

MATERIAL SAFETY DATA SHEET

Agricultural Products Group
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EMERGENCY TELEPHONE NUMBERS:

BASF Corporation: 1 (800) 832-HELP

CHEMTREC: 1 (800) 424-9300

Product No.: 580079

Headline™ fungicide

Date Prepared: 3/27/2000 Date Revised: 10/10/2002

SECTION I

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| Trade Name: Headline™ fungicide |
| Chemical Name: Carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-, methyl ester |
| Synonyms: Pyraclostrobin Formula: C(19) H(18) N(3) O(4) Cl |
| Chemical Family: Strobilurin Mol Wt: 387.83 |

SECTION II - INGREDIENTS

| COMPONENT | CAS NO. | % | PEL/TLV - SOURCE |
|-------------------------|-------------|-------|------------------------------------|
| Pyraclostrobin | 175013-18-0 | 23.6 | Not established |
| Petroleum solvent | 64742-94-5 | 66.5 | 15 ppm recommended by manufacturer |
| containing naphthalene | 91-20-3 | (9.3) | 10 ppm TWA; 15 ppm STEL - OSHA |
| Other inert ingredients | N/A | 9.9 | Not established |

SARA Title III Section 313: Yes

SECTION III - PHYSICAL DATA

| | |
|--|--|
| BOILING/MELTING POINT@760mm Hg: N/D | pH: 6.4 (2 % aqueous) |
| VAPOR PRESSURE mmHg @ 20°C: .053 | |
| SPECIFIC GRAVITY OR BULK DENSITY: 1.06 g/mL | |
| SOLUBILITY IN WATER: 1.9 ppm in DI water - emulsifiable | |
| APPEARANCE: Dark yellow to brown liquid | ODOR: Aromatic INTENSITY: Faint |

SECTION IV - FIRE AND EXPLOSION DATA

| | |
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| FLASH POINT (TEST METHOD): 208 °F (98° C) | AUTOIGNITION TEMP: N/D |
| FLAMMABILITY LIMITS IN AIR (% BY VOL): | LOWER: N/D UPPER: N/D |
| NFPA 704 HAZARD CODES | |
| HEALTH: 2 | FLAMMABLE: 1 INSTABILITY: 0 OTHER: |
| NFPA 30 STORAGE CLASSIFICATION: Class III B | |
| EXTINGUISHING MEDIUM | Use water fog, foam, or dry chemical extinguishing media. |
| SPECIAL FIREFIGHTING PROCEDURES | Firefighters should be equipped with self-contained breathing apparatus and turnout gear. |
| UNUSUAL FIRE EXPLOSION HAZARDS | None known. |

SELECT ACRONYM KEY

N/A - Not available; N/D - Not determined; N/R - Not rated; N/E - Not established

SECTION V - HEALTH DATA**TOXICOLOGICAL TEST DATA:**

Rat (male), Oral LD50 > 500 mg/kg
Rat (female) Oral LD50 = 200 - 500 mg/kg
Rat, Dermal LD50 > 4000 mg/kg
Rat, (Combined sexes) Oral LD50 > 500 mg/kg
Rat, Inhalation LC50 (4 hr) = 3.51 mg/L
Rat, Inhalation LC50 (1 hr) calculated = 14.04 mg/L
Rabbit, Eye Irritation - Moderately irritating
Rabbit, Skin Irritation - Severely irritating
Guinea pig, Dermal Sensitizer - Non-sensitizing

OSHA, NTP, or IARC Carcinogen: See "Effects of Overexposure" section

EFFECTS OF OVEREXPOSURE:

See Product Label and Directions For Use for additional precautionary statements.

Hazards to Humans and Domestic Animals.

WARNING

May be fatal if swallowed. Causes substantial but temporary eye injury. Causes skin irritation. Harmful if absorbed through skin.

Do not get in eyes, on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Avoid

contact with eyes, skin or clothing. Wear protective eyewear (goggles, face shield, or safety glasses).

Remove contaminated clothing and wash before reuse.

For a major component (petroleum solvent) of this formulation:

Slightly irritating to the eyes. Prolonged contact with skin may irritate and cause dermatitis. May aggravate an existing skin condition. Inhalation of vapor/aerosol concentrations (> 1000 ppm) are irritating to eyes and respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects, including death. Small amounts aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death. At high oral doses in rats, this component caused damage to the stomach, liver, thyroid, and urinary bladder. These effects are not relevant to humans at occupational levels of exposure.

For naphthalene (a component of petroleum solvent):

Ingestion of naphthalene results in cramps, nausea, vomiting and diarrhea, listlessness, bladder irritation and brownish urine. Inhalation of naphthalene may cause headache, confusion, and excitement. Chronic overexposure to naphthalene may result in liver and/or kidney disorders. Hemolysis, anemia, fever, hemoglobinuria, and jaundice may also occur. Those with prior blood diseases may be more severely affected.

A National Toxicology Program (NTP) report states that lifetime inhalation exposure to naphthalene resulted in increases in tumors of the nose in rats. In a previous NTP study, lifetime inhalation exposure to naphthalene increased lung tumors in female mice. The relevance of the rodent findings to humans is questionable.

Acute overexposure to solvent naphtha vapors may cause central nervous system effects, including headache, dizziness, drowsiness, and confusion. Ingestion causes nausea, vomiting, blurred vision, and CNS disorder. Aspiration of the liquid into the lungs may result in chemical pneumonitis, which may be fatal. Prolonged or repeated skin contact may cause defatting and dermatitis.

Existing medical conditions aggravated by exposure to this material: No information found for this mixture.

FIRST AID PROCEDURES

| | |
|--------------------------------|--|
| If swallowed: | 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 by a poison control center or doctor. Do not give anything to an unconscious person. |
| If on skin or clothing: | 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. |
| If in eyes: | Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. |
| If inhaled: | Move person 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 poison control center or doctor for further treatment advice. |
| Note to physician: | Contains petroleum distillate - vomiting may cause aspiration pneumonia. |
| Note: | Have the product container or label with you when calling a poison control center or doctor or going for treatment. |

SECTION VI - REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: Electrostatic charge, ignition sources, sunlight.

CHEMICAL INCOMPATIBILITY: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon and nitrogen; HCl

HAZARDOUS POLYMERIZATION: No

CONDITIONS TO AVOID: None

CORROSIVE TO METAL: No

OXIDIZER: No

SECTION VII - PERSONAL PROTECTION

PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions For Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Protective Clothing:

Chemically resistant gloves, long-sleeved shirt, and slacks.

Eye Protection:

Chemical goggles.

Respiratory Protection:

Supplied air respirators should be worn if large quantities of mist are generated or prolonged exposure possible.

Ventilation:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

SECTION VIII - ENVIRONMENTAL DATA**ENVIRONMENTAL TOXICITY DATA**

Pyraclostrobin is toxic to fish and invertebrates.

It is generally of low acute and chronic toxicity to birds, bees, terrestrial plants and aquatic plants.

Bobwhite Quail, (single dose) Oral LD50 > 2000 mg/kg bw

Bobwhite Quail, (5 day dietary feeding) Oral LC50 > 5000 mg/kg

Mallard Duck, (5 day dietary feeding) Oral LC50 > 5000 mg/kg

Daphnia magna, (48 hr) EC50 = 0.0157 mg/L

Daphnia magna, (21 day reproduction) NOEC = 0.004 mg/L

Rainbow Trout, (96 hour) LC50 = 0.0062 mg/L

Algae, (96 hour) EC50 < 1 mg/L

Bluegill Sunfish, (96 hour) LC50 = 0.0114 mg/L

Mysid, (96 hour) EC50 = 0.0042 mg/L

Sheepshead minnow, (96 hour) LC50 = 0.077 mg/L

Oyster (96 hour) EC50 = 0.0125 mg/L

SARA 311/312 REPORTING

FIRE: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: No TPQ(lbs):

SPILL AND LEAK PROCEDURES:

Contain and contact BASF at 1-800-832-HELP.

HAZARDOUS SUBSTANCE SUPERFUND: Yes

RQ(lbs): 100

WASTE DISPOSAL METHOD:

Wastes resulting from using this product may be disposed of on site or at an approved waste disposal facility.

If these wastes cannot be disposed of according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance.

HAZARDOUS WASTE 40CFR261: No

HAZARDOUS WASTE NUMBER: None

CONTAINER DISPOSAL:

Triple rinse all containers and dispose of in an approved sanitation site.

SECTION IX - SHIPPING DATA - PACKAGE AND BULK**D.O.T. PROPER SHIPPING NAME (49CFR172.101-102):**

> or = 121 gallons: Environmentally hazardous substances, liquid, n.o.s.

<121 gallons: None

HAZARDOUS SUBSTANCE**(49CFR CERCLA LIST):**

Naphthalene (RQ = 121 gallons as product)

RQ(lbs): 100

D.O.T. HAZARD CLASSIFICATION (CFR 172.101-102):**PRIMARY**

> or = 121 gallons: 9

SECONDARY

None

D.O.T. LABELS REQUIRED (49CFR172.101-102):

> or = 121 gallons: 9

**D.O.T. PLACARDS
REQUIRED (CFR172.504):**

> or = 121 gallons: Class 9

**POISON CONSTITUENT
(49CFR172.203(K)):**

None

BILL OF LADING DESCRIPTION

> or = 121 gallons: RQ, Environmentally hazardous substances, liquid, n.o.s. (naphthalene), 9, UN3082, PG III, ERG 171

< 121 gallons: Fungicides, agricultural, NOIBN

>119 gallons by water add Marine Pollutant

CC NO.:

UN/NA CODE: UN 3082

SECTION X - ADDITIONAL INFORMATION**Headline™ fungicide**

EPA Reg. No. 7969-186

KEEP OUT OF REACH OF CHILDREN**WARNING****Complete Label and Directions For Use are attached to the product.****Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

BASF Corporation

Agricultural Products Group

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DISCLAIMER

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