

Safety Data Sheet

DIMILIN® SC

Version 1.9 Revision Date: 05/01/2015 MSDS Number: 400000004081 Country: US
Language: EN

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DIMILIN® SC
Product code : 400000004081
Chemical nature : Diflubenzuron

Manufacturer or supplier's details

Company name of supplier : MacDermid Crop Solutions Inc.
Address : 245 Freight Street
Waterbury, CT United States of America 06702
Telephone : (US) +1 866-430-2775

Recommended use of the chemical and restrictions on use

Recommended use : Insect Growth Regulator
Restrictions on use : Agriculture, For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING!	
Appearance	liquid
Colour	off-white, to, tan
Odour	slight
Hazard Summary	Harmful if inhaled. Very toxic to aquatic life with long lasting effects.

OSHA Regulatory status : This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

GHS Classification

Acute toxicity (Inhalation) : Category 4
Acute aquatic toxicity : Category 1
Chronic aquatic toxicity : Category 1

GHS Label element

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Hazard pictograms



Signal word

: Warning

Hazard statements

: H332 Harmful if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Inhalation

: Harmful if inhaled.
Occupational health effects due to inhalation of mineral dusts incorporating crystalline silica (quartz, cristobalite, tridymite), crystalline silicates (kaolin, talc) graphite or coal.

Skin

: May irritate skin.

Eyes

: May irritate eyes.

Ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Aggravated Medical Condition

: None known.

Symptoms of Overexposure

: The absorption of this product into the body may lead to the formation of methaemoglobine that, in sufficient concentration, causes cyanosis.

Carcinogenicity:

IARC

Group 1: Carcinogenic to humans

kaolin

1332-58-7

Group 1: Carcinogenic to humans

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcino-

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gen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

Known to be human carcinogen

kaolin

1332-58-7

Known to be human carcinogen

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Diflubenzuron

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
N-[[4-chlorophenyl]amino]carbonyl]-2,6-difluorobenzamide	35367-38-5	>= 30 - < 50
propane-1,2-diol	57-55-6	>= 5 - < 10
silicon dioxide	7631-86-9	>= 1 - < 5
kaolin	1332-58-7	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

If inhaled : If breathed in, move person into fresh air.
Give oxygen or artificial respiration if needed.
In case of bluish discoloration (lips, ear lobes, fingernails), give oxygen as quickly as possible.
Obtain medical attention.

In case of skin contact : If on clothes, remove clothes.
Wash off immediately with plenty of water for at least 15 minutes.
If skin irritation occurs, seek medical advice/attention.
Wash contaminated clothing before re-use.
Destroy contaminated shoes.

In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If symptoms persist, call a physician.

If swallowed : Do NOT induce vomiting.
Give small amounts of water to drink.
Call a physician or poison control centre immediately.
Never give anything by mouth to an unconscious person.

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Notes to physician : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Extinguishing media - large fires
Alcohol-resistant foam
(on small fires)
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : Water spray jet

Specific hazards during fire-fighting : Burning produces noxious and toxic fumes.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Fight fire with normal precautions from a reasonable distance.
Keep away from fire, sparks and heated surfaces.
Use water spray to cool unopened containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for firefighters : Body covering protective clothing, full "turn-out" gear.
Self-contained breathing apparatus (EN 133)

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Wear suitable protective clothing, gloves and eye/face protection.
Avoid contact with skin and eyes.
Ventilate the area.
Keep in properly labelled containers.
Dispose of rinse water as waste water.

Environmental precautions : Toxic to aquatic life.
Do not allow uncontrolled discharge of product into the environment.
Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Shovel into suitable container for disposal.
Large spills should be collected mechanically (remove by pumping) for disposal.
Ventilate the area.

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SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Handle and open container with care.
Protect from contamination.
Use only in well-ventilated areas.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
Wear suitable protective clothing, gloves and eye/face protection.
Wash thoroughly after handling.
Keep container closed when not in use.
- Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep only in the original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propane-1,2-diol	57-55-6	TWA	10 mg/m ³	US WEEL
silicon dioxide	7631-86-9	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m ³ / %SiO ₂ (Silica)	OSHA Z-3
		TWA	6 mg/m ³ (Silica)	NIOSH REL
kaolin	1332-58-7	TWA (Respirable fraction)	2 mg/m ³	ACGIH
		TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA (respirable fraction)	5 mg/m ³	OSHA Z-1
		TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (Total dust)	10 mg/m ³	OSHA P0
		TWA (respirable dust fraction)	5 mg/m ³	OSHA P0

- Engineering measures : Use mechanical ventilation for general area control.
Ensure that extracted air cannot be returned to the workplace through the ventilation system.
Ensure that eyewash stations and safety showers are close to the workstation location.

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Personal protective equipment

- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
- Hand protection
- Remarks : Chemical resistant protective gloves
- Eye protection : Safety glasses with side-shields
or
Safety goggles
- Skin and body protection : Long sleeved clothing
Remove and wash contaminated clothing before re-use.
Discard contaminated shoes.
To protect against splashes from pouring:
Rubber or plastic boots
Rubber or plastic apron
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wear suitable gloves and eye/face protection.
Avoid contact with skin, eyes and clothing.
Do not inhale aerosol.
Ensure adequate ventilation, especially in confined areas.
When using do not eat, drink or smoke.
Wash thoroughly after handling.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Contaminated work clothing should not be allowed out of the workplace.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : off-white, to, tan
- Odour : slight
- Odour Threshold : No data available
- pH : 8 - 10

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Melting point/range : Not applicable

Boiling point/boiling range : > 100 °C

Flash point : > 110 °C

Evaporation rate : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 1.188 (20 °C)

Solubility(ies)

 Water solubility : completely miscible

 Solubility in other solvents : partly soluble
 Solvent: Organic solvents

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : No data available

 Viscosity, kinematic : No data available

Self-Accelerating decomposition temperature (SADT) : Method: No information available.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions : Hazardous polymerisation does not occur.

Incompatible materials : Strong acids

Hazardous decomposition products : Carbon oxides
Nitrogen oxides (NO_x)
Hydrogen chloride gas
Hydrogen fluoride

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation

Acute toxicity

Product:

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

Acute inhalation toxicity : LC50 (Rat): 1.9 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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

Components:

propane-1,2-diol:

Acute oral toxicity : LD50 (Rat): 20,000 mg/kg
LD50 (Rabbit): 18,500 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 20,800 mg/kg

silicon dioxide:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
GLP: no

kaolin:

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

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

Skin corrosion/irritation

Product:

Species: Rabbit
Result: slight irritation

Components:

silicon dioxide:

Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit

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Result: slight irritation

Components:

silicon dioxide:

Result: No eye irritation

Respiratory or skin sensitisation

Product:

Species: Guinea pig

Result: negative

Components:

silicon dioxide:

Test Type: Maximisation Test (GPMT)

Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment : Based on available data, the classification criteria are not met.

Components:

silicon dioxide:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative
GLP: no

: Test Type: Unscheduled DNA synthesis (UDS)
Result: negative

Genotoxicity in vivo : Test Type: in vivo assay
Species: Rat (male)
Application Route: Oral
Result: negative
GLP: no

Test Type: in vivo assay
Species: Rat (male and female)
Application Route: Oral
Result: negative
GLP: no

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

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Carcinogenicity

Product:

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

Components:

silicon dioxide:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

kaolin:

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

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : Based on available data, the classification criteria are not met.

Components:

silicon dioxide:

Reproductive toxicity - Assessment : No toxicity to reproduction
No effects on or via lactation

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

N-[[4-chlorophenyl]amino]carbonyl]-2,6-difluorobenzamide:

M-Factor (Acute aquatic toxicity) : 100

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

silicon dioxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 5,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 5,000 mg/l
Exposure time: 24 h

Toxicity to algae : EC50 (Algae): 440 mg/l
Exposure time: 72 h
Remarks: Information given is based on data obtained from similar substances.

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kaolin:

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 1,100 mg/l
Exposure time: 48 h

Persistence and degradability

Components:

silicon dioxide:

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

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of waste material in compliance with all federal, state, and local regulations.
Pesticide wastes are toxic.
Do not contaminate ponds, waterways or ditches with chemical or used container.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Diflubenzuron)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

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(Diflubenzuron)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : no

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

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID,
N.O.S.
(Diflubenzuron)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Highly toxic by inhalation

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
1-Butanol	71-36-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
ethylene oxide	75-21-8	10	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

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N-[[[4-chloro-phenyl)amino]carbonyl]-2,6-difluorobenzamide 35367-38-5 41.2359 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

kaolin	1332-58-7
quartz (SiO ₂)	14808-60-7
4-chloroaniline	106-47-8
sulphuric acid	7664-93-9
ethylene oxide	75-21-8

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

ethylene oxide	75-21-8
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FIFRA Hazard Information:

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION

Harmful if absorbed through skin or inhaled. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist.

This pesticide is toxic to aquatic invertebrates. For terrestrial uses, do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic invertebrate organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product may contaminate water through drift of spray in wind. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination or water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

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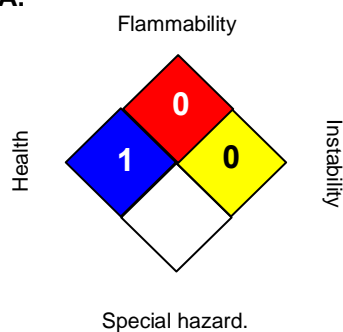
Bees and other insect pollinators can be exposed to this pesticide from: • Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications. • Ingestion of residues in nectar and pollen when the pesticide is applied as a foliar application.

When Using This Product Take Steps To: • Minimize exposure of this product to bees. • Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or offsite to pollinator attractive habitat can result in reducing immature bee viability.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	1*
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

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.

US / EN

Carechem24 International Worldwide Coverage

Emergency Phone Number

<u>Europe:</u>	All European Countries	+44 (0) 1235 239 670 (NCEC)
<u>Asia Pacific:</u>	East / South East Asia – Regional Number	+65 3158 1074
	Australia	+61 2801 44558
	New Zealand	+64 9929 1483

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	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751
	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 +91 1166 411 405
	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
<u>Middle East / Africa:</u>	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732
	All other countries	+44 (0) 1235 239 670
<u>America</u>	United States of America and Canada	+1866 928 0789 +1 215 207 0061
<u>Latin America:</u>	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670