

Material Safety Data Sheet



Transportation and Medical Emergency Phone: 1-800-535-5053 (INFOTRAC)

General Phone: 317-580-8282

EPA Reg. No.: 71711-21-67690

Revision Date: 10/27/2009

Talus[®] 70DF Insect Growth Regulator

SePRO Corporation Carmel, IN 46032-4565

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Talus 70DF Insect Growth Regulator

COMPANY IDENTIFICATION:

SePRO Corporation

11550 North Meridian Street, Suite 600

Carmel, IN 46032-4565

www.sepro.com

Information Phone: 317-580-8282 (Monday - Friday, 8:00 am to 5:00 pm EST)

2. HAZARDOUS IDENTIFICATIONS

EMERGENCY OVERVIEW

Tan granule.

- CAUTION. Harmful if swallowed, inhaled, or absorbed through the skin. Causes moderate eye irritation.

Routes of Exposure:

- Dust inhalation
- Skin contact

Signs and Symptoms of Overexposure:

Symptoms from excessive ingestion of buprofezin technical may include subdued mood, slight muscular incoordination, and a slightly enlarged abdomen.

Potential Health Effects:

Eye Contact: Contact with this product causes moderate eye irritation.

Ingestion: No specific health effects are known for ingestion of a small amount incidental to routine handling and use. Ingestion of large amounts may be harmful (See *Signs and Symptoms of Overexposure* above).

Inhalation: Inhalation of this product is harmful. The active ingredient (buprofezin technical) is not known to be a significant irritant to the respiratory system, but excessive dust inhalation of the inert ingredients in a confined area may cause irritation and congestion of the upper respiratory tract.

Skin Contact: Absorption through the skin is harmful. This product is a moderate skin irritant but not a skin sensitizer.

Delayed/Long-Term Effects:

Carcinogenic: None of the product ingredients are listed as carcinogenic by NTP, IARC, or OSHA.

Medical Conditions Aggravated by Exposure: Excessive dust inhalation may aggravate pre-existing respiratory conditions.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Single or Mixed Product: Mixed

Chemical Name(s):

- buprofezin (common name)
- 2-*tert*-butylimino-3-isopropyl-5-phenylperhydro-1,3,5-thiadiazin-4-one (IUPAC)
- 2-[(1,1-dimethylethyl)imino]tetrahydro-3-(1-methylethyl)-5-phenyl-4*H*-1,3,5-thiadiazin-4-one (CA)

Chemical Formula: C₁₆H₂₃N₃OS

INGREDIENTS	CAS NO.	%
Buprofezin Technical	69327-76-0	70%
Other Ingredients		29%
Hydrated amorphous fumed silica		1%

4. FIRST AID MEASURES

EYE CONTACT: Flush eyes with plenty of water. Call a physician if irritation persists.

INGESTION: Call a physician or the Poison Control Center. Drink one or two glasses of water. Induce vomiting by touching the back of the throat with the finger, or if available, by administering syrup of ipecac. If the person is unconscious, do not give anything by mouth and do not induce vomiting.

INHALATION: Remove the victim to fresh air. If not breathing, give the victim artificial respiration, preferably mouth-to-mouth. Get medical attention.

SKIN CONTACT: Wash with plenty of soap and water. Get medical attention if irritation persists.

NOTE TO PHYSICIAN: Provide supportive care and symptomatic treatment (eye/respiratory irritation).

5. FIRE FIGHTING MEASURES

FIRE EXTINGUISHING MEDIA: Alcohol-resistant foam, carbon dioxide, dry chemicals, and water spray.

FIRE-FIGHTING EQUIPMENT: Wear self-contained, positive pressure breathing apparatus.

FLAMMABLE PROPERTIES: Flashpoint: Does not flash.

AUTO IGNITION TEMPERATURE: Not combustible.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, nitrogen oxides and sulfur dioxide.

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6. ACCIDENTAL RELEASE MEASURES

GENERAL AND DISPOSAL: Take all necessary action to prevent and to remedy the effects of the spill. Ensure that the disposal is in compliance with federal requirements and local disposal regulations (see *Section 13*). Notify the appropriate authorities immediately (see *Section 15* for any applicable Reportable Quantity (RQ)).

LAND SPILL AND LEAK: Do not breathe the dust. Use a suitable dust respirator. Avoid contact with skin and eyes. Carefully sweep up the spilled product, avoiding formation of a dust cloud, and place it in a suitable container. Seal the container. The area can be washed with water to remove the last traces of the product, but keep out of watercourses or sewers. Inform authorities immediately if contamination occurs.

7. HANDLING AND STORAGE

HANDLING: Caution. This product is harmful if swallowed, inhaled, or absorbed through the skin. It causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing, and wash them before reuse.

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Follow the manufacturer's instructions for cleaning and maintaining personal protective equipment (PPE). If no such instructions are provided for washables, use detergent and hot water. Keep PPE separate from other laundry; wash it separately.
- Do not apply this product in a way that will contact workers or other persons, either directly or through drift.
- Do not apply this product through any type of irrigation system. Allow only protected handlers in the area during application.
- For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS: Control airborne contaminants below the exposure guidelines (see below for any applicable OSHA/ACGIH exposure limits). Use with adequate ventilation to minimize exposure. Local exhaust ventilation may be necessary, especially when the product is used in a confined area.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and Handlers of Agricultural Products:

All users of agricultural products that are within the scope of the EPA Worker Protection Standards (WPS) (40 CFR Part 170) must refer to the statements below or to the product label for WPS-specified PPE, restricted entry interval (REI), and other precautionary statements.

PPE FOR APPLICATORS AND HANDLERS:

Applicators and handlers must wear:

- Long-sleeved shirt and long pants;
- Waterproof gloves; and
- Shoes plus socks.

PPE REQUIRED FOR EARLY ENTRY INTO TREATED AREAS:

If working with plants, soil, or water in treated areas during the restricted entry interval (REI) of 12 hours, personal must wear:

- Coveralls over long-sleeved shirt and long pants;
- Waterproof gloves; and
- Socks and chemical-resistant footwear.

MANUFACTURING AND PACKAGING PERSONNEL:

Manufacturing and packaging personnel should use this product in well-ventilated areas. In accordance with recommended OSHA standards, they should wear:

- Impervious gloves (PVC or rubber), especially when prolonged or repeated contact is anticipated;
- Safety glasses or chemical goggles; and
- Approved dust respirators, especially when handling the product in a confined space.

EXPOSURE GUIDELINES:

Ingredient	Exposure Limit		
	OSHA PEL	ACGIH TLV	HCC WEL
Hydrated amorphous fumed silica	†	10 mg/m ³ (TWA)	†

† No exposure limit established.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND PHYSICAL STATE: Tan granule

MELTING POINT: 219-221°F or 104.2-105.5°C*

SOLUBILITY (H₂O): 0.382 mg/l (very slight) @ 25°C*

BULK DENSITY: 15.6 lb/ft³

VAPOR PRESSURE: 9.4 x 10⁻⁶ mmHg (20°C, 68°F)*

*The data cited were for the active ingredient (buprofezin technical).

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: This product is stable. The active ingredient is stable under dark and cool storage conditions; it is also stable in acid and alkali.

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THERMAL STABILITY: 130°C (266°F), maximum for buprofezin technical.

INCOMPATIBILITY WITH OTHER MATERIALS: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: May decompose at extreme high temperatures to form oxides of carbon, nitrogen and sulfur.

HAZARDOUS POLYMERIZATION: None known.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA:

Oral LD ₅₀ (rat)	> 5,000 mg/kg (slightly toxic)
Dermal LD ₅₀ (rat)	> 2,000 mg/kg (moderately toxic)
Inhalation LC ₅₀ (rat, 4 hrs)	> 2.2 mg/l
Eye irritation	Causes moderate eye irritation
Skin irritation (rabbit)	Slightly irritating (PII = 1.146)
Skin sensitization (Guinea pig)	Not a skin sensitizer.

SUBCHRONIC (TARGET ORGAN EFFECTS):

Buprofezin technical was shown to have no target effects (NOEL) in the 90-day animal studies at dietary levels up to the tested mid-dose: 50 mg/kg per day in dogs and about 18 mg/kg/day in rats. At extreme experimental doses (300 mg/kg/day in dogs and approximately 95 mg/kg/day in rats), effects of enlarged livers were observed in animals after prolonged feeding. Enlarged thyroid was also seen in rats at dose levels > 95 mg/kg/day (>1,000 ppm).

CHRONIC (CANCER INFORMATION):

In 2-year feeding studies with buprofezin technical, the no-effect levels (NOEL) in the three tested animals were all at a similar dose of approximately 2 mg/kg/day (dogs: 2 mg/kg/day; rats/mice: 20 ppm = 1.8/0.9 mg/kg/day). At the high doses of 200 mg/kg/day or greater, toxic chronic effects of buprofezin technical were seen in all tested dogs, rats, and mice. These include increased liver weights (all species), increased thyroid weights (dogs, rats), elevated incidences of hyperplasia or hypertrophy of hepatocytes (mice, rats), and hyperplasia of thyroid epithelial cells (only in rats). However, no treatment-related increases in tumor incidences in livers or thyroids were reported for all three animal species tested in these 2-year feeding studies.

CARCINOGENICITY:

NTP: No
IARC: No
OSHA: No

TERATOGENICITY (BIRTH DEFECTS):

Pregnant rats in a teratology study were administered orally with three dose levels of buprofezin technical (50, 200, and 800 mg/kg/day) from Day 6 to Day 15 during the 20 day gestation period. No teratogenic effects of buprofezin technical were observed in pregnant rats at dose levels up to 200 mg/kg/day (NOEL). At the highest test dose of 800 mg/kg/day, buprofezin technical exhibited significant effects on maternal performance (increased litter resorption, post implantation loss, and reduced litter size) and on the fetal growth/development.

In a separate rabbit teratology study, buprofezin technical (10, 50, or 250 mg/kg/day) showed no significant adverse effects on fetal development and fetal survival in utero even at the highest test dose; the effects observed at the 250 mg/kg/day were on the maternal toxicity (reduced food intake and weight loss). The no-effect level (NOEL) of buprofezin technical in rabbits was 50 mg/kg/day.

REPRODUCTIVE EFFECTS:

In two multi-generation reproduction studies in rats administered with the three tested dose levels (10, 100, and 1,000 ppm), buprofezin technical had no adverse effects on the reproductive performances of the parental rats (fertility/pregnancy), the survival and growth/development of the pups in each generation, and the female parturition status (labor/delivery process). The only effects observed were a decrease in body weight gain of pups from the 1,000 ppm group.

MUTAGENICITY (GENETIC EFFECTS):

Buprofezin technical is not mutagenic or genotoxic when tested in Salmonella gene mutation assay and in two other in vitro mutagenesis systems (mouse lymphoma cells and primary rat hepatocytes). Buprofezin technical was also not mutagenic when tested in an in vivo system, since it did not induce micronuclei formations in bone marrow erythrocytes from mice administered with extreme experimental doses (6,400 - 10,000 mg/kg/day).

12. ECOLOGICAL INFORMATION

Based on available information, the acute toxicity of buprofezin technical to mammals is low. It is considered non-toxic to avian species and to aquatic species at its limit of solubility in water (acute studies). Buprofezin technical has no apparent effect on parasitic wasps in the genera *Paracentrobia*, *Anagrus*, and *Microterys*, or the predacious mites *Phytoseiulus persimilis* and *Amblyseius longispinosus*.

Environmental Hazards:

For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water through disposal of equipment washwaters.

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13. DISPOSAL CONSIDERATIONS

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

Container Disposal: Completely empty container into application equipment. Then dispose of empty packaging in a sanitary landfill, or by incineration, or, if allowed by State or local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORTATION INFORMATION

DOT SHIPPING LABEL: None

PROPER SHIPPING NAME: None

NOTE: For transportation purposes (49 CFR Part 173.132), the calculated inhalation LC₅₀ (rat, 1 hour) is >8.8 mg/liter. Based on this and other package properties of the product, Talus 70DF is rated as practically nontoxic for transport purposes.

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.

STATE REGULATIONS

The following chemicals associated with this product are subject to the right-to-know regulations in the specified state(s):

- hydrated amorphous fumed silica (7631-86-9): Massachusetts

U.S. FEDERAL REGULATIONS

SARA Title III Notification and Information:

Hazard Classes

Acute Health Hazard: Yes

Chronic Health Hazard: No

Fire Hazard: No

Sudden Release of Pressure Hazard: No

Reactivity Hazard: No

TSCA Inventory Status:

The following components are not listed:

- Buprofezin technical (69327-76-0) @ 70%
- Inert ingredients @ 29% as well as:
 - hydrated amorphous fumed silica (7631-86-9) @ 1%

SARA 313: No components listed

16. OTHER INFORMATION, USES AND RESTRICTIONS

NFPA Hazard Rating:

Health: 1

Flammability: 1

Reactivity: 0

Other: 0

HMIS Hazard Rating:

Health: 1

Flammability: 0

Reactivity: 1

Other: E

MSDS STATUS: New - 10/27/09 (NAI091604)

The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult SePRO Corporation For Further Information.