



Bonide Captain Jacks Deadbug Brew Concentrate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Bonide Captain Jacks Deadbug Brew Concentrate
Product code : 4471

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Insecticide

1.3. Details of the supplier of the safety data sheet

Bonide Products, Inc.
6301 Sutliff Road
Oriskany, NY 13424
T (315) 736-8231
www.bonide.com

1.4. Emergency telephone number

Emergency number : CHEMTREC - 1 (800) 424-9300 and/or 1 (703) 527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye Irritation 2A H319

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H319 - Causes serious eye irritation
Precautionary statements (GHS-US) : P264 - Wash hands and face thoroughly after handling
P280 - Use personal protective equipment as required
P337+P317 - If eye irritation persists: Get medical help.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

Mixture

Name	Product identifier (CAS No)	%
Spinosad A & D	*	0.5
Propylene glycol	57-55-6	15

*Note : Spinosad is comprised of Spinosyn A (CAS # 131929-60-7) and Spinosyn D (CAS # 131929-63-0)

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

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- First-aid measures after eye contact : Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. No emergency medical treatment necessary.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor or going for treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. This material will not burn until the water has evaporated. Residue can burn.

5.3. Advice for firefighters

- Firefighting instructions : Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.
- Protection during firefighting : Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Use only outdoors or in a well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container tightly closed. Store in original container. Keep container closed when not in use. Do not store near food, feed, drugs, or potable water supplies.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits are listed below, if they exist.

Component Regulation	Type of listing	Value/Notation
Spinosad A & D	Dow IHG TWA	0.3 mg/m3
Propylene glycol	US WEEL TWA	10 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

8.2. Exposure controls

- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear protective gloves.

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Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: Wear approved mask.
Other information	: When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Tan liquid
Color	: Light brown
Odor	: Musty
Odor threshold	: No data available
pH	: 9.19 pH Electrode
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 212 °F (> 100 °C) closed cup
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 1.017 at 20 °C (68 °F) / 4 °C Digital Density Meter (Oscillating Coil)
Density	: 1.09 g/ml
Solubility	: Disperses in water.
Viscosity	: No data available
Explosive properties	: No
Oxidizing properties	: No significant increase (>5C) in temperature

Note: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Active ingredient decomposes at elevated temperatures.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information appears in this section when such data is available.

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined. Based on information for component(s): Estimated.

LD50, Rat, > 5,000 mg/kg

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Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined. Based on information for component(s): Estimated.

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

Skin corrosion/irritation

Essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin.

Serious eye damage/eye irritation

May cause eye irritation. May cause slight corneal injury.

Sensitization

For the active ingredient(s): Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Available data are inadequate to determine single exposure specific target organ toxicity.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the active ingredient(s): In animals, Spinosad has been shown to cause vacuolization of cells in various tissues. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Carcinogenicity

For the active ingredient(s): For the minor component(s): Did not cause cancer in laboratory animals.

Teratogenicity

For the active ingredient(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother. For the minor component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

For the active ingredient(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. For the minor component(s): In animal studies, did not interfere with reproduction.

Mutagenicity

For the active ingredient(s): For the minor component(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

11.2. Components influencing toxicology

Spinosad A & D

Acute inhalation toxicity: Vapors are unlikely due to physical properties. No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed. LC50, Rat, 4 Hour, > 5.18 mg/l

Propylene glycol

Acute inhalation toxicity: Mist may cause irritation of upper respiratory tract (nose and throat). LC50, Rabbit, 2 Hour, Aerosol, 317.042 mg/l No deaths occurred at this concentration.

SECTION 12: Ecological information

12.1. Toxicity

Spinosad A & D

Acute toxicity to fish: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested). LC50, *Lepomis macrochirus* (Bluegill sunfish), 96 Hour, 5.9 mg/l

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), 48 Hour, 1.5 mg/l, OECD Test Guideline 202 or Equivalent

EC50, eastern oyster (*Crassostrea virginica*), 0.295 mg/l

Acute toxicity to algae/aquatic plants

EbC50, diatom *Navicula* sp., 5 d, Biomass, 0.107 mg/l

EbC50, *Pseudokirchneriella subcapitata* (green algae), 7 d, 39 mg/l

EC50, *Lemna gibba*, 14 d, 10.6 mg/l

Toxicity to bacteria

Bacteria, > 100 mg/l

Chronic toxicity to fish

NOEC, *Oncorhynchus mykiss* (rainbow trout), flow-through test, mortality, 0.5 mg/l

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Chronic toxicity to aquatic invertebrates
NOEC, *Daphnia magna* (Water flea), 0.0012 mg/l

Toxicity to Above Ground Organisms
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
oral LD50, *Colinus virginianus* (Bobwhite quail), > 2000mg/kg bodyweight.
dietary LC50, *Colinus virginianus* (Bobwhite quail), 5 d, > 5253mg/kg diet.
oral LD50, *Apis mellifera* (bees), 48 Hour, 0.06micrograms/bee
contact LD50, *Apis mellifera* (bees), 48 Hour, 0.05micrograms/bee

Toxicity to soil-dwelling organisms
LC50, *Eisenia fetida* (earthworms), 14 d, > 970 mg/kg

Propylene glycol

Acute toxicity to fish: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, 40,613 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
LC50, *Ceriodaphnia dubia* (water flea), static test, 48 Hour, 18,340 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
ErC50, *Pseudokirchneriella subcapitata* (green algae), 96 Hour, Growth rate inhibition, 19,000 mg/l, OECD Test Guideline 201

Toxicity to bacteria
NOEC, *Pseudomonas putida*, 18 Hour, > 20,000 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, *Ceriodaphnia dubia* (water flea), semi-static test, 7 d, number of offspring, 13,020 mg/l

12.2. Persistence and degradability

Spinosad A & D

Biodegradability: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail, Biodegradation: < 1 %, Exposure time: 28 d, Method: OECD Test Guideline 301B or Equivalent

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	66.000 %
10 d	68.000 %
20 d	76.000 %
28 d	77.000 %

Stability in Water (1/2-life)

, pH 7, Half-life Temperature 25 °C, Stable
, half-life, 200 - 259 d, pH 9, Half-life Temperature 25 °C
, half-life, 0.84 - 0.96 d, pH 7
, pH 5, Half-life Temperature 25 °C, Stable

Propylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass, Biodegradation: 81 %, Exposure time: 28 d, Method: OECD Test Guideline 301F or Equivalent, 10-day Window: Not applicable

12.3. Bioaccumulative potential

Spinosad A & D

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Partition coefficient: n-octanol/water (log Pow): 4.01 Bioconcentration factor (BCF): 33 Fish. 28 d Measured

Propylene glycol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Partition coefficient: n-octanol/water(log Pow): -1.07 Measured Bioconcentration factor (BCF): 0.09 Estimated.

12.4. Mobility in soil

Spinosad A & D

Potential for mobility in soil is low (Koc between 500 and 2000). Partition coefficient(Koc): 701 Measured

Propylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. Potential for mobility in soil is very high (Koc between 0 and 50). Partition coefficient(Koc): < 1 Estimated.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Not regulated for transport by DOT.

Classification for SEA transport (IMO-IMDG):

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.(spinosad)
UN number UN 3082
Class 9
Packing group III
Marine pollutant spinosad

Classification for AIR transport (IATA/ICAO):

Proper shipping name Environmentally hazardous substance, liquid, n.o.s.(spinosad)
UN number UN 3082
Class 9
Packing group III

SECTION 15: Regulatory information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Keep Out of Reach of Children

SECTION 16: Other information

Other information : None.

SDS US (GHS HazCom 2012) - Pesticides

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.