂) nitrogen oxides (NO_x)

5.3. Advice for firefighters

- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.



LORATE®

Version 5.0
Revision Date 08.08.2013

Ref. 130000027902

- Further information
- : Prevent fire extinguishing water from contaminating surface water or the ground water system. 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.
 - : (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers / tanks with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- Personal precautions
- : Control access to area. Keep people away from and upwind of spill/leak. Avoid dust formation. Avoid breathing dust. Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

- Environmental precautions
- : Prevent further leakage or spillage if safe to do so. Use appropriate container to avoid environmental contamination. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. If the spill area is porous, the contaminated material must be collected for subsequent treatment or disposal. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

- Methods for cleaning up
- : Clean-up methods - small spillage Sweep up or vacuum up spillage and collect in suitable container for disposal.
 - : Clean-up methods - large spillage Avoid dust formation. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).
 - : If spill area is on ground near valuable plants or trees, remove 5 cm of top soil after initial clean-up.
- Other information
- : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

6.4. Reference to other sections

For personal protection see section 8., For disposal instructions see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Advice on safe handling
- : Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.
- Use only according to our recommendations. Use only clean equipment. Avoid contact with skin, eyes and clothing. Do not breathe dust or spray mist. Wear



LORATE®

Version 5.0
Revision Date 08.08.2013

Ref. 130000027902

personal protective equipment. For personal protection see section 8. Prepare the working solution as given on the label(s) and/or the user instructions. Use prepared working solution as soon as possible - Do not store. Provide appropriate exhaust ventilation at places where dust is formed.

Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Avoid dust formation in confined areas. During processing, dust may form explosive mixture in air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a place accessible by authorized persons only. Store in original container. Keep in properly labelled containers. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

Advice on common storage : No special restrictions on storage with other products.

Other data : Stable under recommended storage conditions.

7.3. Specific end use(s)

Plant protection products subject to Regulation (EC) No 1107/2009.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

Components with workplace control parameters

Type Form of exposure	Control parameters	Update	Basis	Remarks
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Sucrose (CAS-No. 57-50-1)

TWA	10 mg/m3	2010	ELV (IE)	
STEL	20 mg/m3	2010	ELV (IE)	

8.2. Exposure controls

Engineering measures : Ensure adequate ventilation, especially in confined areas. Provide for appropriate exhaust ventilation and dust collection at machinery. Contains no substances with occupational exposure limit values.

Eye protection : Safety glasses with side-shields conforming to EN166

Hand protection : Material: Nitrile rubber
Glove thickness: 0.3 mm
Glove length: Gauntlets
Protection index: Class 6
Wearing time: > 480 min



LORATE®

Version 5.0
Revision Date 08.08.2013

Ref. 130000027902

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The suitability for a specific workplace should be discussed with the producers of the protective gloves. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. The exact break through time can be obtained from the protective glove producer and this has to be observed. Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Gauntlets shorter than 35 cm long shall be worn under the combination sleeve. Before removing gloves clean them with soap and water.

- Skin and body protection** : Manufacturing and processing work: Full protective clothing Type 5 (EN 13982-2) Mixer and loaders must wear: Full protective clothing Type 5 (EN 13982-2) Rubber apron Nitrile rubber boots (EN 13832-3 / EN ISO 20345). Spray application - outdoor: Tractor / sprayer with hood: No personal body protection normally required. Tractor / sprayer without hood: Low application (horticulture, field crops): Full protective clothing Type 4 (EN 14605) Nitrile rubber boots (EN 13832-3 / EN ISO 20345). Backpack / knapsack sprayer: Low application (horticulture, field crops): Full protective clothing Type 4 (EN 14605) Nitrile rubber boots (EN 13832-3 / EN ISO 20345). Mechanical automatized spray application in closed tunnel: No personal body protection normally required. To optimize the ergonomics it may be recommended to use cotton underwear when wearing some fabrics. Take advice from supplier.
Garment materials that are resistant to both water vapour and air will maximise wearing comfort. Materials should be robust to maintain the integrity and barrier in use.
The permeation resistance of the fabric must be verified independently of the « type » protection recommended, to ensure an appropriate performance level of the material adequate to the corresponding agent and type of exposure.
When exceptional circumstances would require an access to the treated area before the end of re-entry periods, wear full protective clothing Type 6 (EN 13034), nitrile rubber gloves class 2 (EN 374) and nitrile rubber boots (EN 13832-3 / EN ISO 20345). Rubber or plastic boots Full protective clothing Type 5 + 6 (EN ISO 13982-2 / EN 13034) Spray application - outdoor:
- Protective measures** : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated. Only protected handlers may be in the area during application.
- Hygiene measures** : Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. For environmental protection remove and wash all contaminated protective equipment before re-use. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Dispose of rinse water in accordance with local and national regulations. Wash hands before breaks and at the end of workday.
- Respiratory protection** : Manufacturing and processing work: Half mask with a particle filter FFP1



LORATE®

Version 5.0
Revision Date 08.08.2013

Ref. 130000027902

(EN149) Mixer and loaders must wear: Half mask with a particle filter FFP1
(EN149) Spray application - outdoor: Tractor / sprayer with hood: No personal respiratory protective equipment normally required. Tractor / sprayer without hood: Low application (horticulture, field crops): Half mask with a particle filter FFP1 (EN149) Backpack / knapsack sprayer: Low application (horticulture, field crops): Half mask with a particle filter FFP1 (EN149) Mechanical automatized spray application in closed tunnel: No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	: solid, granular
Colour	: brown
Odour	: mild
Odour Threshold	: not determined
pH	: 9.2 at 10 g/l
Melting point/range	: Not available for this mixture.
Boiling point/boiling range	: not applicable
Flash point	: not applicable
Flammability (solid, gas)	: Does not sustain combustion.
Thermal decomposition	: Not available for this mixture.
Auto-ignition temperature	: Not available for this mixture.
Oxidizing properties	: The product is not oxidizing.
Explosive properties	: Not explosive
Lower explosion limit/ lower flammability limit	: Not available for this mixture.
Upper explosion limit/ upper flammability limit	: Not available for this mixture.
Vapour pressure	: Not available for this mixture.
Relative density	: Not available for this mixture.
Bulk density	: 660 kg/m ³ , packed
Water solubility	: soluble
Partition coefficient: n-	: not applicable



LORATE®

Version 5.0

Revision Date 08.08.2013

Ref. 130000027902

octanol/water

Viscosity, dynamic : no data available

Relative vapour density : Not available for this mixture.

Evaporation rate : Not available for this mixture.

9.2. Other information

Phys.-chem./other information : No other data to be specially mentioned.

SECTION 10: Stability and reactivity

10.1. Reactivity : No hazards to be specially mentioned.

10.2. Chemical stability : The product is chemically stable under recommended conditions of storage, use and temperature.
:

10.3. Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use. Polymerization will not occur. No decomposition if stored and applied as directed.

10.4. Conditions to avoid : Processing temperature : > 140 °C Decomposes on heating. To avoid thermal decomposition, do not overheat. Under severe dusting conditions, this material may form explosive mixtures in air.

10.5. Incompatible materials : No materials to be especially mentioned.

10.6. Hazardous decomposition products : Sulphur oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD50 / rat : > 5,000 mg/kg
Method: Fixed Dose Method
(Data on the product itself) Information source: Internal study report

Acute inhalation toxicity

- Metsulfuron methyl
LC50 / 4 h rat : > 5.3 mg/l

Acute dermal toxicity

LD50 / rat : > 5,000 mg/kg
Method: OECD Test Guideline 402
(Data on the product itself) Information source: Internal study report



LORATE®

Version 5.0

Revision Date 08.08.2013

Ref. 130000027902

Skin irritation

rabbit

Result: No skin irritation

Method: OECD Test Guideline 404

(Data on the product itself) Information source: Internal study report

Eye irritation

rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

(Data on the product itself) Information source: Internal study report

Sensitisation

guinea pig Maximisation Test

Result: Animal test did not cause sensitization by skin contact.

Method: OECD Test Guideline 406

(Data on the product itself) Information source: Internal study report

Repeated dose toxicity

- Metsulfuron methyl

Oral rat

Exposure time: 90 d

Reduced body weight gain, Liver effects

Oral rat

Reduced body weight gain, Organ weight changes, Liver

Dermal rabbit

Skin irritation

Mutagenicity assessment

- Metsulfuron methyl

Did not show mutagenic effects in animal experiments. Did not cause genetic damage in cultured bacterial cells. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.

Carcinogenicity assessment

- Metsulfuron methyl

Did not show carcinogenic effects in animal experiments.

Toxicity to reproduction assessment

- Metsulfuron methyl

Animal testing did not show any effects on fertility.

Assessment teratogenicity

- Metsulfuron methyl

Animal testing showed no developmental toxicity.



LORATE®

Version 5.0

Revision Date 08.08.2013

Ref. 130000027902

STOT - single exposure–

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

STOT - repeated exposure

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

Aspiration hazard

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

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish

static test / LC50 / 96 h / *Oncorhynchus mykiss* (rainbow trout): > 625 mg/l

Method: OECD Test Guideline 203

(Data on the product itself) Information source: Internal study report

Toxicity to aquatic plants

ErC50 / 72 h / *Pseudokirchneriella subcapitata*: > 1.6 mg/l

Method: OECD Test Guideline 201

(Data on the product itself) Information source: Internal study report

EC50 / 14 d / *Lemna gibba* (duckweed): 0.00235 mg/l

Method: ASTM E 1415-91

(Data on the product itself) Information source: Internal study report

Toxicity to aquatic invertebrates

static test / EC50 / 48 h / *Daphnia magna* (Water flea): > 625 mg/l

Method: OECD Test Guideline 202

(Data on the product itself) Information source: Internal study report

Toxicity to other organisms

LD50 / 48 h / *Apis mellifera* (bees): 113.7 µg/b

Method: OECD Test Guideline 213

Oral (Data on the product itself) Information source: Internal study report

LD50 / 48 h / *Apis mellifera* (bees): > 100 µg/b

Method: OECD Test Guideline 214

Contact (Data on the product itself) Information source: Internal study report

Chronic toxicity to fish

- Metsulfuron methyl

NOEC / 21 h / *Oncorhynchus mykiss* (rainbow trout): 68 mg/l



LORATE®

Version 5.0
Revision Date 08.08.2013

Ref. 130000027902

Chronic toxicity to aquatic Invertebrates

- Metsulfuron methyl
NOEC / 21 h / Daphnia magna (Water flea): 100 mg/l

12.2. Persistence and degradability

Biodegradability

Not readily biodegradable. Estimation based on data obtained on active ingredient.

12.3. Bioaccumulative potential

Bioaccumulation

Does not bioaccumulate. Estimation based on data obtained on active ingredient.

12.4. Mobility in soil

Mobility in soil

The product is not expected to be mobile in soils.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). / This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

Additional ecological information

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

See product label for additional application instructions relating to environmental precautions.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Do not re-use empty containers.

SECTION 14: Transport information

ADR

14.1. UN number: 3077
14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron methyl)



LORATE®

Version 5.0

Revision Date 08.08.2013

Ref. 130000027902

- 14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards: Environmentally hazardous
14.6. Special precautions for user:
Tunnel restriction code: (E)

IATA_C

- 14.1. UN number: 3077
14.2. UN proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Metsulfuron methyl)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards : Environmentally hazardous
14.6. Special precautions for user:
DuPont internal recommendations and transport guidance: ICAO / IATA cargo aircraft only

IMDG

- 14.1. UN number: 3077
14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron methyl)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards : Marine pollutant
14.6. Special precautions for user:
no data available

- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

SECTION 15: Regulatory information

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

Other regulations : The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008. Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers. Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. Take note of Directive 96/82/EC on the control of major-accident hazards involving dangerous substances. Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values.

15.2. Chemical Safety Assessment

A Chemical Safety Assessment is not required for this/these products
The substance is registered as a plant protection product under Regulation (EC) No. 1107/2009.
Refer to the label for exposure assessment information.

SECTION 16: Other information

Text of R-phrases mentioned in Section 3

R36 Irritating to eyes.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



LORATE®

Version 5.0
Revision Date 08.08.2013

Ref. 130000027902

Full text of H-Statements referred to under section 3.

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

Other information professional use

Further information

Before use read DuPont's safety information., Take notice of the directions of use on the label.

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Significant change from previous version is denoted with a double bar.

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