

MATERIAL SAFETY DATA SHEET



RALLY* 40W FUNGICIDE

Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

Effective Date: 19-Jun-06
Product Code: 88805
MSDS: 007705

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Rally* 40W Fungicide

COMPANY IDENTIFICATION:

Dow AgroSciences, LLC
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Tan powdered solid with a mild odor. May cause eye irritation with corneal injury. May cause skin irritation. LD₅₀ for skin absorption is >5000 mg/kg. Oral LD₅₀ is >1000 mg/kg. Toxic to aquatic organisms and birds.
EMERGENCY PHONE NUMBER: 800-992-5994

2. COMPOSITION/INFORMATION ON INGREDIENTS:

| COMPONENT | CAS NUMBER | W/W% |
|------------------|-------------|-------------|
| Myclobutanil | 088671-89-0 | 40.0 |
| Titanium dioxide | 13463-67-7 | 0.5-0.7 |
| Quartz | 14808-60-7 | 0.6 – 1.6 |
| Balance | | 56.9 – 58.1 |

4. FIRST AID:

EYE: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc.) Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: Not applicable

FLAMMABLE LIMITS

LFL: Not applicable
UFL: Not applicable

EXTINGUISHING MEDIA: Use the following extinguishing media when fighting fires involving this material: carbon dioxide, dry chemical or water spray.

UNUSUAL HAZARDS: Pesticide particulates can become airborne. Combustion generates toxic fumes of the following: hydrogen chloride. Dusts at sufficient concentrations can form explosive mixtures with air. The minimum ignition temperature of dust cloud is 945°F (507°C) and of dust layer is 730°F (388°C).

FIREFIGHTING EQUIPMENT: Wear self-contained breathing apparatus (pressure demand NIOSH approved or equivalent) and full protective gear.

SPECIAL PROCEDURES: Contain run-off. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Sweep up small spills and place in a suitable container for disposal. Report large spills to Dow AgroSciences at 800-992-5994. Keep dust to a minimum. Keep out of sewers and open bodies of water.

Wear appropriate protective equipment when handling a spill of this material. If exposed to material during clean-up operations see Section 4 for actions to follow. Remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

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7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Do not handle material near food, feed or drinking water. Avoid high concentrations of dust in air and accumulation of dust on equipment. An airborne dust of this material can create a dust explosion. When handling and processing this material local exhaust ventilation may be required to control dust and reduce exposure to vapors. To prevent dust explosions employ bonding and grounding for operations capable of generating static electricity. Protect all equipment from explosions by following the guidelines in NFPA-68 and NFPA-69. For electrical equipment follow local codes and electrical classification NFPA-70 (the National Electrical Code), class II, division 2, group G.

STORAGE: Do not store this material near food, feed or drinking water. Store in a well-ventilated area. Store in a dry area. Store out of direct sunlight in a cool place. The minimum recommended storage temperature for this material is 34°F (1°C). The maximum recommended storage temperature for this material is 120°F (49°C).

OTHER: Completely empty bag into application equipment. Dispose empty bag in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE(S):

Myclobutanil: Dow AgroSciences Industrial Hygiene Guide is 1 mg/M³ TWA and 3 mg/M³ STEL.

Clay: The ACGIH TLV is 2 mg/M³, respirable, A4. The OSHA PEL is 15 mg/M³ total dust and 5 mg/M³ respirable fraction.

Titanium Dioxide: ACGIH TLV is 10 mg/M³. OSHA PEL is 15 mg/M³, total dust.

Silica, crystalline (Quartz): ACGIH TLV is 0.1 mg/M³ respirable for tripoli, and fused silica, 0.05 mg/M³ (respirable) for cristobalite, tridymite, and quartz. Quartz has an A2 designation. OSHA PEL is (30 mg/M³)/(%SiO₂+2) total dust, (250 mppcf)/(%SiO₂+5) or (10 mg/M³)/(%SiO₂+2) respirable for quartz, tripoli, and fused silica; the value for cristobalite and tridymite is 1/2 the value calculated from the respirable dust formula for quartz.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles.

SKIN PROTECTION: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

HAND PROTECTION: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile, Polyvinyl Chloride (PVC or Vinyl).

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. If respiratory irritation is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: organic vapor cartridge with a particulate pre-filter.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES:

COLOR: Tan

STATE: Powdered solid

ODOR: Mild

pH: 7.5 to 8.5 Aqueous suspension

VISCOSITY: Not applicable

SPECIFIC GRAVITY (Water = 1): 0.3 to 0.35 g/cc (bulk density)

VAPOR DENSITY (Air = 1): Not applicable

VAPOR PRESSURE: Not applicable

MELTING POINT: Not available

BOILING POINT: Not applicable

SOLUBILITY IN WATER: Dispersible

PERCENT VOLATILITY: 0%

EVAPORATION RATE (Bac = 1): Not applicable

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10. STABILITY AND REACTIVITY:

STABILITY: This material is stable under normal storage conditions.

INCOMPATIBILITY: Avoid contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None known.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause moderate eye irritation. May cause moderate corneal injury. Dust may irritate eyes.

SKIN: Brief contact may cause slight skin irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rabbits is estimated to be >5,000 mg/kg.

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The oral LD₅₀ for rats is estimated to be >1,600 mg/kg.

INHALATION: Dust may cause irritation of the upper respiratory tract (nose and throat) and lungs.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For the active ingredient, in animals, effects have been reported on the following organs: liver, testes, adrenal gland, kidney and thyroid. Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

CANCER INFORMATION: The active ingredient did not cause cancer in laboratory animals. Crystalline silica has been shown to cause cancer in laboratory animals and humans. Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation

studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titanium dioxide was not carcinogenic in laboratory animals in lifetime feeding studies.

TERATOLOGY (BIRTH DEFECTS): The active ingredient did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses non-toxic to the mother.

REPRODUCTIVE EFFECTS: The active ingredient, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

MUTAGENICITY: The active ingredient, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

No relevant information found.

DEGRADATION AND PERSISTENCE:

No relevant information found.

ECOTOXICOLOGY:

Based largely or completely on information for myclobutanil.

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

Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).

Material is slightly toxic to birds on an acute basis (LD₅₀ is between 501 and 2000 mg/kg).

Acute contact LD₅₀ in honeybee (*Apis mellifera*) is >100 µg/bee.

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13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: 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 and regulations.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For all package sizes and modes of transportation:
This material is not regulated for transport

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

| CHEMICAL NAME | CAS NUMBER | CONCENTRATION |
|---------------|-------------|---------------|
| MYCLOBUTANIL | 088671-89-0 | 40% |

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

WARNING: This product contains a chemical(s) known to the State of California to be a reproductive and developmental toxic. The chemical is myclobutanil (CAS # 088671-89-0).

WARNING: This product contains a chemical known to the State of California to cause cancer. The chemical is crystalline silica (quartz) (CAS # 014808-60-7).

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

| CHEMICAL NAME | CAS NUMBER | LIST |
|---------------|-------------|------|
| MYCLOBUTANIL | 088671-89-0 | NJ2 |

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

| | |
|--------------|---|
| Health | 2 |
| Flammability | 1 |
| Reactivity | 0 |

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**COMPREHENSIVE ENVIRONMENTAL RESPONSE
COMPENSATION AND LIABILITY ACT (CERCLA, or
SUPERFUND):** To the best of our knowledge, this product
contains no chemical subject to reporting under CERCLA.

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 2, 3, 4, 8, 11, 12, 13, 15
Reference: DR-0381-6180
Replaces MSDS Dated: 9/26/03
Document Code: D03-867-003
Replaces Document Code: D03-867-002

The Information Herein Is Given In Good Faith, But No
Warranty, Express or Implied, Is Made. Consult Dow
AgroSciences for Further Information.