

MATERIAL SAFETY DATA SHEET



Date Issued: 02/06/2004
 MSDS No: 2332B
 Date-Revised: 06/07/2011
 Revision No: 4

EXPONENT® Insecticide Synergist

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: EXPONENT® Insecticide Synergist
PRODUCT DESCRIPTION: For use as an insecticide synergist in tank-mixing applications.
PRODUCT CODE: 2332B, EPA REG. NO. : 1021-1511
ACTIVE INGREDIENT(S): Piperonyl Butoxide

MANUFACTURER

McLaughlin Gormley King Company
 8810 10th Avenue North
 Minneapolis, MN 55427
Service Number: (800) 645-6466
Alternate Customer Service: (763) 544-0341

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC U.S. and CANADA:(800) 424-9300
CHEMTREC All Other Areas:(703) 527-3887
Emergency Phone:(888) 740-8712
Alternate Emergency Phone:(952) 852-9509

COMMENTS: MGK® Hours of operation are 8:00 am to 4:30 pm CST, 14:00 to 22:30 GMT.

For MEDICAL EMERGENCIES or PESTICIDE INCIDENTS, call 24 hours a day to 1-888-740-8712.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: CAUTION. OSHA-COMBUSTIBLE LIQUID. Do not use or store near heat, sparks, open flame, or any other ignition sources. Causes eye irritation. Harmful if swallowed, inhaled, or absorbed through the skin. Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or spray mists of this product.

Wear a long-sleeved shirt and long pants, shoes and socks, and chemical-resistant gloves such as Barrier Laminate, Neoprene Rubber, Nitrile Rubber, or Viton.

In addition, mixers and loaders supporting aerial applications to forests and/ or applicators using a high pressure handwand in an enclosed area must wear a NIOSH-approved respirator with a dust/ mist filter with MSHA/ NIOSH approval number prefix TC-21C, or any N, R, P or HE filter.

Applicators using hand held foggers in an enclosed area must wear a half-face, full-face, or hood-style NIOSH-approved respirator with a dust/ mist filtering cartridge (MSHA/ NIOSH approval number prefix TC-21C), or a canister approved for pesticides (MSHA/ NIOSH approval number prefix TC-14G), or a cartridge or canister with any N, R, P or HE filter.

POTENTIAL HEALTH EFFECTS

EYES: Causes eye irritation.

SKIN: Can cause skin irritation. Can cause a burning or prickling sensation on more sensitive areas (face, eyes, mouth).

SKIN ABSORPTION: Harmful if absorbed through the skin.

INGESTION: Harmful if swallowed.

INHALATION: Harmful if inhaled.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

CHRONIC EFFECTS: None known.

COMMENTS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

MATERIAL SAFETY DATA SHEET



Date Issued: 02/06/2004
MSDS No: 2332B
Date-Revised: 06/07/2011
Revision No: 4

EXPONENT® Insecticide Synergist

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS
Piperonyl Butoxide	91.3	51-03-6	200-076-7

COMMENTS: Ingredients not identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

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.

SKIN: 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.

INGESTION: If swallowed, IMMEDIATELY call a poison control center or doctor for treatment advice. Have 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 doctor. Never give anything by mouth to an unconscious person.

INHALATION: Remove affected 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 doctor for further treatment advice.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: 87.8°C (190°F) TAG Closed Cup

FLAMMABLE CLASS: OSHA-COMBUSTIBLE LIQUID

EXTINGUISHING MEDIA: Foam, carbon dioxide or dry chemical.

HAZARDOUS COMBUSTION PRODUCTS: Under fire conditions this product will support combustion and may decompose to give off toxic gases such as carbon monoxide, carbon dioxide, and nitrogen oxides.

FIRE FIGHTING PROCEDURES: Treat as an oil fire. Use a full-faced self-contained breathing apparatus along with full protective gear. Keep nearby containers and equipment cool with a water stream.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Shut off ignition sources. Stop release, if possible without risk. Dike or contain release, if possible, and if immediate response can prevent further damage or danger. Isolate and control access to the release area. Take actions to reduce vapors. Absorb with appropriate absorbent. Clean spill area of residues and absorbent.

LARGE SPILL: Shut off ignition sources. Stop release, if possible without risk. Dike or contain release, if possible, and if immediate response can prevent further damage or danger. Isolate and control access to the release area. Take actions to reduce vapors. Collect product into drums, etc. via drains, pumps, etc. Absorb with appropriate absorbent. Clean spill area of residues and absorbent.

GENERAL PROCEDURES: Contaminated absorbent and wash water should be disposed of according to local state/provincial and federal/national regulations.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Do not use or store near heat, sparks, open flame, or any other ignition sources.

HANDLING: Wear chemically impervious gloves such as Barrier Laminate, Neoprene Rubber, Nitrile Rubber, or Viton. Wear a long-sleeved shirt, long pants, shoes and socks.

MATERIAL SAFETY DATA SHEET



Date Issued: 02/06/2004
 MSDS No: 2332B
 Date-Revised: 06/07/2011
 Revision No: 4

EXPONENT® Insecticide Synergist

In addition, mixers and loaders supporting aerial applications to forests and/ or applicators using a high pressure handwand in an enclosed area must wear a NIOSH-approved respirator with a dust/ mist filter with MSHA/ NIOSH approval number prefix TC-21C, or any N, R, P or HE filter.

Applicators using hand held foggers in an enclosed area must wear a half-face, full-face, or hood-style NIOSH-approved respirator with a dust/ mist filtering cartridge (MSHA/ NIOSH approval number prefix TC-21C), or a canister approved for pesticides (MSHA/ NIOSH approval number prefix TC-14G), or a cartridge or canister with any N, R, P or HE filter.

Mechanical ventilation should be used when handling this product in enclosed spaces. Do not contaminate water, food or feedstuffs by storage, handling, or disposal.

READ AND OBSERVE ALL PRECAUTIONS AND INSTRUCTIONS ON THE LABEL.

STORAGE: Store in a cool, dry, well-ventilated place. Keep container closed. Do not use or store near heat, sparks, open flame, any ignition sources, or near strong acids, bases, and oxidizers. Always store pesticides in the original container. Store away from food and pet-food.

KEEP OUT OF REACH OF CHILDREN.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Piperonyl Butoxide	TWA	None		None		None	

ENGINEERING CONTROLS: Mechanical ventilation should be used when handling this product in enclosed spaces. Local exhaust ventilation may be necessary.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Take prudent precautions to avoid contact with eyes.

SKIN: Wear chemical-resistant gloves such as Barrier Laminate, Neoprene Rubber, Nitrile Rubber, or Viton, and wear protective clothing.

RESPIRATORY: Mixers and loaders supporting aerial applications to forests and/ or applicators using a high pressure handwand in an enclosed area must wear a NIOSH-approved respirator with a dust/ mist filter with MSHA/ NIOSH approval number prefix TC-21C, or any N, R, P or HE filter.

Applicators using hand held foggers in an enclosed area must wear a half-face, full-face, or hood-style NIOSH-approved respirator with a dust/ mist filtering cartridge (MSHA/ NIOSH approval number prefix TC-21C), or a canister approved for pesticides (MSHA/ NIOSH approval number prefix TC-14G), or a cartridge or canister with any N, R, P or HE filter.

PROTECTIVE CLOTHING: Wear chemical-resistant gloves, shoes and socks, long-pants, and a long-sleeved shirt.

WORK HYGIENIC PRACTICES: DO NOT SMOKE, EAT, OR DRINK, OR APPLY COSMETICS IN WORK AREA!

Wash promptly if skin becomes contaminated. Wash at the end of each work shift and before eating, smoking, or using the toilet.

OTHER USE PRECAUTIONS: AGRICULTURAL USE REQUIREMENTS:

MATERIAL SAFETY DATA SHEET



Date Issued: 02/06/2004
 MSDS No: 2332B
 Date-Revised: 06/07/2011
 Revision No: 4

EXPONENT® Insecticide Synergist

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR, Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and green houses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on the label about personal protective equipment (PPE), and restricted-entry interval. The requirements listed below only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. 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.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls; Chemical-resistant gloves, such as Barrier Laminate, Nitrile Rubber, Neoprene Rubber, or Viton; Shoes plus socks.

COMMENTS: NON-AGRICULTURAL USE REQUIREMENTS:

The requirements in this section apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR, Part 170). The WPS applies when this product is used to treat agricultural plants on farms, forests, nurseries or greenhouses.

Do not enter or allow others to enter until sprays have dried.

Do not enter or allow others to enter until vapors, mists, and aerosols have dispersed, and the treated area has been thoroughly ventilated.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Slight solvent smell.

APPEARANCE: Clear to light-amber colored liquid.

COLOR: 1.0 on Gardner Scale.

pH: 5.1

Notes: @ 5% in water.

VAPOR DENSITY: Heavier than air.

FREEZING POINT: Not Determined

FLASHPOINT AND METHOD: 87.8°C (190°F) TAG Closed Cup

SOLUBILITY IN WATER: Miscible in water.

SPECIFIC GRAVITY: 1.052 (Water = 1) at 20°C (68°F)

VISCOSITY #1: 39.2 CPS at 23.2°C (73.8°F) Brookfield

(VOC): < 3.000 %

10. STABILITY AND REACTIVITY

STABLE: Yes

MATERIAL SAFETY DATA SHEET



Date Issued: 02/06/2004
MSDS No: 2332B
Date-Revised: 06/07/2011
Revision No: 4

EXPONENT® Insecticide Synergist

HAZARDOUS POLYMERIZATION: No

CONDITIONS TO AVOID: Not compatible with strong acids or bases. Not compatible with strong oxidizers.

11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD₅₀: > 5000 mg/kg

Notes: Albino rabbit.

ORAL LD₅₀: > 3129 mg/kg

Notes: Albino rat.

INHALATION LC₅₀: The Acute Inhalation LC₅₀ of this material places it in EPA Toxic Category IV.

EYE EFFECTS: Irritation clearing within 72 hours.

SKIN EFFECTS: No irritation noted at 72 hours. Irritation Index = 0.5

SENSITIZATION: Positive.

COMMENTS: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as being carcinogens.

Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures to PBO. The significance of these observations is questionable and under review. The doses at which tumors were observed for PBO greatly exceeded potential human exposure from labeled uses. Doses at which these effects were observed greatly exceeded anticipated human dietary intake. At anticipated dietary exposure levels, it is highly unlikely that this product will result in carcinogenic effects.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This product is toxic to aquatic organisms, including fish and invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. This product may contaminate water through runoff. This product has a potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

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 when disposing of equipment wash-waters or rinsate.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters, unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product into sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: To avoid wastes, use all materials in the containers by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (NOTE: such programs are often run by state or local governments, or by industry).

EMPTY CONTAINER: Non-refillable container. DO NOT reuse or refill this container.

Triple-rinse container (or equivalent) promptly after emptying. Then, offer for recycling if available, or puncture and dispose of container in a sanitary landfill.

MATERIAL SAFETY DATA SHEET



Date Issued: 02/06/2004
 MSDS No: 2332B
 Date-Revised: 06/07/2011
 Revision No: 4

EXPONENT® Insecticide Synergist

Triple-rinse as follows for containers less than < 5 gallons (< 18.9 L) or less: Empty the remaining contents into application equipment or a mix-tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and re-cap. Shake for 10 seconds. Pour rinsate into application equipment or a mix-tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple-rinse as follows for containers greater than > 5 gallons (> 18.9 L): Empty the remaining contents into application equipment or a mix-tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix-tank or store rinsate for later use or disposal. Repeat this procedure two more times.

RCRA/EPA WASTE INFORMATION: None of the ingredients in this product appear on the RCRA lists (40 CFR 261.24, 40CFR 251.33) or CERCLA Hazardous Substance list (40 CFR Part 302 Table 302.4)

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Insecticides, Insect or Animal Repellent, Liquid, N.O.S.

PRIMARY HAZARD CLASS/DIVISION: Non-Hazardous

OTHER SHIPPING INFORMATION: This material is not regulated by the DOT as a hazardous material when shipped in Non-Bulk quantities (i.e., less than 119 Gallon's / 450 Liter's).

When shipping in Bulk-quantities (i.e., more than 119 Gallon's / 450 Liter's), please contact MGK® for the proper shipping description.

AIR (ICAO/IATA)

SHIPPING NAME: Insecticides, Insect or Animal Repellent, Liquid, N.O.S.

PRIMARY HAZARD CLASS/DIVISION: Non-Hazardous

VESSEL (IMO/IMDG)

SHIPPING NAME: Not Available

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes

313 REPORTABLE INGREDIENTS:

COMPONENT, CAS#, Max %

Piperonyl Butoxide, 000051-03-6, 91.30

302/304 EMERGENCY PLANNING

EMERGENCY PLAN: There are no SARA Title III Section 302 extremely hazardous substances present in this formulation (40 CFR 355).

There are no components that are subject to emergency requirements under CERCLA Section 103(a)(40 CFR 302.4) in this formulation.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

MATERIAL SAFETY DATA SHEET



Date Issued: 02/06/2004
 MSDS No: 2332B
 Date-Revised: 06/07/2011
 Revision No: 4

EXPONENT® Insecticide Synergist

TSCA STATUS: All chemical substances found in this product comply with the Toxic Substances Control Act's inventory reporting requirements.

REGULATIONS

STATE REGULATIONS:

VOLATILE ORGANIC COMPOUNDS (VOC):

This product contains less than 3% VOC's.

16. OTHER INFORMATION

REVISION SUMMARY: Revision #: 4. This MSDS replaces the June 07, 2011 MSDS., , , , , , Any changes in information are as follows: In Section 1: MSDS Product Code, MSDS NumberIn Section 4: Notes to PhysicianIn Section 5: Flash Point °F (From), Flash Point °C (From)In Section 7: StorageIn Section 9: Appearance, Color, Odor, (pH) (From), (pH), (Group Field) for Water Solubility, Specific Gravity (From), Viscosity (From), Viscosity °F, Viscosity °C, VOC (From)In Section 11: Eye Effects, Skin Effects, Dermal LD50 (Value), Dermal LD50 (Unit), Oral LD50, Sensitization (skin and respiratory), Oral LD50 (Value), Oral LD50 (Unit), Oral LD50 (Operator)In Section 13: Empty Container, DisposallIn Section 15: Regulations: State

HMIS RATING

HEALTH:	2
FLAMMABILITY:	2
PHYSICAL HAZARD:	1
PERSONAL PROTECTION:	

HMIS RATINGS NOTES: We assign HMIS ratings to this product based on the hazards of its ingredients(s). Since the customer is most aware of the applications and conditions of use, he or she must ensure that the proper Personal Protective Equipment is provided, consistent with the information contained in Section's 7 and 8 of this MSDS.

COMMENTS: The data contained herein are based on information currently available to McLaughlin Gormley King Company and, to the best of our knowledge, are accurate and based on sound expert opinion. Our statements herein, however, are not to be taken as a warranty or representation for which McLaughlin Gormley King Company assumes legal responsibility.

MSDS Prepared by T. Azzivitto