

Safety Data Sheet

TERRAZOLE® 35% WETTABLE POWDER

Version 1.10 Revision Date: 05/05/2015 MSDS Number: 400000003983 Country: US
Language: EN

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TERRAZOLE® 35% WETTABLE POWDER

Product code : 400000003983

Manufacturer or supplier's details

Company name of supplier : MacDermid Agricultural Solutions, Inc

Address : 245 Freight St
Waterbury, CT United States of America 06702

Telephone : (800) 423-8569

Recommended use of the chemical and restrictions on use

Recommended use : Fungicide

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING!	
Appearance	powder
Colour	grey
Odour	sweet, musty
Hazard Summary	Suspected of causing cancer. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. 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

Carcinogenicity : Category 2

Acute aquatic toxicity : Category 1


Chronic aquatic toxicity : Category 1

GHS Label element

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Hazard pictograms : 

Signal word : Warning

Hazard statements : H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
Response:
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

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

Skin : Contact with dust can cause mechanical irritation or drying of the skin.

Eyes : Dust contact with the eyes can lead to mechanical irritation.

Chronic Exposure : Cancer

Aggravated Medical Condition : None known.

Symptoms of Overexposure : No information available.

Carcinogenicity:

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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.

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NTP

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole	2593-15-9	>= 30 - < 50
silica gel	112926-00-8	>= 10 - < 20
quartz (SiO ₂)	14808-60-7	>= 1 - < 5
sodium 2-[methyloleoylamino]ethane-1-sulphonate	137-20-2	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

- If inhaled : Remove to fresh air.
Give oxygen or artificial respiration if needed.
Call a POISON CENTER or doctor/ physician.
- In case of skin contact : Remove contaminated clothing and shoes.
Wash off immediately with plenty of water for at least 15 minutes.
Call a POISON CENTER or doctor/ physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
Call a POISON CENTER or doctor/ physician.
- If swallowed : Call a physician or poison control centre immediately.
If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.
Never give anything by mouth to an unconscious person.
- 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

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Water spray

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 : 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 firefighters : In the event of fire, wear self-contained breathing apparatus.

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.

Environmental precautions : Prevent leaks and prevent soil / water pollution caused by leaks.

Methods and materials for containment and cleaning up : Sweep up and shovel into suitable containers for disposal.
Avoid dust formation.
In accordance with local and national regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Wear suitable protective equipment.
Keep container tightly closed.
Avoid formation of dust and aerosols.

Conditions for safe storage : Keep in a dry, cool place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
silica gel	112926-00-8	TWA	6 mg/m ³	OSHA P0
		TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3

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		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 (Dust)	80 mg/m ³ / %SiO ₂ (Silica)	OSHA Z-3
		TWA	6 mg/m ³ (Silica)	NIOSH REL
		TWA	6 mg/m ³ (Silica)	NIOSH REL
quartz (SiO ₂)	14808-60-7	TWA (Respirable fraction)	0.025 mg/m ³	ACGIH
		TWA (total dust)	30 mg/m ³ / %SiO ₂ +2	OSHA Z-3
		TWA (respirable)	250 mppcf / %SiO ₂ +5	OSHA Z-3
		TWA (respirable)	10 mg/m ³ / %SiO ₂ +2	OSHA Z-3
		TWA (Respirable fraction)	0.1 mg/m ³	OSHA P0
		TWA (respirable dust fraction)	0.1 mg/m ³	OSHA P0
		TWA (Respirable fraction)	0.025 mg/m ³ (Silica)	ACGIH
		TWA (respirable dust)	0.05 mg/m ³ (Silica)	NIOSH REL
		TWA (Respirable fraction)	0.025 mg/m ³ (Silica)	ACGIH
		TWA (respirable dust)	0.05 mg/m ³ (Silica)	NIOSH REL

Personal protective equipment

Respiratory protection : Respirator with a dust filter

Hand protection

Remarks : Impervious butyl rubber gloves Replace when worn.

Eye protection : Safety glasses

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : powder

Colour : grey

Odour : sweet, musty

Odour Threshold : No data available

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pH : 7 - 9

Melting point/freezing point : 155 °C

Boiling point/boiling range : Not applicable

Flash point : > 110 °C

Evaporation rate : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Relative density : No data available

Density : 1.9 - 2.1 g/cm³

Bulk density : No data available

Solubility(ies)

 Water solubility : dispersible

 Solubility in other solvents : No data available

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

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : Not applicable

 Viscosity, kinematic : Not applicable

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

Oxidising potential : The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

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Possibility of hazardous reactions : None known.

Conditions to avoid : Contamination

Incompatible materials : Oxidizing agents

Hazardous decomposition products : Carbon oxides
Nitrogen oxides (NO_x)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, male and female): 3,266 mg/kg
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): > 2.8 mg/l
Exposure time: 4 h
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
GLP: yes

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Acute oral toxicity : LD50 (Rat): > 945 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 5.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402

silica gel:

Acute oral toxicity : LD50 (Rat): > 22,500 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit
Result: No skin irritation

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Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

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

silica gel:

Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

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

silica gel:

Result: No eye irritation

Respiratory or skin sensitisation

Product:

Species: Guinea pig
Result: Did not cause sensitisation on laboratory animals.

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Species: Guinea pig
Assessment: The product is a skin sensitiser, sub-category 1A.
Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

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

quartz (SiO₂):

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

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Genotoxicity in vivo : Test Type: in vivo assay
Result: negative

Carcinogenicity

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Carcinogenicity - Assessment : Suspected of causing cancer.

silica gel:

Carcinogenicity - Assessment : IARC Class 3, not classifiable as to carcinogenicity to humans

Reproductive toxicity

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

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

STOT - single exposure

Product:

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

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

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

STOT - repeated exposure

Product:

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

Components:

quartz (SiO₂):

Exposure routes: Inhalation

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

Repeated dose toxicity

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Species: Rat

NOAEL: 2.7 mg/kg

Application Route: Oral

Exposure time: 91 d

Target Organs: Liver

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Species: Rat
NOAEL: 20 mg/kg
Application Route: Dermal
Exposure time: 28 d

Species: Rat
NOAEL: 0.015 mg/l
LOAEL: 0.015 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 28 d

Further information

Product:

Remarks: No information available.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: No data available

Toxicity to daphnia and other :
aquatic invertebrates Remarks: No data available

Toxicity to algae :
Remarks: No data available

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.4 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 3.1 mg/l
aquatic invertebrates Exposure time: 48 h
Test Type: flow-through test
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 0.8 mg/l
Exposure time: 48 h

Toxicity to fish (Chronic tox- : NOEC: 0.12 mg/l
icity) Exposure time: 28 d
Test Type: flow-through test

Toxicity to daphnia and other : NOEC: 0.37 mg/l

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aquatic invertebrates (Chronic toxicity) Exposure time: 21 d
Test Type: flow-through test

M-Factor (Chronic aquatic toxicity) : 1

silica gel:
Toxicity to fish : LC50 (Fish): > 10,000 mg/l
Exposure time: 96 h
Test Type: static test

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 92 d pH: 5
Hydrolysis: at25 °C

Degradation half life (DT50): 98 d pH: 7
Hydrolysis: at25 °C

Degradation half life (DT50): 88 d pH: 9
Hydrolysis: at25 °C

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Bioaccumulation : Bioconcentration factor (BCF): 165

Partition coefficient: n-octanol/water : Pow: 289

Mobility in soil

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

Distribution among environmental compartments : Remarks: Moderately mobile in soils

Other adverse effects

Product:

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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.

Components:

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole:

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : 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.
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No. : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., Environmentally hazardous substance, solid, n.o.s. (Etridiazole)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 956
Packing instruction (passenger aircraft) : 956

IMDG-Code

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Etridiazole)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F

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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 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S.
(Etridiazole)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Combustible dust, Toxic by inhalation., Moderate eye irritant,
Carcinogen

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

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Chronic Health Hazard

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

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.

California Prop 65 WARNING! This product contains a chemical known to the
State of California to cause cancer.

5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole 2593-15-9
quartz (SiO₂) 14808-60-7

FIFRA Hazard Information:

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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

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing.

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment disposing of equipment washwaters.

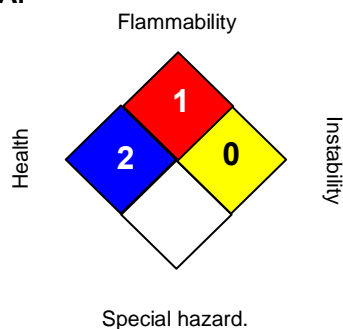
Etridiazole can contaminate surface water through spray drift. Under some conditions, etridiazole may have a high potential for runoff into surface water for several weeks post application. These conditions include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with infield canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain surface water.

Do not use or store near heat or open flame.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0

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

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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.

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
	China	+86 532 8388 9090
	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