

# SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by  
UK REACH Regulations SI 2019/758



## REFINE® MAX SX®

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

#### 1.1 Product identifier

**Product name** REFINE® MAX SX®

#### Other means of identification

**Product code** 50000022

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

Use of the Sub- : Herbicide  
stance/Mixture

Recommended restrictions : Use as recommended by the label.  
on use

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

##### Supplier Address

FMC Agro Limited  
Rectors Lane, Pentre  
Flintshire  
CH5 2DH  
United Kingdom

Telephone: + 44 1244 537370  
E-mail address: SDS-Info@fmc.com .

#### 1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:  
England and Wales: 44-870-8200418 (CHEMTREC)

Medical emergency:  
England and Wales: 111  
Scotland: 84 54 24 2424

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK  
SI 2019/720, and UK SI 2020/1567)**

Short-term (acute) aquatic hazard, Cate- H400: Very toxic to aquatic life.

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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) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

Hazard pictograms :



Signal word :

Warning

Hazard statements :

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

**Prevention:**

P273 Avoid release to the environment.

**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.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

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Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
thifensulfuron-methyl (ISO)	79277-27-3 016-096-00-2	Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	>= 30 - < 50
sodium carbonate	497-19-8 207-838-8 011-005-00-2	Eye Irrit. 2; H319	>= 10 - < 20
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	>= 2.5 - < 10
Substances with a workplace exposure limit :			
β-D-Fructofuranosyl-α-D-glucopyranoside	57-50-1 200-334-9		>= 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.
- 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.

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|-------------------------|---|---|
| In case of skin contact | : | If on clothes, remove clothes.<br>If on skin, rinse well with water.<br>Wash off with soap and plenty of water.<br>Get medical attention if irritation develops and persists.   |
| In case of eye contact  | : | Immediately flush eye(s) with plenty of water.<br>Remove contact lenses.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist.                                     |
| If swallowed            | : | Keep respiratory tract clear.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.<br>Do not induce vomiting without medical advice. |

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

None known.

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

- |           |   |   |
|-----------|---|---|
| Treatment | : | Treat symptomatically.<br>Immediate medical attention is required in case of ingestion. |
|-----------|---|---|
- 

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- |                                |   |   |
|--------------------------------|---|---|
| Suitable extinguishing media   | : | Dry chemical, CO <sub>2</sub> , water spray or regular foam.<br>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.<br>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.<br>Nitrogen oxides (NO <sub>x</sub> )<br>Sulphur oxides<br>Carbon oxides |

### 5.3 Advice for firefighters

- |   |   |  |
|---|---|--|
| Special protective equipment for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |
|---|---|--|
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Further information : 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.

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## 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.  
For disposal considerations see section 13.

### 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 : Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

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

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Avoid formation of respirable particles.  
Do not breathe vapours/dust.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.

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

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

### 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
$\beta$ -D-Fructofuranosyl- $\alpha$ -D-glucopyranoside	57-50-1	TWA	10 mg/m <sup>3</sup>	GB EH40
		STEL	20 mg/m <sup>3</sup>	GB EH40

#### Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
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### 8.2 Exposure controls

#### Personal protective equipment

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|--------------------------|---|--|
| Eye/face protection      | : | Eye wash bottle with pure water<br>Tightly fitting safety goggles<br>Wear face-shield and protective suit for abnormal processing problems.  |
| 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<br>Choose body protection according to the amount and concentration of the dangerous substance at the work place.  |
| Respiratory protection   | : | In case of dust exposure wear suitable personal respiratory protection and protective suit.  |
| Protective measures      | : | Plan first aid action before beginning work with this product.<br>Always have on hand a first-aid kit, together with proper instructions.<br>Wear suitable protective equipment.<br>When using do not eat, drink or smoke.<br><br>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                         | : | slight  |
| Odour Threshold               | : | not determined  |
| pH                            | : | 8.9 (25 °C)<br>Concentration: 10 g/l 1 %<br>(as a dispersion)                         |
| Melting point/freezing point  | : | Not available for this mixture.   |
| Boiling point/boiling range   | : |   |
|                               | : | Decomposition   |
| Flash point                   | : | not determined  |
| Evaporation rate              | : | Not applicable  |
| Flammability (solid, gas)     | : | Not highly flammable, may be ignitable<br>Method: Directive 67/548/EEC, Annex V, A.10 |
| Upper explosion limit / Upper | : | not determined  |

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flammability limit	
Lower explosion limit / Lower flammability limit	: not determined
Vapour pressure	: Not available for this mixture.
Relative vapour density	: not determined
Relative density	:
Bulk density	: 0.690 g/cm <sup>3</sup> packed
Solubility(ies)	
Water solubility	: Miscible
Partition coefficient: n-octanol/water	: Not available for this mixture.
Decomposition temperature	: Not available for this mixture.
Viscosity	
Viscosity, kinematic	: not determined
Explosive properties	: Not explosiveMethod: Directive 67/548/EEC, Annex V, A.14
Oxidizing properties	: The product is not oxidizing. Method: Directive 67/548/EEC, Annex V, A.17.

### 9.2 Other information

Particle size	: No data available
Self-ignition	: not determined

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

### 10.4 Conditions to avoid

Conditions to avoid	: Heat, flames and sparks. Heating of the mixture may evolve harmful and irritant vapours.
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### 10.5 Incompatible materials

Materials to avoid	: Avoid strong acids, bases, and oxidizers
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### 10.6 Hazardous decomposition products

Stable under recommended storage conditions.



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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

Not classified based on available information.

##### Product:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Remarks: (Data on the product itself)

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: (Data on the product itself)

##### Components:

##### **thifensulfuron-methyl (ISO):**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.03 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

##### **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

##### **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

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icity  
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

### **β-D-Fructofuranosyl-α-D-glucopyranoside:**

Acute oral toxicity : LD50 (Rat): 29,700 mg/kg

### **Skin corrosion/irritation**

Not classified based on available information.

### **Product:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : (Data on the product itself)

### **Components:**

#### **thifensulfuron-methyl (ISO):**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : Minimal effects that do not meet the threshold for classification.

#### **sodium carbonate:**

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

#### **metsulfuron-methyl (ISO):**

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Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	US EPA Test Guideline OPP 81-5
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
Remarks	:	(Data on the product itself)

#### Components:

##### thifensulfuron-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

##### metsulfuron-methyl (ISO):

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

### Respiratory or skin sensitisation

#### Skin sensitisation

Not classified based on available information.

#### Respiratory sensitisation

Not classified based on available information.

#### Product:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Animal test did not cause sensitization by skin contact.
Remarks	:	(Data on the product itself)

#### Components:

##### thifensulfuron-methyl (ISO):

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Test Type	: Maximisation Test
Species	: Guinea pig
Method	: OECD Test Guideline 429
Result	: Does not cause skin sensitisation.

### **metsulfuron-methyl (ISO):**

Test Type	: Maximisation Test
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
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### **Components:**

#### **thifensulfuron-methyl (ISO):**

Genotoxicity in vitro	: Test system: Chinese hamster ovary cells Method: OECD Test Guideline 476 Result: negative Remarks: In vitro tests did not show mutagenic effects
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Germ cell mutagenicity- Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
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#### **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.
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#### **metsulfuron-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
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Test Type: Chromosome aberration test in vitro

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Metabolic activation: Metabolic activation  
Result: positive  
GLP: yes

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

### Carcinogenicity

Not classified based on available information.

#### Product:

Carcinogenicity - Assessment : Contains no ingredient listed as a carcinogen

#### Components:

##### **thifensulfuron-methyl (ISO):**

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

##### **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:

##### **thifensulfuron-methyl (ISO):**

Reproductive toxicity - Assessment : Did not show teratogenic effects in animal experiments.

##### **sodium carbonate:**

Effects on foetal development : Species: Rat  
Application Route: Oral

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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

### **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

### **STOT - single exposure**

Not classified based on available information.

### **STOT - repeated exposure**

Not classified based on available information.

### **Product:**

Remarks : Refer to acute toxicity and/or repeated dose toxicity data for more information on target organs if applicable.

### **Components:**

#### **sodium carbonate:**

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

### **Repeated dose toxicity**

### **Components:**

#### **thifensulfuron-methyl (ISO):**

Species : Rat  
LOAEL : ca. 200 mg/kg

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Exposure time : 90 d  
Target Organs : No specific target organs noted  
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

### metsulfuron-methyl (ISO):

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

### Aspiration toxicity

Not classified based on available information.

### 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)): > 120 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
Remarks: (Data on the product itself)

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 120 mg/l  
aquatic invertebrates  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: (Data on the product itself)

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Toxicity to algae/aquatic plants : EbC50 (Pseudokirchneriella subcapitata (microalgae)): 0.54 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: (Data on the product itself)

### Components:

#### **thifensulfuron-methyl (ISO):**

Toxicity to fish	: LC50 (Salmo gairdneri): 100 mg/l Exposure time: 96 h  LC50 (Oncorhynchus mykiss (rainbow trout)): > 250 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
Toxicity to algae/aquatic plants	: IC50 (green algae): 0.0159 mg/l Exposure time: 72 h  ErC50 (Raphidocelis subcapitata (freshwater green alga)): 1.4 mg/l Exposure time: 72 h  EC50 (Lemna minor (duckweed)): 1.3 µg/l
M-Factor (Acute aquatic toxicity)	: 100
Toxicity to fish (Chronic toxicity)	: NOEC: 250 mg/l Exposure time: 28 d Species: Salmo gairdneri  NOEC: 10.6 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 100 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	: 100
Toxicity to soil dwelling organisms	: LC50: > 2,000 mg/kg Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	: LD50: > 2,510 mg/kg Species: Anas platyrhynchos (Mallard duck)



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LD50: > 5,620 ppm  
Species: *Anas platyrhynchos* (Mallard duck)  
Remarks: Dietary

LD50: > 5,620 ppm  
Species: *Colinus virginianus* (Bobwhite quail)

LD50: > 7.1 µg/bee  
End point: Acute oral toxicity  
Species: *Apis mellifera* (bees)

LD50: > 100 µg/bee  
End point: Acute contact toxicity  
Species: *Apis mellifera* (bees)

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

### 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 : EC50 (*Ceriodaphnia* (water flea)): 200 mg/l  
aquatic invertebrates : Exposure time: 48 h  
Test Type: semi-static test

### metsulfuron-methyl (ISO):

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

Toxicity to daphnia and other : EC50 (*Daphnia magna* (Water flea)): > 120 mg/l  
aquatic invertebrates : 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 : ErC50 (*Anabaena flos-aquae* (cyanobacterium)): 65.7 µg/l  
plants : Exposure time: 96 h  
Method: OPPTS 850.5400  
GLP: yes

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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  
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

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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)  
Method: OECD Test Guideline 206

### β-D-Fructofuranosyl-α-D-glucopyranoside:

Toxicity to fish : Remarks: No data available

## 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:

#### thifensulfuron-methyl (ISO):

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

#### sodium carbonate:

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

### **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.

### **β-D-Fructofuranosyl-α-D-glucopyranoside:**

Biodegradability : Remarks: No data available

## 12.3 Bioaccumulative potential

### **Product:**

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

### **Components:**

#### **thifensulfuron-methyl (ISO):**

Bioaccumulation : Bioconcentration factor (BCF): 1  
Remarks: Does not bioaccumulate.

#### **sodium carbonate:**

Bioaccumulation : Remarks: Does not bioaccumulate.

#### **metsulfuron-methyl (ISO):**

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

Partition coefficient: n-octanol/water : Pow: 0.018 (25 °C)  
log Pow: -1.7 (25 °C)  
pH: 7

## 12.4 Mobility in soil

### **Product:**

Distribution among environmental compartments : Remarks: Mobile in soils  
Estimation based on data obtained on active ingredient.

### **Components:**

#### **thifensulfuron-methyl (ISO):**

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Distribution among environmental compartments : Koc: 28.3, log Koc: 1.45  
Remarks: Highly mobile in soils

Stability in soil :

### **metsulfuron-methyl (ISO):**

Distribution among environmental compartments : Remarks: Under normal conditions the substance/mixture is mobile in soil.

## 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 Other adverse effects

### **Product:**

Endocrine disrupting potential : 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.

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.  
Triple rinse containers.  
Do not re-use empty containers.  
Packaging that is not properly emptied must be disposed of as

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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

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

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Labels : 9

### 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

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Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	:	Conditions of restriction for the following entries should be considered: Number on list 3 Alcohols, C10-16 (Number on list 3)
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Regulation (EU) No 2024/590 on substances that deplete the ozone layer	:	Not applicable
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UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
--	---	----------------

GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation	:	Not applicable
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Control of Major Accident Hazards Regulations 2015 (COMAH)	E1	ENVIRONMENTAL HAZARDS
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Volatile organic compounds	:	Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control) Volatile organic compounds (VOC) content: < 0.01 %
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#### The components of this product are reported in the following inventories:

TCSI	:	Not 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 20 SG TIM 50 SG
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory



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KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not 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
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (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; 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

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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; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; 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  
Calculation method

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