

Material Safety Data Sheet



Transportation and Medical Emergency Phone: 1-800-535-5053
(INFOTRAC)
General Phone: 317-580-8282

EPA Reg. Number: 71711-15-67690
Effective Date: May 13, 2002

Talus[®] Insect Growth Regulator

SePRO Corporation Carmel, IN 46032

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Talus[®] Insect Growth Regulator

COMPANY IDENTIFICATION:

SePRO Corporation
11550 North Meridian Street, Suite 600
Carmel, IN 46032
www.sepro.com

2. COMPOSITION / INFORMATION ON INGREDIENTS

SINGLE OR MIXED PRODUCT: Mixed

COMMON NAME: Buprofezin technical

CHEMICAL NAME: 2-tert-butylimino-3-isopropyl-5-phenylperhydro-1,3,5-thiadiazin-4-one (IUPAC)

MOLECULAR FORMULA: Mixture (active ingredient:
C₁₆H₂₃N₃OS)

COMPONENT	CAS. NO.	%
Buprofezin technical	69327-76-0	70%
Inert Ingredients, including:		
Hydrated aluminum silicate	1332-58-7	18.4%
Alkylated naphthalene	68425-95-5	10.5%
Sulfonate (polymer); Na-Salt Amorphous silica (SiO ₂ hydrate)	112926-00-8	1.1%

INERT INGREDIENTS (18.4%): Only the regulated ingredients are listed above. For a complete regulatory listing of components, refer to Section 15.

3. HAZARDOUS IDENTIFICATIONS

CAUTION! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN. CAUSES MILD EYE IRRITATION. PRODUCT IS A WHITE POWDER.

ROUTES OF EXPOSURE: Dust inhalation, skin contact.

EFFECTS OF OVER EXPOSURE: Symptoms from excessive ingestion of buprofezin technical may include subdued mood, slight muscular incoordination, and slightly enlarged abdomen.

IMMEDIATE EFFECTS SKIN: Harmful if absorbed through the skin. A slight skin irritant. Not a skin sensitizer.

POTENTIAL HEALTH EFFECTS EYES: Causes mild eye irritation.

INHALATION: Harmful if inhaled. Buprofezin technical is not known to be a significant irritant to the respiratory system. Excessive dust inhalation of the inert ingredients in a confined area may cause irritation and congestion of the upper respiratory tract.

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.

SKIN CONTACT: Absorption through the skin is harmful. This product is a slight 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.

4. FIRST AID

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

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 the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Call 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 do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: There is no specific antidote. All treatment should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.

5. FIRE FIGHTING MEASURES

FIRE EXTINGUISHING MEDIA: Use alcohol foam, dry chemical, carbon dioxide or water (spray or fog) to extinguish fires.

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FIRE CONTROL TACTICS: Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing.

Keep unnecessary people away. If using water, use as little water as possible. Use spray or fog—solid stream may cause spreading. Dike area of fire to prevent material run-off. Do not decontaminate personnel or equipment, or handle broken packages or containers without protective equipment as specified in the Exposure Control Section. Decontaminate emergency personnel with soap and water before leaving the fire area.

Avoid breathing dusts, vapors and fumes from burning materials. Control run-off water—if water enters a drainage system, advise the authorities downstream.

FLAMMABLE PROPERTIES FLASH POINT: Does not flash.

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

AUTOIGNITION TEMPERATURE: Not combustible.

NFPA HAZARD RATING:

0 Least	1	Flammability
1 Slight	/ \	/ \
2 Moderate	1 0	Health Reactivity
3 High	\ /	\ /
4 Severe	0	Other

HMIS HAZARD RATING:

0	Flammability
/ \	/ \
1 1	Health Reactivity
\ /	\ /
E	Other

6. ACCIDENTAL RELEASE MEASURES

GENERAL AND DISPOSAL: Take all necessary actions to prevent and remedy the adverse effect of the spill. Ensure that disposal is in compliance with federal requirements and local disposal regulations. Notify the appropriate authorities immediately.

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 formations 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. Harmful if swallowed, inhaled or absorbed through the skin. Causes mild 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 before reuse.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep wash PPE separately from other laundry. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Do not apply through any type of irrigation system. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

STORAGE: Not for use or storage in or around the home. Do not contaminate water, food, or feed by storage or disposal. Store in a secure, well-ventilated, separate area or warehouse, away from children, livestock, and food products. Store under cool and dry conditions.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

EXPOSURE CONTROL: Do not eat, smoke, or drink at the workplace.

ENGINEERING CONTROLS: Control airborne concentrations below the exposure guideline. Use with adequate ventilation to minimize exposure. Local exhaust ventilation may be necessary, especially when used in confined area.

NOTE TO APPLICATORS AND HANDLERS OF AGRICULTURAL PRODUCTS: For agricultural products which are within the scope of all EPA Worker Protection Standards (WPS) (40 CFR Part 170), all users must refer to the statement below or the Product Label for WPS-specified Personal Protective Equipment (PPE), Restricted Entry Interval (REI), and other Precautionary Statements.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Applicators and handlers must wear: Long-sleeved shirts and long pants, waterproof gloves, shoes plus socks. For entry into treated area during the restricted entry interval (REI) of 12 hours that involves contact with anything that has been treated such as plants, soil, or water is: Coveralls over long-sleeved shirt and long pants, waterproof gloves, socks and chemical resistant footwear.

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MANUFACTURING AND PACKAGING PERSONNEL: Use product this product in a well-ventilated areas. In accordance with recommended OSHA standards, they should wear: impervious gloves (PCV or rubber), especially when prolonged or repeated contact is anticipated; safety glasses or chemical goggles; approved dust respirators, especially when handling the product in a confined space.

EXPOSURE GUIDELINES:

Amorphous silica (SiO₂ hydrate) (112926-00-8)
OSHA PEL ACGIH HCC WEL
None-----10 mg/m³ (TWA)-----None

Hydrated aluminum silicate (1332-58-7)
OSHA PEL ACGIH HCC WEL
None-----2 mg/m³ (TWA)-----None

Alkylated naphthalene sulfonate (polymer); Na-Salt Amorphous (68425-95-5)

Manufacturer's exp. Limit: Total dust (TWA): 15 mg/m³
Respirable dust (TWA): 5 mg/m³

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White powder

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

BULK DENSITY: Fluffed: 0.2057 g/ml
Packed: 0.2513 g/ml

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

PHYSICAL STATE: Solid

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

*data cited were those for buprofezin technical

10. STABILITY AND REACTIVITY

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

CHEMICAL STABILITY: Buprofezin technical is stable under dark and cool conditions; it is also stable in acid and alkali conditions.

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 LD₅₀ (rat): > 5000 mg/kg (slightly toxic)
Dermal LD₅₀ (rat): > 2000mg/kg (moderately toxic)
Inhalation: LC₅₀ (rat, 4 hrs): > 2.2mg/L
Eye irritation (rabbit): Causes mild 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 about 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 (>1000ppm).

CHRONIC (CANCER INFORMATION): In two year studies with buprofezin technical, the no-effect levels (NOEL) in the three tested animals were all at a similar dose of about 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 does 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.

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REPRODUCTIVE EFFECTS: In two multigeneration reproduction studies in rats administered with the three tested dose levels (10,100, and 1000 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 generation, and the female parturition status (labor/delivery process). The only effects observed were a decrease in body weight gain of pups from the 1000 ppm group.

MUTAGENICITY (GENETIC EFFECTS): Buprofezin technical is not mutagenic or genotoxic when tested in AMES' 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. ENVIRONMENTAL INFORMATION

ENVIRONMENTAL TOXICITY: 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 had no apparent effect on parasitic wasps in the genera *Paracentrobia*, *Anagrus*, and *Microterys*, or the predatory 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.

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: Remove the water-soluble bag from the outer packaging, and place the inner bag into the application equipment. Then dispose of the empty outer packaging by discarding it in a sanitary landfill, by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of the smoke.

14. TRANSPORT INFORMATION

DOT SHIPPING LABEL: None

PROPER SHIPPING NAME: None

NOTE: For transportation purposes (49CFR Part 173.132), the calculated inhalation LC₅₀ (rat, 1hr) is > 8.8 mg/L. Based on this and other package properties of the product, Talus is rated as practically non-toxic for transport purposes.

15. REGULATORY INFORMATION

STATE REGULATIONS: The following chemicals associated with the product are subject to the right-to-be known regulations in these states:

Amorphous silica (SiO₂ hydrate) (112926-00-8): MA
Hydrated aluminum silicate (1332-58-7): IL, PA

U.S. FEDERAL REGULATIONS:

SARA TITLE III – HAZARD CLASSES:

acute health (Y), chronic health (N), fire (N), sudden release of pressure (N), reactivity (N)

TSCA INVENTORY STATUS:

These components are not listed:

Buprofezin technical (69327-76-0) 70%

Inert ingredients 18.4% as well as:

Amorphous silica (SiO₂ hydrate) (112926-00-8) 1.1%
Alkylated naphthalene sulfonate (polymer); Na-salt
(68425-95-5) 10.5%

SARA 313: No components listed

16. OTHER INFORMATION, USES AND RESTRICTIONS

PRODUCT USE:

END-USE PRODUCT DESCRIPTION: For insect control in food crops and greenhouse ornamentals.

MSDS HISTORY

SOURCE: Nichino America, Inc.; edition 04

EDITION NO.: 03

FIRST ISSUE: 21-Jun-01

REVISED: 13-May-02

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