



# Material Safety Data Sheet

## ROOTGUARD® Balan® Masterbatch

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July 1, 2008

### ROOTGUARD® MASTERBATCH

is to be used exclusively to blend with polyolefin resins to manufacture drip irrigation emitters.

### 1. Chemical Information

**EPA Signal Word:** Caution

**EC No.:** 217-465-2

**Active Ingredient:** Benfluralin (27%)

**CAS No.:** 1861-40-1

**Chemical Name:** N-Butyl-N-ethyl-a,a,a-trifluoro-2,6-dinitro-p-toluidine

**Chemical Class:** Herbicide

### 2. Composition Information

INGREDIENT NAME	OSHA – PEL	ACGIH – TLV	OTHER	NTP/IARC/OSHA CARCINOGEN
Benfluralin (27%)* CAS No.: 1861-40-1	Not applicable	Not applicable	Not established	No
Low Density Polyethylene (48%)	Non-hazardous as defined by 29 CFR 1910.1200.			
Carbon Black (25%)* CAS No: 1333-86-4	3.5 mg/m <sup>3</sup>	3.5 mg/m <sup>3</sup>	OSHA/NIOSH ACGIH – No carcinogen rating	IARC 2B carcinogen (possibly carcinogenic to humans)

\* These materials are compounded into the low density polyethylene carrier.

### 3. Hazard Identification

#### Physical Properties

**Appearance:** Yellow-orange crystalline solid. Liquid above 151°F.

**Odor:** No appreciable odor

#### Symptoms of Overexposure

The more commonly reported adverse effects following exposure to benfluralin products are skin irritation and rash, nausea, vomiting, cramping, and diarrhea, eye irritation, dizziness, headache, and other minor central nervous system effects, fever and/or chills, and muscle aches or weakness.

#### Medical Conditions Likely to be Aggravated by Exposure

Pre-existing medical conditions involving the above symptoms may be aggravated by exposure.

## Primary Routes of Exposure

Skin and inhalation. Product can cause substantial but temporary eye injury.

## HEALTH HAZARD INFORMATION

OSHA STANDARD: NA

NIOSH RECOMMENDED LIMIT: NA

ACGIH RECOMMENDED LIMIT: NA

### TOXICOLOGY

#### A. ACUTE TOXICITY

**DERMAL:** No apparent toxicity to skin for technical benefin. Solvent system in liquid concentrate may be irritating to skin (58).

**ORAL:** LD<sub>0</sub> = >10,000 mg/kg (adult rat), >2,000 mg/kg (dog, chicken, rabbit) (technical benefin) (58).  
LD<sub>50</sub> = 800 mg/kg (newborn rat, technical benefin) (58).  
LD<sub>50</sub> = 5,000\* mg/kg (adult rat, Balan LC; \* 5 ml/kg, toxicity due entirely to solvent system) (58).

**INHALATION:** No apparent danger through inhalation of technical benefin (58).

**EYES:** Solvent system in liquid concentrate may be irritating to eyes (58).

#### B. SUBACUTE AND CHRONIC TOXICITY:

Safe levels after 3 months feeding:

Rats - 1,250 ppm in diet.

Dogs - 500 ppm (12.5 mg/kg in capsule administered daily) (58).

In 2-yr feeding trials NEL for rats was 1,000 mg/kg diet. LC<sub>50</sub> for bluegill fingerlings is 0.37 mg/l (62).

## Hazardous Decomposition Products

Burning produces toxic vapors.

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health 2    Flammability 2    Reactivity 1

## 4. First Aid Measures

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If poisoning is suspected, immediately contact a physician, the nearest hospital, or the nearest Poison Control Center. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

**Ingestion:** Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. Do not induce vomiting or give anything by mouth to an unconscious person.

**Inhalation:** Remove victim to fresh air. Apply artificial respiration if indicated.

**Eye Contact:** Flush eyes with plenty of clear water for at least 15 minutes. Get medical attention.

**Skin Contact:** Remove contaminated clothing and wash skin immediately with soap and warm water.

**!! IN ALL CASES OF SUSPECTED POISONING, GET MEDICAL ATTENTION IMMEDIATELY !!**

## 5. Fire Fighting Measures

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**Flammable Limits (% in air):** Not applicable

**Auto-ignition Temperature:** Not available

### Appropriate Extinguishing Media

Considered non-flammable.

### Fire Fighting Guidance

Will emit toxic fumes as it burns. Wear full protective clothing and use self-contained breathing apparatus. Nonessential personnel should be restricted from area of intense smoke. Do not allow water run-off from fire site to enter nearby streams, ponds or lakes. Keep containers cooled with water spray.

### Unusual Fire, Explosion, and Reactivity Hazards

May emit toxic fumes when heated to decomposition. Do not allow water run-off from fire site to enter nearby streams, ponds or lakes. Keep containers cooled with water spray.

## 6. Ecological Information

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### ENVIRONMENTAL FATE:

**MOVEMENT & PARTITIONING:** Based largely or completely on information for benfluralin. Bioconcentration potential is moderate (BCF between 100 and 3000 or Logd Pow between 3 and 5). Potential for mobility in soil is slight (Koc between 2000 and 5000).

**DEGRADATION & PERSISTENCE:** Based largely or completely on information for benfluralin. Based on the stringent test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**ECOTOXICOLOGY:** Based largely or completely on information for benfluralin. Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in most sensitive species).

## 7. Handling and Storage

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### Precautions in storing

DO NOT contaminate water, food or feed by storage or disposal. Keep out of reach of children. Do not store near heat or open flame.

### Storing

Store in original container only. In case of puncture or spill, contain material and dispose of waste

### Transportation Information:

DOT Shipping Description: Not regulated by DOT

## 8. Exposure Control and Personal Protection

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**Engineering Controls:** Local exhaust ventilation is recommended for manufacture and formulation. Store in well-ventilated area. Allow closed trucks adequate time to ventilate prior to entering.

**Eye/Face:** Wear protective eyewear that is appropriate to exposure potential.

**Skin Protection:** Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

**Respiratory Protection:** Not required; however, to avoid inhalation of excess airborne dusts, use a NIOSH/MSHA approved dust/mist filtering respirator. Follow manufacturer's instructions for cleaning/maintaining personal protective equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Applicators/Handlers:** Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

**User Safety Recommendations:** Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**Keep away from children and animals!!**

## 9. Stability and Reactivity

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**Stability:** Stable

**Hazardous Polymerization:** Will not occur

**Decomposition Products:** Burning produces toxic vapors

**Hazardous Mixtures:** None known

**Conditions To Avoid:** Avoid extreme cold or heat.

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