

Material Safety Data Sheet (MSDS)

NO-BUG PLUS, BIO-INSECTICIDE

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: NO-BUG PLUS

Product Use: Botanical Bioinsecticide

Manufacturer: KOREABIO Co., Ltd.

Address: 346, JEONGNAMDONG-RO, JEONGNAM-MYEON, HWASEONG-SI, GYEONGGI-DO,
KOREA, 445-964

Telephone: 82-31-352-8183

Fax: 82-31-353-8247

Website: <http://www.Korea-bio.com>

E-mail : koreabio2010@gmail.com

SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

Composition:

| Ingredient | CAS No. | Percent(%) |
|---|------------|------------|
| Sophora Flavescens Extract (A.I.-Matrine 0.46%) | 519-02-8 | 90 |
| Castor bean extract(castor oil) | 61791-12-6 | 5.5 |
| Polyoxyethylene (1,1,3,3-tetramethylbutyl) phenyl ether | 9036-19-5 | 4.5 |

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview: This preparation is not considered to be hazardous to humans or the environment.

Product has very low toxicity via ingestion, skin contact or inhalation

Possible Routes of entry: Inhalation, eyes and skin

Potential Health Effects from Over-exposure

Skin/Eye Irritation: Direct contact with skin or eyes may cause mild irritation in some individuals.

Inhalation: Inhalation of spray mist may cause respiratory tract irritation in some individuals.



SECTION 4. FIRST AID MEASURES

General: Remove from source of exposure. If irritation or other signs of toxicity occur, seek medical attention.



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Eyes: Hold eye open and rinse slowly and gently with plenty of water for at least 15 minutes. If present, Remove contact lenses and continue rinsing eye.

Skin: Remove contaminated clothing. Thoroughly wash skin with plenty of soap and water

Inhalation: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration.

Ingestion: Call a doctor immediately if a large amount is swallowed. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person.

Note to Physicians and First Aid Providers: This Product has low oral, dermal and inhalation toxicity. Direct contact with eyes may cause temporary irritation. Provide symptomatic and supportive care as necessary.

SECTION 5. FIRE-FIGHTING MEASURES

General: Use methods and protective gear that are appropriate for conditions and size of the fire.

Extinguishing Media: Use appropriate media for underlying cause and combustible involved in the fire.

Special Equipment: Self-contained breathing apparatus and full protective gear according to conditions and size of the fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear suitable protective clothing such as long-sleeved shirt, pants, waterproof gloves and shoes with socks.

Methods for Clean Up: Carefully mop or sweep up spill and place in a closed container for disposal.
Rinse area with water.

Section 6 Notes: Refer to section 8 for personal protection and section 13 for disposal considerations.

SECTION 7. HANDLING AND STORAGE

Handling: Use handling procedures that minimize exposure to the product.

Storage: Store in a cool, dry, well-ventilated place in original container. Keep container closed when not in use. Do not contaminate other pesticides, fertilizers, water or feed by storage or disposal.

Section 7 Notes: Avoid contact with skin, eyes and clothing. Avoid inhalation of spray mist. Wash any contamination from skin or eyes immediately. Wash hands and exposed skin before eating, drinking, smoking or using the toilet.



SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General: Protective clothing should be selected according to the conditions likely to be encountered in the workplace. Ensure good ventilation. No exposure limits have been established.

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Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to reduce airborne exposure at locations/operations where spray mist may be generated.

Personal Protective Equipment:

Respiratory: Not normally required. However, if needed, use a dust/mist filtering face mask or respirator.

Eyes and Face: Chemical safety goggles or safety glasses with side shields.

Hans/Skin: Gloves made from chemically resistant material such as neoprene, vinyl, rubber, or nitrile.

Other Clothing: Wear suitable protective clothing such as long-sleeved shirt, pants and shoes with socks.

Hygienic Practices: Wash hands and exposed skin before eating, drinking, smoking or using the toilet.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------|----------------------------|
| Appearance: | Dark gray, Liquid |
| Odor: | Herb |
| Physical State: | Liquid |
| pH | 5.5~6.0 |
| Boiling Point: | $\geq 100^{\circ}\text{C}$ |
| Flash Point : | $\geq 180^{\circ}\text{C}$ |
| Melting Point: | N/A |
| Freezing Point: | N/A |
| Vapor Pressure: | N/A |
| Vapor Density: | N/A |
| Bulk Density | 1.02 – 1.08 g/ml |
| Specific Gravity: | Approximately 1.03/ml |
| Evaporation Rate: | NDA |
| Solubility in water: | Dispersible in water |
| Percent Solids by Weight: | NDA |
| Partition Coefficient: | NDA |
| Percent Volatile: | Negligible |
| Volatile Organic Compounds: | NDA |
| Molecular Weight: | N/A |

SECTION 10. STABILITY AND REACTIVITY

| | |
|-----------------------------------|---|
| Stability: | Stable, material is non-reactive |
| Conditions to Avoid: | Avoid heat, sparks, open flames and other ignition sources. |
| Materials to Avoid: | None that are known. |
| Hazardous Decomposition Products: | None that are known. |





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Hazardous Polymerization: Will not occur

SECTION 11. TOXICOLOGICAL INFORMATION

Possible Routes of Entry: Eyes and inhalation

Potential Health Effects from Over-exposure

Skin/Eye Irritation: Direct contact with skin or eyes may cause slight to mild irritation in some individuals.

Inhalation: Inhalation of spray mist may cause respiratory tract irritation in some individuals.

Acute studies on a similar formulation

Acute Oral LD₅₀ (SPF mouse): > 5,000mg/kg

Acute Dermal LD₅₀ (ICR rats): > 4,000mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Ecological information: With regard to environmental fate and behavior this product is not expected to impose any environmental risk.

Eco-toxicity information: This product is non-toxicity to the species tested is not expected to impose any environmental risk.

COMPONENT TOXICITY DATA

Freshwater Fish: > 10mg/L

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Method: Open dumping or burning of this material or its packaging is prohibited. Treatment, Storage, transportation and disposal must be in accordance with applicable regulations.

Empty Container: Completely empty container into application equipment, rinse with water and add rinsate to application equipment. Dispose of empty container in accordance with applicable environmental regulations.

SECTION 14. TRANSPORT INFORMATION

| | |
|--------------------------|----------------------------------|
| D.O.T. Shipping Name: | NA (Biopesticide, non-regulated) |
| Technical Shipping Name: | NA |
| Packing Group: | NA |
| D.O.T. Hazard Class: | NA |
| U.N/N.A. Number: | NA |
| Product RQ(lbs): | NA |
| D.O.T. Label: | NA |



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| | |
|---------------------|-----|
| D.O.T. Placard: | NA |
| Marine Pollutant: | NDA |
| IMO: | |
| IMO Label: | NA |
| IMO Placard: | NA |
| European Road/Rail: | |
| Class: | NA |

* Product are not treated as DG cargo by IATA or ICAO regulations

SECTION 15. REGULATORY INFORMATION

Labeling According to EC Directives:

Symbol: Not Required

R-phrases: Not Required

S-phrases: S 2 Keep out of reach of children

(Recommended) S 20/21 When using do not eat, drink or smoke

S 29/35 Do not empty into drains; dispose of this material and its container in a safe way

U.S. EPA SARA: No acute or chronic health hazards. No fire, release of pressure, or reactivity hazards.

(Title III Classification)

U.S. EPA: Biopesticide, non-regulated

SECTION 16. OTHER INFORMATION

References: Not available

Other Special Considerations: Not available

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KOREA BIO CO.,LTD.

KIM YOUNG KWON/President

288-1, Mangwol-ri, Jungnam-myun,
Hwaseong-si, Gyeonggi-do, Korea

The information in this MSDS is based on data available to us as of the issue date given herein, and believed to be correct. Contact Korea Bio at 82-31-352-8183 to determine if additional data and information have become available since the issue date.



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