

Safety Data Sheet

Issue Date: 04-May-2015

Revision Date: 02-May-2016

Version 2

1. IDENTIFICATION

Product Identifier

Product Name Take Off Sulfone

Other means of identification

SDS # FFN: 01120

Recommended use of the chemical and restrictions on use

Recommended Use Fertilizer.

Details of the supplier of the safety data sheet

Supplier Address

Verdesian Life Sciences, U.S., LLC.
1001 Winstead Drive, Suite 480
Cary, NC 27513

Emergency Telephone Number

Company Phone Number Business Phone: (800) 868-6446
Fax Phone: (919) 535-3652

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Yellow crystalline

Physical State Solid

Odor Faint

Classification

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Ferrous Sulfate	7782-63-0	< 5
Manganese Sulfate	10034-96-5	< 5
Zinc Sulfate	7733-02-0	< 5
Urea	57-13-6	>10
Dimethyl Sulfone	67-71-0	>10
Proprietary Potassium Compounds	Proprietary	>10
Proprietary Ammonium Compounds	Proprietary	>10
Organic Acid Salt	Proprietary	>1
Other components*	Proprietary	<44

*None of the other components contribute significant, additional hazards at the concentrations present in this product.

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

General Advice	Provide this SDS to medical personnel for treatment.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.
Inhalation	Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician / poison center if individual's condition declines or if symptoms persist.
Ingestion	Do not induce vomiting. Rinse mouth. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Most important symptoms and effects

Symptoms	May cause eye, skin and respiratory tract irritation. Will cause gastrointestinal tract irritation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

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

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Product is not flammable.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Ventilate area of leak or spill.
Environmental Precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Avoid creating dust. Sweep up and shovel into suitable containers for disposal. Discard any product, residue, disposable container or liner in full compliance with federal, state, and local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Wash thoroughly after handling. Use personal protection recommended in Section 8. Avoid generation of dust. Do not breathe dust. Avoid contact with skin, eyes or clothing.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials Strong oxidizing agents. Strong acids. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Proprietary	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe
Proprietary	TWA: 10 mg/m ³ particulate matter containing no asbestos and <1% crystalline silica synthetic nonfibrous	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear eye/face protection.

Skin and Body Protection Wear suitable protective clothing.

Respiratory Protection Ensure adequate ventilation, especially in confined areas.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Solid	Odor	Faint
Appearance	Yellow crystalline	Odor Threshold	Not determined
Color	Yellow		
Property	Values	Remarks • Method	
pH	6.0 (10% solution)		
Melting Point/Freezing Point	> 110 °C / 230 °F		
Boiling Point/Boiling Range	Not determined		
Flash Point	Not determined		
Evaporation Rate	< 1.0	(butyl acetate = 1)	
Flammability (Solid, Gas)	n/a-liquid		
Upper Flammability Limits	Not determined		
Lower Flammability Limit	Not determined		
Vapor Pressure	Not determined		

Vapor Density	Not determined
Specific Gravity	Not determined
Water Solubility	Not determined
Solubility in other solvents	Not determined
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Avoid generation of dust.

Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Direct contact with eyes may cause temporary irritation.
Skin Contact	May cause temporary irritation on skin contact.
Inhalation	Dusts of this product may cause irritation of the nose, throat, and respiratory tract.
Ingestion	May cause discomfort if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Proprietary	> 5 g/kg (Rat)	> 5 g/kg (Rabbit)	-
Proprietary	>5,000 mg/kg Rat	-	-
Proprietary	= 6600 mg/kg (Rat)	-	-
Proprietary	= 8471 mg/kg (Rat)	-	-
Proprietary	> 5000 mg/kg (Rat)	> 5000 mg/kg (Rat)	> 2.05 g/m ³ (Rat) 4 h
Proprietary	> 1 g/kg (Rat)	-	-

Proprietary	= 3400 mg/kg (Rat)	-	-
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Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Proprietary	2900: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	653: 96 h <i>Lepomis macrochirus</i> mg/L LC50 3550: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 510 - 880: 96 h <i>Pimephales promelas</i> mg/L LC50 static		890: 48 h <i>Daphnia magna</i> mg/L EC50
Proprietary		16200 - 18300: 96 h <i>Poecilia reticulata</i> mg/L LC50		3910: 48 h <i>Daphnia magna</i> mg/L EC50 Static 10000: 24 h <i>Daphnia magna</i> Straus mg/L EC50

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Proprietary	-1.59

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

<u>Note</u>	The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.
<u>DOT</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Proprietary	Present	X		Present		Present	X		X	X
Proprietary	Present		X			Present				X
Proprietary	Present	X		Present		Present	X	Present	X	X
Proprietary	Present	X		Present		Present	X	Present	X	X
Proprietary	Present	X		Present			X	Present	X	X
Proprietary							X			X
Proprietary	Present	X		Present		Present	X	Present	X	X
Proprietary	Present	X		Present		Present	X	Present	X	X
Proprietary		X		Present		Present	X		X	X

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Proprietary	X	X	X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	1	0	0	Not determined
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection
	1	0	0	C

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 Revision Note: Address Change

Disclaimer

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.

End of Safety Data Sheet