

Material Safety Data Sheet

Section 1: Material and Company Identification

PRODUCT NAME: MetaStar 2E Metalaxyl Fungicide

EPA Registration Number: 71532-5

INGREDIENTS: **(%w/w)**

Metalaxyl (CAS Reg. No. 57837-19-1)	
<i>N</i> -(2,6-dimethylphenyl)- <i>N</i> -(methoxyacetyl)-aniline methyl ester	23.0%

Inert Ingredients ¹	77.0%
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¹ Aromatic petroleum solvent (CAS Reg. No. 68477-31-6), alcohol-based solvent (CAS Reg. No. 97-99-4), and a proprietary emulsifier.

Chemical Class: Acylalanine fungicide

EPA Signal Word: WARNING

Manufacturer: LG Life Sciences, Ltd.
LG Twin Towers
Yoido-dong 20, Youngdungpo-gu,
Seoul, 150-721, Korea

EMERGENCY TELEPHONE NUMBERS:

CHEMTREC
BIOLOGIC, Inc.
Tel: 1 (800) 424-9300

LG International (America),Inc.
Tel: 011 (82) 2-3773-6942

U.S. Agent:
Tel: 1 (201) 816-2310

Section 2: Hazardous Ingredients

<u>MATERIAL:</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Active Ingredient: Metalaxyl	Not established	Not established
Inert Ingredients: Trade Secret	Not established ¹	Not established ¹

¹ The manufacturer of the aromatic petroleum solvent recommends the occupational exposure limit at 100 ppm total hydrocarbon based on composition. According to the AIHA WEEL Guide, the recommended airborne exposure limit for the alcohol-based solvent is 2 ppm (8 hr. TWA).

Emergency Telephone Number 1-800-424-9300

Revision Date: January 19, 2007

Section 3: Health Hazard Data

EYE: This product is an eye irritant and has the potential to cause damage to eye tissue.

SKIN CONTACT: Prolonged or repeated skin contact may irritate and cause dermatitis.

SKIN ABSORPTION: The acute dermal toxicity is considered to be low. The dermal LD₅₀ for the active ingredient is greater than 6,000 mg/kg in rabbits.

INGESTION: May be harmful if swallowed. The product ingredients are considered as low to moderate in oral toxicity. However, small amounts of the aromatic petroleum solvent aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death.

INHALATION: Prolonged or repeated inhalation of vapors may be harmful. Symptoms may include irritation to the eyes and respiratory tract, dizziness, headaches, anesthesia, drowsiness, nausea, vomiting, blurred vision, and other central nervous system effects.

SYSTEMIC (OTHER TARGET ORGANS) EFFECTS: Long-term studies with metalaxyl in laboratory animals produced increased liver weights, elevated serum alkaline phosphatase, and an increased incidence of periacinar vacuolation of hepatocytes. There were no clinical signs or adverse findings in hematology, urinalysis, or histopathology. Relatively high levels of the alcohol-based solvent are reported to cause depression of the central nervous system.

CANCER INFORMATION: Chronic feeding studies with metalaxyl in mice and rats demonstrated that there is no carcinogenic potential in laboratory animal. Based on these data, the EPA classified metalaxyl as a Group E carcinogen (evidence of non-carcinogenicity for humans). The inert ingredients are not listed as carcinogens by NTP or IARC.

TERATOLOGY (BIRTH DEFECTS): It is reported in several laboratory animal studies that metalaxyl does not cause birth defects. A oral screening developmental screening study in rats for the alcohol-based solvent indicated lower mean fetal body weights at 100 mg/kg/day.

REPRODUCTIVE EFFECTS: Metalaxyl did not interfere with fertility in animal reproduction studies. It was reported that relatively high levels of the alcohol-based solvent may cause decreased male fertility.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Based on a number of *in vitro* and *in vivo* studies, it was concluded that metalaxyl is not a mutagen. There are no reports that the inert ingredients in this product have any mutagenic potential.

Section 4: First Aid Procedures

- IF SWALLOWED:** Call a physician or poison control center immediately for treatment advice. Do not induce vomiting as it may cause aspiration pneumonia. Do not give anything by mouth to an unconscious person.
- IF IN EYES:** Hold eyelids 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. Call a physician or poison control center for treatment advice.
- IF INHALED:** Remove victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a physician or poison control center for treatment advice.
- IF ON SKIN:** Remove contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a physician or poison control center for treatment advice.
- NOTE TO PHYSICIAN:** Consideration should be given to gastric lavage with an endotracheal tube in place. A slurry of activated charcoal in water may be left in the stomach. Give a saline laxative followed by symptomatic and supportive care.

Section 5: Physical Hazard Information

CHEMICAL & PHYSICAL PROPERTIES:

- Color:** Light Amber
- Physical State:** Liquid
- Odor:** Mild petroleum odor
- Density:** 8.84 lbs/gal (1.06 gm/cm³)
- Solubility:** Dispersible in water
- Viscosity:** 40 cps @ 30 rpm
- Stability:** Stable

FIRE & EXPLOSION HAZARDS:

Flash Point: >200° F (93°C)

Method Used: TCC

Flammability Limits: LFL: 1.5%
UFL: 11.8%

Extinguishing Media Foam, carbon dioxide, or dry chemical is preferred.
Soft stream water fog only if necessary.

Fire & Explosion Hazards: Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion.

Fire Fighting Instructions: Evacuate the area and fight fire upwind from a safe distance to avoid hazardous decomposition products. Foam fire-extinguishing system is preferred because uncontrolled water can spread possible contamination.

Fire Fighting Equipment: Use positive-pressure self-contained breathing apparatus and full protective equipment.

REACTIVITY:

Stability: (CONDITIONS TO AVOID) Avoid heating above 200°F (93°C). Contains a petroleum distillate solvent which will burn. This product is volatile and may produce vapors which can ignite or explode.

Incompatibility: (SPECIFIC MATERIALS TO AVOID) Oxidizers, strong acids, and strong bases.

Hazardous Decomposition: Under fire conditions, carbon dioxide and carbon monoxide can be formed.

Hazardous Polymerization: Will not occur.

Section 6: Environmental Protection

IN CASE OF SPILLS OR LEAKS: Wear protective clothing as described in Section 7 (Personal Protection and Precautions) of this MSDS. Absorb liquid with material such as clay, sand, sawdust, or dirt. Sweep up and place in a suitable container for disposal and label the contents. Area can be washed down with a suitable solution of bleach or soda ash and an appropriate alcohol (methanol, ethanol, or isopropanol). Follow this by washing with a strong soap and water solution. Absorb any excess liquid as indicated above, and add to the disposal container. Keep product, contaminated materials and wash water out of streams and sewers. Wash exposed body areas thoroughly after handling.

DISPOSAL METHOD: Do not contaminate food, feed, or water by storage or cleaning of equipment. Wastes resulting from the use of this product may be disposed of on site, if approved waste handling facilities are available, or at an approved waste handling facility.

ENVIRONMENTAL PRECAUTIONS: Based on existing data, metalaxyl is moderately stable in water, with an approximate half-life ranging from 100 to 200 days depending on the pH. Metalaxyl is moderately persistent in soil, with an approximate half-life ranging from 40 to 70 days under aerobic and anaerobic conditions. Metalaxyl may be highly mobile in certain soil types and has the potential to affect groundwater quality. Data indicate that metalaxyl has a very low order of toxicity to aquatic organisms, birds, bees, and other wildlife. Do not apply this product directly to water, surface waters, or water runoff areas. Avoid spray drift or other means of contamination to non-target areas.

Section 7: Personal Protection and Precautions

EXPOSURE GUIDELINE(S):

Metalaxyl:	None established.
Aromatic petroleum solvent:	None established. Supplier recommends a guideline of 100 ppm total hydrocarbon based on composition.
Alcohol-based solvent:	AIHA WEEL recommends the airborne exposure limit at 2 ppm (8 hour TWA)

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline. Ventilate all transport vehicles prior to unloading.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if

the exposure guideline is exceeded, use an air-purifying respirator approved for pesticides (U.S. NIOSH/MSHA, EU CEN, or comparable certification organization).

EYE/FACE PROTECTION: Use chemical protective goggles or a face shield.

SKIN PROTECTION: Wear coveralls or long-sleeved shirt and long pants, chemical protective gloves (nitrile, neoprene, or Viton[®] brand), head covering and shoes plus socks. For increased exposures, wear a full body cover barrier suit, such as a PVC rain suit. Contaminated leather articles, such as shoes, belts, and watchbands, should be removed and destroyed. Launder all work clothing before reuse. Keep work clothing separated from household laundry.

SPECIAL PRECAUTIONS FOR HANDLING AND STORAGE: See product label. Harmful if swallowed, inhaled, or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating or smoking. Avoid breathing dust vapor, or spray mist. Store in a cool, dry place and away from heat. Keep out of reach of children and animals. Keep away from food, feedstuffs, and water supplies.

Section 8: DOT Hazardous Materials Information

DOT Classification: Ground Transport – NAFTA
Not regulated

B/L Freight Classification : Fungicides, NOI, O/T Poison

Comments : Water Transport – International
Not regulated

Section 9: Regulatory Information

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
Metalaxyl	578737-19-1	23%

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

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A fire hazard

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

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:

Category	Rating
Health	1
Flammability	2
Reactivity	0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA which may require reporting of releases:

Category:

Chemical Name	CAS Number	RQ	% in Product
Metalaxyl	57837-19-1	not listed	23.0%

Issue Date: December 26, 2006

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, expressed 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, and local laws and regulations. See MSDS for health and safety information.