

# SAFETY DATA SHEET

According to Commission Regulation (EU) 2020/878 of amending  
Regulation (EC) No 1907/2006



## REFINE® EXTRA

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	12.06.2023	50000040	Date of first issue: 12.06.2023

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

#### 1.1 Product identifier

**Product name** REFINE® EXTRA

**Other means of identification**

**Product code** 50000040

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

**Use of the Sub-  
stance/Mixture** Herbicide

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

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

**Supplier Address**

FMC Agro Bulgaria EOOD  
ISKARSKO SHOSE BLVD. NO.7  
TRADE CENTER EUROPE  
BUILDING 7, OFFICE 8, FLOOR 4  
1528 Sofia  
Bulgaria

Telephone: +359 (0) 2 818 5656  
E-mail address: SDS-Info@fmc.com .

#### 1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:  
Bulgaria: +(359)-32570104 (CHEMTREC)

Medical emergency:  
Clinic of Toxicology at the Hospital " N.I. Pirogov"  
Emergency telephone/fax: +359 2 9154 233

National number: 112

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

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Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
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 : H373 May cause damage to organs through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P260 Do not breathe dust or spray.  
P273 Avoid release to the environment.  
**Response:**  
P314 Get medical advice/ attention if you feel unwell.  
P391 Collect spillage.  
**Disposal:**  
P501 Dispose of contents/container as hazardous waste in accordance with local regulations.

#### Hazardous components which must be listed on the label:

tribenuron-methyl (ISO)

#### Additional Labelling

EUH208 Contains tribenuron-methyl (ISO). May produce an allergic reaction.  
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.

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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.

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

##### Components

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
tribenuron-methyl (ISO)	101200-48-0 401-190-1 607-177-00-9	Skin Sens. 1; H317 STOT RE 2; H373 (Thyroid, Nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	>= 10 - < 20
sodium carbonate	497-19-8 207-838-8 011-005-00-2	Eye Irrit. 2; H319	>= 10 - < 20
Phosphoric acid, trisodium salt, dodecahydrate	10101-89-0	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)  Acute toxicity estimate	>= 1 - < 10

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		Acute inhalation toxicity (dust/mist): 0,830083 mg/l	
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For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- |                         |  |
|-------------------------|--|
| General advice          | : Remove victim from exposure and then have him lie down in the recovery position.<br>Call a physician immediately.<br>Show this safety data sheet to the doctor in attendance.<br>Keep at rest.<br>Keep warm and in a quiet place.<br>Do not leave the victim unattended. |
| If inhaled              | : Remove to fresh air.<br>If unconscious, place in recovery position and seek medical advice.<br>Consult a physician after significant exposure.   |
| In case of skin contact | : If on clothes, remove clothes.<br>If on skin, rinse well with water.<br>Wash off immediately with soap and plenty of water.<br>Get medical attention immediately if irritation develops and persists.  |
| In case of eye contact  | : Rinse immediately with plenty of water for at least 15 minutes.<br>Remove contact lenses.<br>If eye irritation persists, consult a specialist.   |
| If swallowed            | : Do not induce vomiting without medical advice.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.   |

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

- |       |  |
|-------|--|
| Risks | : May cause damage to organs through prolonged or repeated exposure.<br>Slight irritation may occur. |
|-------|--|

#### 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. |
|-----------|---|

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### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, water spray or regular foam.

Unsuitable extinguishing media : 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 : Thermal decomposition can lead to release of irritating gases and vapours.  
Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides

#### 5.3 Advice for firefighters

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

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.

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.  
Avoid dust formation.  
Avoid breathing dust.  
Ensure adequate ventilation.  
If it can be safely done, stop the leak.  
Keep people away from and upwind of spill/leak.  
Remove all sources of ignition.  
Immediately evacuate personnel to safe areas.  
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

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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.

## 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. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Keep only in original packaging.
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. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands and face before breaks and immediately after handling the product.

### 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.

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### 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

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
sodium carbonate	Workers	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>
	Consumers	Inhalation	Acute local effects	10 mg/m <sup>3</sup>
Phosphoric acid, trisodium salt, dodecahydrate	Workers	Inhalation	Long-term systemic effects	4,07 mg/m <sup>3</sup>
	Consumers	Inhalation	Long-term systemic effects	3,04 mg/m <sup>3</sup>

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

Substance name	Environmental Compartment	Value
Phosphoric acid, trisodium salt, dodecahydrate	Sewage treatment plant	50 mg/l

### 8.2 Exposure controls

#### Personal protective equipment

Eye 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. Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be

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required.

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Equipment should conform to EN 143

Filter type : Particulates type (P)

Protective measures : Plan first aid action before beginning work with this product. 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	: granular
Colour	: light brown
Odour	: slight, acidic
Odour Threshold	: Not applicable No data available
Melting point/range	: Not available for this mixture.
Boiling point/boiling range	: Decomposition
Flammability	: Does not sustain combustion.
Upper explosion limit / Upper flammability limit	: Not available for this mixture.
Lower explosion limit / Lower flammability limit	: Not available for this mixture.
Flash point	: Not applicable
Auto-ignition temperature	: 385 °C



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Decomposition temperature : Not available for this mixture.

pH : ca. 9,2 - 9,8 (20 °C)  
Concentration: 10 g/l 1 %

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : Not applicable

Solubility(ies)  
Water solubility : soluble

Partition coefficient: n-  
octanol/water : Not available for this mixture.

Vapour pressure : Not available for this mixture.

Density : No data available

Bulk density : 692 kg/m3 packed

Relative vapour density : Not available for this mixture.

Particle characteristics  
Particle size : No data available

Particle Size Distribution : No data available

Shape : No data available

### 9.2 Other information

Explosives : Not explosive

Oxidizing properties : The product is not oxidizing.

Evaporation rate : 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 : No decomposition if stored and applied as directed.

Dust may form explosive mixture in air.

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### 10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.  
Protect from frost, heat and sunlight.

### 10.5 Incompatible materials

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

### 10.6 Hazardous decomposition products

Stable under recommended storage conditions.

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## 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 Remarks: (Data on the product itself)
Acute inhalation toxicity	: Acute toxicity estimate: > 10 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method  Acute toxicity estimate: > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	: LD50 (Rabbit): > 5.000 mg/kg Method: OECD Test Guideline 402 Remarks: (Data on the product itself) Information source: Internal study report

#### 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

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

Acute oral toxicity	: LD50: > 5.000 mg/kg Method: OECD Test Guideline 425
Acute inhalation toxicity	: LC50 (Rat): > 5,14 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	: LD50 (Rat): > 5.000 mg/kg Method: OECD Test Guideline 402

### **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

### **Phosphoric acid, trisodium salt, dodecahydrate:**

Acute oral toxicity	: LD50 (Rat, female): > 2.000 mg/kg Method: OECD Test Guideline 420 Remarks: no mortality
Acute inhalation toxicity	: LC50 (Rat, male and female): > 0,83 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Based on data from similar materials no mortality  Acute toxicity estimate: 0,830083 mg/l Test atmosphere: dust/mist Method: Calculation method Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	: LD50 (Rat, male and female): > 2.000 mg/kg Method: OECD Test Guideline 402 Remarks: Based on data from similar materials no mortality

### **Skin corrosion/irritation**

Not classified based on available information.

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### **Product:**

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

### **Components:**

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

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

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

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 404
Remarks	:	May cause mild irritation. Based on available data, the classification criteria are not met.

#### **sodium carbonate:**

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

#### **Phosphoric acid, trisodium salt, dodecahydrate:**

Species	:	Rabbit
Result	:	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):**

Method	:	OECD Test Guideline 405
Result	:	No eye irritation

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

Species	:	Rabbit
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Assessment : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : May cause mild irritation.  
Based on available data, the classification criteria are not met.

### sodium carbonate:

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

### Phosphoric acid, trisodium salt, dodecahydrate:

Species : Rabbit  
Method : EPA OTS 798.4500  
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:

Test Type : Maximisation Test  
Species : Guinea pig  
Assessment : Not a skin sensitizer.  
Method : US EPA Test Guideline OPPTS 870.2600  
Result : Animal test did not cause sensitization by skin contact.  
Remarks : (Data on the product itself)

### Components:

#### thifensulfuron-methyl (ISO):

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

#### tribenuron-methyl (ISO):

Test Type : Maximisation Test  
Species : Guinea pig  
Assessment : May cause sensitisation by skin contact.  
Method : OECD Test Guideline 406  
Result : Causes skin sensitization.

### Phosphoric acid, trisodium salt, dodecahydrate:

Test Type : Local lymph node assay (LLNA)  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : Does not cause skin sensitisation.

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Remarks : Based on data from similar materials

### Germ cell mutagenicity

Not classified based on available information.

#### 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

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

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

Germ cell mutagenicity- Assessment : Did not show mutagenic effects in animal experiments.

##### **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.

##### **Phosphoric acid, trisodium salt, dodecahydrate:**

Genotoxicity in vitro : Test Type: gene mutation test  
Method: OECD Test Guideline 490  
Result: negative  
Remarks: Based on data from similar materials

Test Type: Micronucleus test  
Method: OECD Test Guideline 487  
Result: negative

Germ cell mutagenicity- Assessment : In vitro tests did not show mutagenic effects

### Carcinogenicity

Not classified based on available information.

#### Components:

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

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

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### tribenuron-methyl (ISO):

Remarks : No significant adverse effects were reported

Carcinogenicity - Assessment : Did not show carcinogenic effects in animal experiments.

### Reproductive toxicity

Not classified based on available information.

### Components:

#### thifensulfuron-methyl (ISO):

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

#### tribenuron-methyl (ISO):

Reproductive toxicity - Assessment : No toxicity to reproduction  
Animal testing did not show any effects on foetal development., Did not show teratogenic effects in animal experiments.

#### 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

#### Phosphoric acid, trisodium salt, dodecahydrate:

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 1000 mg/kg bw/day  
General Toxicity - Parent: NOAEL: 1.000 mg/kg bw/day  
General Toxicity F1: NOAEL: 1.000 mg/kg bw/day  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: reproductive and developmental toxicity study  
Species: Rat  
Application Route: Oral  
Dose: 4.1, 19, 88.3, 410 mg/kg bw/day  
Duration of Single Treatment: 20 d  
General Toxicity Maternal: NOAEL: > 410 mg/kg bw/day

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Embryo-foetal toxicity: NOAEL: > 410 mg/kg bw/day  
Result: negative  
Remarks: Based on data from similar materials

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

### 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.

#### Components:

##### tribenuron-methyl (ISO):

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

##### Phosphoric acid, trisodium salt, dodecahydrate:

Assessment : May cause respiratory irritation.

### STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

#### Product:

Assessment : May cause damage to organs through prolonged or repeated exposure.

#### Components:

##### tribenuron-methyl (ISO):

Target Organs : Thyroid, Nervous system  
Assessment : May cause damage to organs through prolonged or repeated exposure.

##### 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  
Exposure time : 90 d



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Target Organs : No specific target organs noted  
Symptoms : Reduced body weight

### tribenuron-methyl (ISO):

Species : Rabbit  
LOAEL : 80 mg/kg  
Target Organs : Thyroid, Nervous system  
Assessment : The substance or mixture is classified as specific target organ  
toxicant, repeated exposure, category 2.  
Remarks : Increased mortality or reduced survival

### sodium carbonate:

Species : Rat, male and female  
NOAEL : > 0,01 mg/kg  
Application Route : inhalation (dust/mist/fume)  
Test atmosphere : dust/mist

### Phosphoric acid, trisodium salt, dodecahydrate:

Species : Dog, female  
NOAEL : 492.77 mg/kg bw/day  
LOAEL : 1433.56 mg/kg bw/day  
Application Route : Oral - feed  
Exposure time : 90 d  
Dose : 129.31, 492.77, 1433.56 mg/kg bw/day  
Target Organs : Kidney  
Remarks : Based on data from similar materials

Species : Dog, male  
NOAEL : 322.88 mg/kg bw/day  
LOAEL : 1107.12 mg/kg bw/day  
Application Route : Oral - feed  
Exposure time : 90 d  
Dose : 94.23, 322.88, 1107.12 mg/kg bw/day  
Target Organs : Kidney  
Remarks : Based on data from similar materials

### Aspiration toxicity

Not classified based on available information.

### Product:

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

### Components:

#### tribenuron-methyl (ISO):

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

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### 11.2 Information on other hazards

#### 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.

#### Further information

##### Product:

Remarks : No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 130 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: (Data on the product itself)

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 130 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: (Data on the product itself)

Toxicity to algae/aquatic plants : EC50 (Lemna gibba (duckweed)): 0,0029 mg/l  
End point: Frond  
Exposure time: 14 d  
Method: US EPA Test Guideline OPP 122-2 & 123-2  
Remarks: (Data on the product itself)  
Information source: Internal study report

ErC50 (Pseudokirchneriella subcapitata (microalgae)): > 0,16 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: (Data on the product itself)  
Information source: Internal study report

Toxicity to soil dwelling organisms : LC50: > 1.000 mg/kg  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)  
Method: OECD Test Guideline 207  
GLP:yes  
Remarks: Information source: Internal study report

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Toxicity to terrestrial organisms : LD50: > 112.2 µg/bee  
Exposure time: 48 h  
End point: Acute oral toxicity  
Species: Apis mellifera (bees)  
Method: OECD Test Guideline 213  
GLP:yes  
Remarks: Information source: Internal study report

LD50: > 100 µg/bee  
Exposure time: 48 h  
End point: Acute contact toxicity  
Species: Apis mellifera (bees)  
Method: OECD Test Guideline 214  
GLP:yes  
Remarks: Information source: Internal study report

### 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)

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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)  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.

### tribenuron-methyl (ISO):

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 738 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Crustaceans): > 320 mg/l Exposure time: 48 h  EC50 (Daphnia magna (Water flea)): > 894 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0,068 mg/l Exposure time: 72 h  ErC50 (Lemna gibba (duckweed)): 0,0047 mg/l Exposure time: 7 d  NOEC (Lemna gibba (duckweed)): 0,001 mg/l Exposure time: 7 d
M-Factor (Acute aquatic toxicity)	: 100

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Toxicity to fish (Chronic toxicity) : NOEC: 114 mg/l  
Exposure time: 21 d  
Species: Cyprinodon variegatus (sheepshead minnow)  
Method: OECD Test Guideline 211

NOEC: 560 mg/l  
Exposure time: 21 d  
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 41 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 100

Toxicity to soil dwelling organisms : NOEC: 3,2 mg/kg  
Exposure time: 56 d  
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : LD50: > 2.250 mg/kg  
Species: Colinus virginianus (Bobwhite quail)

LD50: > 5.620 ppm  
Species: Colinus virginianus (Bobwhite quail)  
Remarks: Dietary

LD50: > 5.620 ppm  
Species: Anas platyrhynchos (Mallard duck)  
Remarks: Dietary

LD50: > 98.4 µg/bee  
Exposure time: 48 h  
End point: Acute contact toxicity  
Species: Apis mellifera (bees)

LD50: > 9.1 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.

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

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aquatic invertebrates      Exposure time: 48 h  
Test Type: semi-static test

### Phosphoric acid, trisodium salt, dodecahydrate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
aquatic invertebrates      Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l  
plants      Exposure time: 72 h  
Method: EU Method C3  
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: EU Method C3  
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): 1.000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

NOEC (activated sludge): 1.000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

Toxicity to soil dwelling or- : LC50: > 3.500 mg/kg  
ganisms      Exposure time: 14 d  
Species: Eisenia fetida (earthworms)  
Method: OECD Test Guideline 207  
Remarks: Based on data from similar materials

## 12.2 Persistence and degradability

### Product:

Biodegradability : Result: Not readily biodegradable.  
Remarks: Estimation based on data obtained on active ingre-  
dient.

### Components:

#### thifensulfuron-methyl (ISO):

Biodegradability : Remarks: Not readily biodegradable.

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Primary degradation half-lives vary with circumstances, from a few days to a few weeks in aerobic water and soil.

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

Biodegradability : Result: Not readily biodegradable.  
Remarks: The product/substance is not persistent in the environment.  
Primary degradation half-lives vary with circumstances, from a few days to a few weeks in aerobic water and soil.  
Metabolites are considered as persistent.  
According to the results of tests of biodegradability this product is not readily biodegradable.

### **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:**

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

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

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

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

Partition coefficient: n-octanol/water : log Pow: -0,38

### **sodium carbonate:**

Bioaccumulation : Remarks: Does not bioaccumulate.

## 12.4 Mobility in soil

### **Product:**

Distribution among environmental compartments : Remarks: Under normal conditions the active ingredient/s is/are of high to intermediate mobility in soil. There is a potential for leaching to groundwater.

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### Components:

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

Distribution among environmental compartments : Koc: 28,3, log Koc: 1,45  
Remarks: Highly mobile in soils

Stability in soil :

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

Distribution among environmental compartments : Remarks: Under normal conditions the active ingredient/s is/are of high to intermediate mobility in soil. There is a potential for leaching to groundwater.

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

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

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## 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.



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Contaminated packaging : Empty remaining contents.  
Do not re-use empty containers.  
Packaging that is not properly emptied must be disposed of as 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. (Thifensulfuron-methyl, Tribenuron-methyl)
ADR	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thifensulfuron-methyl, Tribenuron-methyl)
RID	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thifensulfuron-methyl, Tribenuron-methyl)
IMDG	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thifensulfuron-methyl, Tribenuron-methyl)
IATA	: Environmentally hazardous substance, solid, n.o.s. (Thifensulfuron-methyl, Tribenuron-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

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Classification Code : M7  
Hazard Identification Number : 90  
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 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)	:	Conditions of restriction for the following entries should be considered: Number on list 75tribenuron-methyl (ISO) sodium carbonate
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REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
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Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
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Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
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REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
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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
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#### Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

#### 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

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on the Canadian DSL nor NDSL.

ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
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

H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H319	: Causes serious eye irritation.
H335	: May cause respiratory irritation.
H373	: May cause damage to organs through prolonged or repeated exposure.
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
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
STOT SE	: Specific target organ toxicity - single exposure

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 - Emergen-

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cy 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 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:

STOT RE 2	H373
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

#### Classification procedure:

Based on product data or assessment
Calculation method
Calculation method

### Disclaimer

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