

# MATERIAL SAFETY DATA SHEET

## SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**COMPANY ADDRESS:**

RAINBOW TREECARE SCIENTIFIC ADVANCEMENTS  
11571 K-Tel Drive  
Minnetonka, MN 55343

**EMERGENCY TELEPHONE NUMBERS:**

(800) 424-9300 (CHEMTREC, transportation and spills)

**PRODUCT NAME: Cambistat**

**CHEMICAL NAME:** (R\*,R\*)-beta-[(4-chlorophenyl)methyl]-alpha(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol

**CHEMICAL FAMILY:** Triazole Plant Growth Regulator

**PRODUCT CODE:** EPA Reg. No. 74779-3

**USE:** Regulate growth of hardwoods and ornamentals

## SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

Component	Percentage	CAS Number	OSHA PEL	ACIGH TLV
Propylene Glycol		Not Established	Not Established	Not Established
Paclobutrazol Technical	22.3%	76738-62-0	Not Established	Not Established

Ingredients not precisely identified are proprietary or non-hazardous.

## SECTION 3 - HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

**PHYSICAL PROPERTIES:** Appearance: off white/buff/beige liquid

Odor: not available

**HEALTH HAZARDS:** may cause mild eye irritation

**PHYSICAL HAZARDS:** Can decompose at high temperatures forming toxic gasses.

**UNUSUAL FIRE, EXPLOSION, AND REACTIVITY HAZARDS:**

This product will burn with flames if ignited. This product has a minimum ignition energy between 100 and 300 millijoules. Mechanical sparks, open flames, and certain hot surfaces can serve as ignition sources for this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

## SECTION 4 - FIRST AID MEASURES

**IF SWALLOWED:** Call physician or Poison Control Center immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a Poison Control Center or a physician. Do not give anything by mouth to an unconscious person.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a Poison Control Center or a physician 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 physician for further treatment advice.

**IF ON SKIN:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a Poison Control Center or physician for treatment advice.

**NOTES TO PHYSICIAN:** There is no specific antidote if this product is ingested. Treat symptomatically.

### **SECTION 5 - FIRE FIGHTING MEASURES**

**FLASHPOINT (Method):** Does not flash

**FLAMMABLE LIMITS (% in Air):** Lower: not available Upper: not available

**FIRE AND EXPLOSION HAZARD:** This product will burn with flames if ignited.

This product has a minimum ignition energy between 100 and 300 millijoules. Mechanical sparks, open flames, and certain hot surfaces can serve as ignition sources for this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

**FIRE FIGHTING INSTRUCTIONS:** Use dry chemical, foam, or CO<sub>2</sub> extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes, or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

**FIRE FIGHTING EQUIPMENT:** Wear full protective clothing and self-contained breathing apparatus with full facepiece.

### **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**IN CASE OF SPILL OR LEAK:** Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil, or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible storage container. Once all material is cleaned up and placed in a disposal container, seal the container and arrange for disposition.

This material should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

### **SECTION 7 - HANDLING AND STORAGE**

**KEEP OUT OF REACH OF CHILDREN!**

This product is not considered electrically conductive at low relative humidity.

**HANDLING:** Use in a well ventilated area.

**STORAGE:** Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, tobacco use and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

### **SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.**

**FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.**

**PERSONAL PROTECTIVE EQUIPMENT:**

**EYE PROTECTION** – Use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**CLOTHING** – Wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

**GLOVES** – Wear Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyvinyl chloride (PVC), viton.

**RESPIRATOR** – A respirator is not normally required when handling this substance. Use effective engineering controls to comply with the occupational exposure limits.

Discard clothing and other absorbent materials that have been heavily contaminated with this product. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under circumstances where air-purifying respirators may not provide adequate protection.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P, or HE filter.

#### **USER SAFETY RECOMMENDATIONS:**

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

### **9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>PHYSICAL DESCRIPTION:</b>	Off-white/buff/beige liquid
<b>ODOR:</b>	Not determined
<b>MELTING POINT:</b>	Not Applicable
<b>BOILING POINT:</b>	212°F
<b>SPECIFIC GRAVITY/DENSITY:</b>	1.09 g/ml
<b>pH:</b>	not available
<b>VAPOR PRESSURE:</b>	7.5 x 10 <sup>(-9)</sup> mmHg @ 68°F
<b>WATER SOLUBILITY:</b>	26mg/l @ 68°F in water

### **SECTION 10 - STABILITY AND REACTIVITY**

**CHEMICAL STABILITY:** Stable under standard conditions.

**CONDITIONS TO AVOID:** None known.

**INCOMPATIBILITY WITH OTHER MATERIALS:** Oxidizing agents (e.g. chlorates, nitrates)

**HAZARDOUS DECOMPOSITION PRODUCTS:** Can decompose at high temperatures forming toxic gas.

**HAZARDOUS POLYMERIZATION:** Product will not undergo polymerization.

### **SECTION 11 - TOXICOLOGICAL INFORMATION**

#### **ACUTE TOXICITY:**

Oral LD<sub>50</sub> (rat) - > 2,000 mg/Kg body weight (slightly toxic)

Dermal LD<sub>50</sub> (rat) - > 4,000 mg/Kg body weight (practically non-toxic)

Inhalation LC<sub>50</sub> (rat) – > 250mg/M<sup>3</sup>

Eye Irritation (rabbit) – slightly irritating

Skin Irritation (rabbit) – Non-Irritating

Sensitization – Not a sensitizer

#### **TOXICITY OF PACLOBUTRAZOL:**

**Reproductive/Developmental Effects:** Dose related increase in minor skeletal defects and evidence of fetotoxicity in rat studies (urogenital defects). No adverse effects seen on reproductive parameters or reproductive organs in a 2-generational rat study. Liver effects were noted at the highest dose level in the FO females and male and female offspring.

**Chronic/Subchronic Toxicity Studies:** Evidence of liver toxicity in repeat dose rodent studies at high dose levels. (1250 ppm, 90 day and 2 year tests). No effects noted in rabbit studies. No adverse health effects are expected in humans at airborne levels below the occupational exposure limit.

**Carcinogenicity:** No evidence of carcinogenicity in 2-year rodent studies.

**TOXICITY OF OTHER COMPONENTS:** Propylene Glycol: Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation. Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Chronic dietary exposure caused kidney and liver injury in experimental animals.

**TARGET ORGANS:**

**Active Ingredients**

Paclobutrazol: liver

**Inert Ingredients**

Propylene Glycol: CNS, kidney, liver

**SECTION 12 - ECOLOGICAL INFORMATION**

**ENVIRONMENTAL SUMMARY:** Paclobutrazol is practically non-toxic to birds and bees. Unlikely to be hazardous to aquatic life.

**ECO-ACUTE TOXICITY OF PACLOBUTRAZOL (based on Paclobutrazol Technical):**

Bees LC50/EC50 > 50ug/bee

Invertebrates (Water Flea) LC50/EC50 33.2 ppm

Fish (Trout) LC50/EC50 27.8 ppm

Fish (Bluegill) LC50/EC50 23.6 ppm

Birds (8-day dietary – Bobwhite Quail) LC50/EC50 > 20,000 ppm

Birds (8-day dietary – Mallard Duck) LC50/EC50 > 20,000 ppm

**ECO-CHRONIC TOXICITY OF PACLOBUTRAZOL:** Not Available

**ENVIRONMENTAL FATE OF PACLOBUTRAZOL:** The information presented here is for the active ingredient, paclobutrazol.

Soil/Environment: Soil DT50 0.5-1.0 y in general; in calcareous clay loam (pH 8.8, 14% o.m.), DT50 <42 D; in coarse sandy loam (pH 6.8, 4% o.m., DT50 >140 d. Stable in water. Mixes in water (after 24 h).

**SECTION 13 - DISPOSAL CONSIDERATIONS**

**DISPOSAL:** Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

**CHARACTERISTIC WASTE:** Not Applicable

**LISTED WASTE:** Not Applicable

**SECTION 14 - TRANSPORT INFORMATION**

**B/L FREIGHT CLASSIFICATION:** Plant Growth Inhibitor, Modifier, or Regulator

**GROUND TRANSPORT:** Not Regulated

**AIR TRANSPORT:** Not Regulated

## **SECTION 15 - REGULATORY INFORMATION**

### **EPCRA SARA TITLE III CLASSIFICATION:**

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Not Applicable

**CALIFORNIA PROPOSITION 65:** Not Applicable

**CERCLA/SARA 302 REPORTABLE QUANTITY (RQ):** None

**RCRA HAZARDOUS WASTE CLASSIFICATION (40 CFR 261):** Not Applicable

**TSCA STATUS:** Exempt from TSCA, subject to FIFRA

## **SECTION 16 - OTHER INFORMATION**

**NFPA Hazard Ratings:** Health 1, Flammability 1, Instability 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Extreme)

**HMIS Hazard Ratings:** Health 1, Flammability 1, Reactivity 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Extreme)

For non-emergency questions about this product call: 1-877-ARBORIST

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**REVISED DATE:** September 2011

**REVISED FOR:**