

# SAFETY DATA SHEET



## LEADOFF®

Version	Revision Date:	SDS Number:	Date of last issue: -
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Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

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### SECTION 1. IDENTIFICATION

Product name : LEADOFF®

#### Manufacturer or supplier's details

#### COMPANY IDENTIFICATION

**Manufacturer/importer** : CORTEVA AGRISCIENCE LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS, IN, 46268-1053  
UNITED STATES

**Customer Information Number** : 1-800-258-3033

**E-mail address** : customerinformation@corteva.com

**Emergency telephone** : INFOTRAC (CONTRACT 84224).  
800-992-5994 or 317-337-6009

#### Recommended use of the chemical and restrictions on use

**Recommended use** : Herbicide

**Restrictions on use** : Do not use product for anything outside of the above specified uses.

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a hazardous substance or mixture.

#### GHS label elements

Not a hazardous substance or mixture.

#### Other hazards

None known.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
Rimsulfuron	122931-48-0	16.67
thifensulfuron-methyl (ISO)	79277-27-3	16.67
Kaolin	1332-58-7	>= 3 - < 10
sodium carbonate	497-19-8	>= 3 - < 10
Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde	105859-97-0	>= 3 - < 10
Sucrose	57-50-1	>= 1 - < 3
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	>= 0.1 - < 0.3
Balance	Not Assigned	> 30

Actual concentration is withheld as a trade secret

### SECTION 4. FIRST AID MEASURES

- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies involving this product, call toll free 1-888-226-8832. See Label for Additional Precautions and Directions for Use. Information presented in Section 4 conforms to the requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard of 2012. See Section 15 for applicable information conforming to the requirements of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), as required by the US Environmental Protection Agency (EPA), or by state Regulatory Agencies.
- If inhaled : No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary. Move to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Call a poison control center or doctor for treatment advice.
- In case of skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- In case of eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- If swallowed : No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.

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Most important symptoms and effects, both acute and delayed : None known.

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### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam
- Unsuitable extinguishing media : Dry chemical
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health. Applying foam will release significant amounts of hydrogen gas that can be trapped under the foam blanket. Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.
- Combustion products may include and are not limited to:  
Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)
- Specific extinguishing methods : Do not allow extinguishing medium to contact container contents. Most fire extinguishing media will cause hydrogen evolution, and once the fire is put out, may accumulate in poorly ventilated or confined areas and result in flash fire or explosion if ignited.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.
- 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.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.  
Use personal protective equipment.
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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid dust formation.  
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.  
Discharge into the environment must be avoided.  
Prevent further leakage or spillage if safe to do so.
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Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.  
Prevent from entering into soil, ditches, sewers, underwater.  
See Section 12, Ecological Information.

Methods and materials for containment and cleaning up : Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.  
Pick up and arrange disposal without creating dust.  
Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurization of the container.  
Keep in suitable, closed containers for disposal.  
Sweep up or vacuum up spillage and collect in suitable container for disposal.  
See Section 13, Disposal Considerations, for additional information.

## SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice.  
Smoking, eating and drinking should be prohibited in the application area.  
Avoid prolonged or repeated contact with skin.  
Take care to prevent spills, waste and minimize release to the environment.  
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage : Store in a closed container.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in properly labeled containers.  
Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Kaolin	1332-58-7	TWA (Respirable particulate matter)	2 mg/m <sup>3</sup>	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1

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		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
		PEL (respirable)	0.05 mg/m3	OSHA CARC
sodium carbonate	497-19-8	TWA	10 mg/m3	Dow IHG
Sucrose	57-50-1	TWA	10 mg/m3	ACGIH
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	15 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA	10 mg/m3 (Titanium dioxide)	ACGIH
		TWA (Total dust)	10 mg/m3	OSHA P0

**Engineering measures** : Information presented in Section 8 conforms to the requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard of 2012. See Section 15 for applicable information conforming to the requirements of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), as required by the US Environmental Protection Agency (EPA), or by state Regulatory

**Personal protective equipment**

**Skin and body protection** : Applicators and other handlers must wear:  
 Long sleeved shirt and long pants  
 Chemical-resistant gloves, Category A (such as butyl rubber, naturalrubber, neoprene rubber, or nitrile rubber), all greater than or equalto 14 mils  
 Shoes plus socks  
 PPE required for early entry to treated areas that is permitted underthe Worker Protection Standard and that involves contact with anythingthat has been treated, such as plants, soil, or water, is:  
 Coveralls  
 Chemical-resistant gloves, Category A (such as butyl rubber, naturalrubber, neoprene rubber, or nitrile rubber), all greater than or equalto 14 mils  
 Shoes plus socks  
 Applicators and other handlers must wear:  
 Long sleeved shirt and long pants

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Chemical-resistant gloves, Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all greater than or equal to 14 mils  
 Shoes plus socks  
 PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:  
 Coveralls  
 Chemical-resistant gloves, Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all greater than or equal to 14 mils  
 Shoes plus socks

Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Hygiene measures : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.  
 Remove clothing/PPE immediately if material gets inside.  
 Wash thoroughly and put on clean clothing.  
 Remove personal protective equipment immediately after handling this product.  
 Wash the outside of gloves before removing.  
 As soon as possible, wash thoroughly and change into clean clothing.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	: solid, granules
Color	: light brown
Odor	: slight
Odor Threshold	: No data available
pH	: 6.5 - 8.5
Melting point/range	: No data available
Freezing point	: Not applicable
Boiling point/boiling range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: No data available
Upper explosion limit / Upper flammability limit	: Not applicable

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Lower explosion limit / Lower flammability limit : Not applicable

Vapor pressure : Not applicable

Relative vapor density : Not applicable

Bulk density : 654 kg/m<sup>3</sup> Tapped

Solubility(ies)  
Water solubility : No data available

Autoignition temperature : No data available

Viscosity  
Viscosity, dynamic : Not applicable

Explosive properties : No data available

Oxidizing properties : No data available

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : No decomposition if stored and applied as directed.  
Stable under normal conditions.

Possibility of hazardous reactions : Stable under recommended storage conditions.  
No hazards to be specially mentioned.  
None known.

Conditions to avoid : None known.

Incompatible materials : None.

Hazardous decomposition products : Decomposition products depend upon temperature, air supply and the presence of other materials.  
Decomposition products can include and are not limited to:  
Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Product:

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

Acute inhalation toxicity : LC50 (Rat): > 5.4 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Expert judgment  
Remarks: Estimation based on data obtained on active ingredient.

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Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Method: OECD Test Guideline 402

**Components:****Rimsulfuron:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity : LC50 (Rat): > 205.4 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Directive 67/548/EEC, Annex V, B.2.  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Method: Directive 67/548/EEC, Annex V, B.3.  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute dermal toxicity

**thifensulfuron-methyl (ISO):**

Acute oral toxicity : Remarks: Very low toxicity if swallowed.  
Harmful effects not anticipated from swallowing small amounts.

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

Acute inhalation toxicity : Remarks: Dust may cause irritation to upper respiratory tract (nose and throat).

LC50 (Rat): > 7.9 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50 (Rabbit): > 2,000 mg/kg

**Kaolin:**

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

**sodium carbonate:**

Acute oral toxicity : LD50 (Rat, male and female): 2,800 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Symptoms: No deaths occurred at this concentration.



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Assessment: The substance or mixture has no acute dermal toxicity

**Sucrose:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 425

Acute inhalation toxicity : LC50 (Rat): > 6.82 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

**Skin corrosion/irritation****Product:**

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

**Components:****Rimsulfuron:**

Species : Rabbit  
Method : Directive 67/548/EEC, Annex V, B.4.  
Result : No skin irritation

**Kaolin:**

Species : Rabbit  
Result : No skin irritation

**sodium carbonate:**

Result : No skin irritation

**Sucrose:**

Species : Rabbit  
Result : No skin irritation

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Species : Rabbit

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Method : OECD Test Guideline 404  
Result : No skin irritation

### Serious eye damage/eye irritation

#### **Product:**

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

#### **Components:**

##### **Rimsulfuron:**

Species : Rabbit  
Result : No eye irritation  
Method : Directive 67/548/EEC, Annex V, B.5.

##### **Kaolin:**

Species : Rabbit  
Result : No eye irritation

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

Result : Eye irritation

##### **Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde:**

Species : Rabbit  
Result : Eye irritation

##### **Sucrose:**

Species : Rabbit  
Result : No eye irritation

##### **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$ ]:**

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

### Respiratory or skin sensitization

#### **Product:**

Test Type : Maximization Test  
Species : Guinea pig  
Method : US EPA Test Guideline OPPTS 870.2600  
Result : Did not cause sensitization on laboratory animals.

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**Components:****Rimsulfuron:**

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitization.
Method	:	OECD Test Guideline 406

Species	:	Mouse
Assessment	:	Does not cause respiratory sensitization.

**Germ cell mutagenicity****Components:****Rimsulfuron:**

Germ cell mutagenicity - Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.
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**sodium carbonate:**

Germ cell mutagenicity - Assessment	:	No relevant data found.
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**Sucrose:**

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were inconclusive., Animal genetic toxicity studies were inconclusive
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**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative.
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**Carcinogenicity****Components:****Rimsulfuron:**

Carcinogenicity - Assessment	:	Did not cause cancer in laboratory animals.
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**thifensulfuron-methyl (ISO):**

Carcinogenicity - Assessment	:	Did not cause cancer in laboratory animals.
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**Kaolin:**

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.
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Available data suggest that the material is unlikely to cause cancer.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

<b>IARC</b>	Group 1: Carcinogenic to humans Kaolin (Silica dust, crystalline)	1332-58-7
	Group 2B: Possibly carcinogenic to humans titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7
<b>OSHA</b>	OSHA specifically regulated carcinogen Kaolin (crystalline silica)	1332-58-7
<b>NTP</b>	Known to be human carcinogen Kaolin (Silica, Crystalline (Respirable Size))	1332-58-7

**Reproductive toxicity**

**Components:**

**Rimsulfuron:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Development effects were not observed in laboratory animals.

**sodium carbonate:**

Reproductive toxicity - Assessment : Did not cause birth defects or any other fetal effects in laboratory animals.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Did not cause birth defects or any other fetal effects in laboratory animals.

**STOT-single exposure**

**Components:**

**Rimsulfuron:**

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

**thifensulfuron-methyl (ISO):**

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

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### **Kaolin:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### **sodium carbonate:**

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

### **Sucrose:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### **Repeated dose toxicity**

#### **Components:**

##### **Rimsulfuron:**

Remarks : In animals, effects have been reported on the following organs:  
Liver

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

Remarks : No relevant data found.

##### **Kaolin:**

Remarks : Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

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

Remarks : No relevant data found.

### **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Species : Rat  
NOAEL : 1,000 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 408  
Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

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**Aspiration toxicity****Components:****Rimsulfuron:**

Based on physical properties, not likely to be an aspiration hazard.

**thifensulfuron-methyl (ISO):**

Based on physical properties, not likely to be an aspiration hazard.

**Kaolin:**

Based on physical properties, not likely to be an aspiration hazard.

**sodium carbonate:**

Based on physical properties, not likely to be an aspiration hazard.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Based on physical properties, not likely to be an aspiration hazard.

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Rimsulfuron:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 390 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia): > 360 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae/aquatic plants	:	EbC50 (Pseudokirchneriella subcapitata (green algae)): 1.2 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 GLP: yes
		ErC50 (Pseudokirchneriella subcapitata (green algae)): 2.8 mg/l Exposure time: 48 h Method: OECD Test Guideline 201 GLP: yes
		EC50 (Lemna gibba (duckweed)): 0.023 mg/l

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End point: Frond  
Exposure time: 14 d  
Method: US EPA Test Guideline OPP 122-2 & 123-2  
GLP: yes

EC50 (Lemna gibba (duckweed)): 0.017 mg/l  
End point: Biomass  
Exposure time: 14 d  
Method: US EPA Test Guideline OPP 122-2 & 123-2  
GLP: yes

ErC50 (Anabaena flos-aquae (cyanobacteria)): 5.2 mg/l  
Exposure time: 96 h  
Method: US EPA Test Guideline OPPTS 850.5400  
GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 110 mg/l  
Exposure time: 90 d  
Test Type: Early Life-Stage  
Method: OECD Test Guideline 210  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.82 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 1,000 mg/kg  
Method: OECD Test Guideline 207  
GLP: yes

Toxicity to terrestrial organisms : oral LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg  
Method: US EPA Test Guideline OPP 71-1  
GLP: yes

oral LD50 (Anas platyrhynchos (Mallard duck)): > 2,000 mg/kg  
Method: US EPA Test Guideline OPP 71-1  
GLP: yes

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5,620 mg/kg  
Exposure time: 8 d  
Method: OECD Test Guideline 205

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5,620 mg/kg  
Exposure time: 8 d  
Method: OECD Test Guideline 205

contact LD50 (Apis mellifera (bees)): > 100 µg/b  
Method: OEPP/EPPO Test Guideline 170  
GLP: yes

oral LD50 (Apis mellifera (bees)): > 1000 mg/b

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Method: OEPP/EPPO Test Guideline 170

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

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

**thifensulfuron-methyl (ISO):**

Toxicity to fish : Remarks: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50 (Fish): 0.1 mg/l  
 Exposure time: 96 h  
 Remarks: estimated

Toxicity to fish (Chronic toxicity) : NOEC (Fish): 0.1 mg/l  
 Exposure time: 28 d  
 Remarks: Estimated value

**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

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 265 mg/l  
 Exposure time: 48 h  
 Test Type: static test  
 Method: Method Not Specified.

EC50 (Daphnia magna (Water flea)): 390 mg/l  
 Exposure time: 48 h  
 Test Type: Immobilization  
 Method: Method Not Specified.

**Sucrose:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l  
 Exposure time: 72 h  
 Test Type: static test  
 Method: Method Not Specified.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l  
 Exposure time: 96 h



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

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h

NOEC (Algae): 5,600 mg/l  
Exposure time: 72 h

### Persistence and degradability

#### Components:

##### **Rimsulfuron:**

Biodegradability : Result: Not readily biodegradable.

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

Biodegradability : Remarks: Biodegradation is not applicable.

##### **Sucrose:**

ThOD : 1.12 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)  
Sensitizer: OH radicals  
Concentration: 1,500,000 1/cm<sup>3</sup>  
Rate constant: 1.1479E-10 cm<sup>3</sup>/s  
Method: Estimated.

### Bioaccumulative potential

#### Components:

##### **Rimsulfuron:**

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

##### **Kaolin:**

Partition coefficient: n-octanol/water : Remarks: Partitioning from water to n-octanol is not applicable.

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

Partition coefficient: n-octanol/water : Remarks: Partitioning from water to n-octanol is not applicable.

##### **Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde:**

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

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### **Sucrose:**

Bioaccumulation : Bioconcentration factor (BCF): 3  
Method: Estimated.

Partition coefficient: n-octanol/water : Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
Potential for mobility in soil is very high (Koc between 0 and 50).  
  
log Pow: -3.7 - -3.67  
Method: Estimated.  
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

### **Balance:**

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

### **Mobility in soil**

#### Components:

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

Distribution among environmental compartments : Remarks: Relevant data not available.

### **Sucrose:**

Distribution among environmental compartments : Koc: 3.16  
Method: Estimated.  
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

### **Balance:**

Distribution among environmental compartments : Remarks: No relevant data found.

### **Other adverse effects**

#### Components:

##### **Rimsulfuron:**

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

### **Kaolin:**

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

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of substances that deplete the ozone layer.

**sodium carbonate:**

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde:**

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Sucrose:**

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Balance:**

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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**SECTION 13. DISPOSAL CONSIDERATIONS**
**Disposal methods**

Waste from residues : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S.  
(Rimsulfuron, Thifensulfuron-methyl)  
Class : 9  
Packing group : III  
Labels : 9

**IATA-DGR**

UN/ID No. : UN 3077  
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.  
(Rimsulfuron, Thifensulfuron-methyl)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo : 956  
aircraft)  
Packing instruction (passen- : 956  
ger aircraft)

**IMDG-Code**

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S.  
(Rimsulfuron, Thifensulfuron-methyl)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes  
Remarks : Stowage category A

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation****49 CFR**

Not regulated as a dangerous good

**Further information**

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

**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.

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### SECTION 15. REGULATORY INFORMATION

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### US State Regulations

##### Pennsylvania Right To Know

Kaolin	1332-58-7
Disodium hydrogen phosphate	7558-79-4
Sucrose	57-50-1

##### California Prop. 65

WARNING: This product can expose you to chemicals including Kaolin, Quartz, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### The ingredients of this product are reported in the following inventories:

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

#### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

#### Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 352-853

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

#### CAUTION

Causes moderate eye irritation  
Harmful if absorbed through skin

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### SECTION 16. OTHER INFORMATION

#### Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	:	Dow Industrial Hygiene Guideline
OSHA CARC	:	OSHA Specifically Regulated Chemicals/Carcinogens
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
Dow IHG / TWA	:	Time weighted average
OSHA CARC / PEL	:	Permissible exposure limit (PEL)
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - 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

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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