Material Safety Data Sheet

REASON® 500 SC FUNGICIDE

MSDS Number: 102000003216
MSDS Version 2.2
Revision Date: 03/01/2007

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name	REASON® 500 SC FUNGICIDE
MSDS Number	102000003216
Chemical Family	Imidazole
EPA Registration No.	264-695

Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-866-99BAYER (1-866-992-2937)

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Fenamidone	161326-34-7	44.40
Trade Secret Ingredient(s)		

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! Moderate eye irritation. Avoid contact with skin, eyes and clothing. Harmful if inhaled. Avoid breathing spray mist. Remove and wash contaminated clothing before re-use. Wash thoroughly with soap and water after handling.

Physical State liquid opaque

Odor slight

Appearance off-white

Routes of Exposure Eye contact, Skin contact, Inhalation

Immediate Effects

Eye Moderate eye irritation. Avoid contact with eyes.

Skin May cause slight irritation. Avoid contact with skin and clothing.

Inhalation Harmful if inhaled. Avoid breathing spray mist.

Potential Environmental Effect	Toxic to aquatic organisms. Toxic to fish. Toxic to oysters and shrimp.

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	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 physician or poison control center immediately. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin	If symptoms persist, call a physician. Wash off immediately with soap and plenty of water. Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately.
Ingestion	Rinse out mouth and give water in small sips to drink. If symptoms persist, call a physician. Do NOT induce vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Notes to Physician	
Signs and Symptoms	Local: Systemic: Irritation
Hazards	Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.
Treatment	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 100 °C / > 212 °F

Autoignition Temperature	510 °C / 950 °F
Explosiveness	Not explosive
Fire and Explosion Hazards	In the event of fire the following can be released: carbon monoxide (CO) nitrogen oxides (NOx) Sulphur oxides
Suitable Extinguishing Media	Water spray, Dry powder, Carbon dioxide (CO2), Foam
Fire Fighting Instructions	Avoid contact with spilled product or contaminated surfaces. Evacuate personnel to safe areas. Keep out of smoke. Fight fire from upwind position. Cool closed containers/ tanks exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid contact with spilled product or contaminated surfaces. Keep unauthorized people away. Use personal protective equipment.
Methods for Cleaning Up	Take up with absorbent material (e.g. sand, diatomaceous earth or a proprietary absorbent material). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations. Decontaminate tools and equipment following cleanup. Dispose of rinse water as waste water. Clean contaminated surface thoroughly. Contaminated soil may have to be removed and disposed.
Additional Advice	Information regarding waste disposal, see section 13. Information regarding personal protective equipment, see section 8. Information regarding safe handling, see section 7. Do not allow product to contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Keep away from heat and sources of ignition.

Storing Procedures	Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Keep away from direct sunlight. Protect from freezing. Keep away from food, drink and animal feedingstuffs.
Work/Hygienic Procedures	Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.
Min/Max Storage Temperatures	Protect from freezing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	Train employees in safe use of the product. Follow all label instructions. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
Eye/Face Protection	Safety glasses / face shield
Hand Protection	Chemical resistant nitrile rubber gloves
Body Protection	Wear long-sleeved shirt and long pants and shoes plus socks.
Respiratory Protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.
Exposure Limits	This product contains material which are Trade Secret and may have Occupational Exposure Limits. If more information is required, call the product information number listed in Section 1.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	off-white
Physical State	liquid opaque
Odor	slight

Specific Gravity	1.10 - 1.15
Density	1.125 g/cm³ at 20 °C
Water solubility	dispersible
Decomposition Temperature	> 500 °C DSC ,
Viscosity	35 - 90 mPa.s

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	freezing Heat, flames and sparks.
Incompatibility	no data available
Hazardous Decomposition Products	nitrogen oxides (NOx) Sulphur oxides Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredient, fenamidone.

Acute Oral Toxicity	rat: LD50: > 5,000 mg/kg
Acute Dermal Toxicity	rabbit: LD50: > 5,000 mg/kg
Acute Inhalation Toxicity	rat: LC50: > 0.9 mg/l Exposure time: 4 h Determined in the form of a respirable aerosol. Highest attainable concentration. No deaths rat: LC50: > 3.6 mg/l Exposure time: 1 h Determined in the form of a respirable aerosol. Extrapolated from the 4 hr LC50.
Skin Irritation	rabbit: Slight irritation.
Eye Irritation	rabbit: Mild eye irritation.

Sensitization guinea pig: Non-sensitizing.

Chronic Toxicity Fenamidone caused liver and/or thyroid effects in chronic toxicity studies in rats and dogs.

Assessment Carcinogenicity
Fenamidone was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH
None.
NTP
None.
IARC
None.
OSHA
None.

Reproductive & Developmental Toxicity REPRODUCTION: Fenamidone was not a reproductive toxicant in a two-generation study in rats.

DEVELOPMENTAL TOXICITY: Fenamidone was not a primary developmental toxicant in rats and rabbits. Developmental effects (e.g., delayed ossifications) were observed in rats but were considered secondary to maternal toxicity.

Neurotoxicity Fenamidone was not a neurotoxicant in acute, subchronic or developmental neurotoxicity screening studies in rats.

Mutagenicity Fenamidone is not mutagenic or genotoxic based on the overall weight of evidence from a battery of in vitro and in vivo mutagenicity studies.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to Fish

Rainbow trout (Oncorhynchus mykiss)
LC50: 0.74 mg/l
Exposure time: 96 h

Bluegill sunfish
LC50: 0.74 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fenamidone.

Oncorhynchus mykiss (rainbow trout)
LC50: 0.74 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fenamidone.

Cyprinodon variegatus (sheepshead minnow)
LC50: 2.5 mg/l
Exposure time: 96 h

	The value mentioned relates to the active ingredient fenamidone.
Toxicity to Aquatic Plants	Scenedesmus subspicatus IC50: 3.4 mg/l Exposure time: 72 h
Acute Toxicity to Aquatic Invertebrates	Water flea (Daphnia magna) static test EC50: 0.055 mg/l Exposure time: 48 h Daphnia EC50: 0.19 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient fenamidone. Mysidopsis bahia (mysid shrimp) EC50: 0.069 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient fenamidone. Eastern Oyster EC50: 0.120 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient fenamidone.
Toxicity to other organisms	Acute Oral Bobwhite quail LD50: > 2,000 mg/kg The value mentioned relates to the active ingredient fenamidone. Short Term Dietary Bobwhite quail > 5,200 ppm Exposure time: 5 d Short Term Dietary Mallard duck LC50: > 5,000 ppm Exposure time: 5 d
Environmental Precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label. Do not allow to get into surface water, drains and ground water.

Ecological Information The ecological data given are those of the active ingredient.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Dispose in accordance with all local, state/provincial and federal regulations. Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility. Follow advice on product label and/or leaflet.

Container Disposal Triple rinse containers. Puncture container to avoid re-use. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not Regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:

Compounds, Tree or WeedKilling, N.O.I., other than poison; Having a density of greater than 20 LBS. per cubic foot

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 264-695

US Federal Regulations

TSCA list
None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.

SARA Title III - Section 302 - Notification and Information
None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.

US States Regulatory Reporting

CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients
None.

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated for general editorial purposes. Updated Section 7: Handling and Storage; Section 9: Physical and Chemical Properties; Section 10: Stability and Reactivity; Section 11: Toxicological Information; Section 13: Disposal Considerations and Section 16: Other Information.

Revision Date: 03/01/2007

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