Bayer CropScience

MATERIAL SAFETY DATA SHEET

BAYER CROP SCIENCE

P.O. Box 4913 Hawthorn Road
Kansas City, MO 64120-0013

TRANSPORTATION EMERGENCY
CALL CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

NON-TRANSPORTATION
BAYER EMERGENCY PHONE...: (800) 414-0244
BAYER INFORMATION PHONE.: (800) 842-8020

1. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME.....: PRE-EMPT Professional Cockroach Gel Bait
PRODUCT CODE.....: 21731
CHEMICAL FAMILY.....: Chloronicotinyl
CHEMICAL NAME.....: 1-((6-chloro-3-pyridinyl)methyl)-N-nitro-
2-imidazolidinimine
SYNONYMS.....: Imidacloprid
FORMULA.....: C9 H10 Cl N5 O2
PRODUCT USE.....: Commercial Insecticide

2. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
***** HAZARDOUS INGREDIENTS *****		
Imidacloprid 138261-41-3	OSHA : Not Established ACGIH: Not Established	2.15 %
Ingredient 2111 Specific chemical identity is withheld as a trade secret.	OSHA : Not Established ACGIH: Not Established	1-2 %
Sodium Hydroxide 1310-73-2	OSHA : 2.00 mg/m3 Ceiling ACGIH: 2.00 mg/m3 Ceiling	1-3 %

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3. HAZARDS IDENTIFICATION:

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* EMERGENCY OVERVIEW *
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* CAUTION! Color: White; Form: Paste; Gel; Odor: Not *
* established; Causes eye irritation. *
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POTENTIAL HEALTH EFFECTS:

ROUTE(S) OF ENTRY.....: Inhalation; Skin Contact; Eye Contact; Ingestion

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:
ACUTE EFFECTS OF EXPOSURE.....: No specific symptoms of acute overexposure are known to occur in humans. Based on EPA Toxicity Category criteria, this product is essentially non-toxic by the oral and dermal routes of exposure. In addition, animal studies have shown that this material is minimally irritating to the eye and slightly irritating to the skin.
CHRONIC EFFECTS OF EXPOSURE...: No specific symptoms of chronic overexposure are known to occur in humans.

CARCINOGENICITY.....: This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS
AGGRAVATED BY EXPOSURE.....: No specific medical conditions are known which may be aggravated by exposure to this product.

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4. FIRST AID MEASURES:

FIRST AID FOR EYES.....: Hold eyelids open and flush with plenty of water for 15 minutes. Call a physician if irritation persists or develops after flushing.
FIRST AID FOR SKIN.....: Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation persists. If signs of intoxication (poisoning) occur, get medical attention immediately.
FIRST AID FOR INHALATION: First, remove victim to fresh air or uncontaminated area. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention as soon as possible.
FIRST AID FOR INGESTION.: If ingestion is suspected, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 mL) of syrup of ipecac followed by 1 to 2 glasses of

water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.
NOTE TO PHYSICIAN.....: Treat symptomatically. It is also requested that Bayer Corp., Agriculture Division, Kansas City, Missouri, be notified. Telephone: 1-800-414-0244

5. FIRE FIGHTING MEASURES:

FLASH POINT.....: Greater than 200 F (93 C)
EXTINGUISHING MEDIA.....: Water; Carbon Dioxide; Dry Chemical; Foam
SPECIAL FIRE FIGHTING PROCEDURES: Keep out of smoke, cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain run-off by diking to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

6. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES.....: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing vapors and skin contact. Wear proper protective equipment. Dike contaminated area with absorbent granules, soil, sand, etc. If large spill, material should be recovered. Small spills can be absorbed with absorbent granules, spill control pads, or any absorbent material. Carefully sweep up absorbed spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE(MIN/MAX): None/30 day average not to exceed 100 F.
SHELF LIFE.....: Time/temperature-dependent, contact Bayer for specific information.
SPECIAL SENSITIVITY.....: Not established
HANDLING/STORAGE PRECAUTIONS: Store in a cool dry area designated specifically for pesticides. Do not store near any material intended for use or consumption by humans or animals.

8. PERSONAL PROTECTION:

REQUIRED WORK/HYGIENE PROCEDURES...: Exposure during the end-use use of this product is expected to be minimal. End-users should refer to the packaging label for proper handling procedures. However, if exposure to this product is possible while handling large quantities such as in manufacturing, transportation spills or other emergencies, the following personal protection is recommended.
EYE PROTECTION REQUIREMENTS.....: Safety glasses
SKIN PROTECTION REQUIREMENTS.....: Long sleeves and trousers
HAND PROTECTION REQUIREMENTS.....: Chemical-resistant gloves such as latex or nitrile
RESPIRATOR REQUIREMENTS.....: NIOSH-approved particulate respirator
ADDITIONAL PROTECTIVE MEASURES.....: Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM.....: Paste
APPEARANCE.....: Gel
COLOR.....: White
ODOR.....: Not established
MOLECULAR WEIGHT.....: 255.7 (for imidacloprid)
BOILING POINT.....: Not established
MELTING/FREEZING POINT....: Not established
SOLUBILITY IN WATER .....: 0.51 g/L @20 C (for Imidacloprid)
SPECIFIC GRAVITY .....: 1.19
BULK DENSITY.....: Not applicable
% VOLATILE BY VOLUME.....: Not established
VAPOR PRESSURE .....: 1.5 x 10 -9 mm @ 20 C (for imidacloprid)
VAPOR DENSITY .....: Not established (Air = 1)

10. STABILITY AND REACTIVITY:

STABILITY.....: This is a stable material.
HAZARDOUS POLYMERIZATION...: Will not occur.
INCOMPATIBILITIES.....: None known
INSTABILITY CONDITIONS.....: None known
DECOMPOSITION PRODUCTS.....: None known

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11. TOXICOLOGICAL INFORMATION:

Only acute studies have been performed on this product as formulated. The non-acute information pertains to the active ingredient, imidacloprid.

ACUTE TOXICITY

ORAL LD50.....: Male and Female Rat: >5000 mg/kg

DERMAL LD50.....: Male & Female Rat: >5000 mg/kg

INHALATION LC50....: No Data Available

EYE EFFECTS.....: Rabbit: Minimum irritation to the iris and conjunctiva was observed with all irritation cleared by 48 hours post-treatment.

SKIN EFFECTS.....: Rabbit: Slight dermal irritant.

SENSITIZATION.....: Guinea Pig: Not a dermal sensitizer.

SUBCHRONIC TOXICITY...: In a 3 week dermal toxicity study, rabbits were treated with the active ingredient, imidacloprid, at the limit dose level of 1000 mg/kg for 6 hours/day, 5 days/week. There were no local or systemic effects observed at any of the levels tested. The no-observed-effect-level (NOEL) was 1000 mg/kg. In a 4 week inhalation study, rats were exposed to dust concentrations of imidacloprid at 5.5, 30.5 and 191.2 mg/cubic meter for 6 hours/day, 5 days/week. Effects observed at the high concentration included decreased body weight gains, decreased heart and thymus weights, increased liver weights, and induction of the hepatic mixed-function oxidases. Histopathological examinations did not reveal any organ damage or local injury to the respiratory tract. The NOEL was 5.5 mg/cubic meter based on induction of the hepatic mixed-function oxidases.

CHRONIC TOXICITY.....: Dogs were administered imidacloprid for 1 year at dietary concentrations of 200, 500 or 1250 ppm. Due to the lack of significant effects, the high dose was increased to 2500 ppm at 17 weeks for the remainder of the study. Effects observed at the high dose included decreased food consumption, increased liver weights and elevated serum chemistries. The NOEL was 500 ppm. In chronic studies using rats, imidacloprid was administered for 2 years at dietary concentrations of 100, 300, 900 or 1800 ppm. Histopathology examinations revealed an increased incidence of mineralization in the colloid of the thyroid follicles at concentrations of 300 ppm and greater. At 1800 ppm, there were changes in the serum chemistries and a slight increase in the incidence of parafollicular hyperplasia seen in the thyroids. Body weight gains were reduced at 900 and 1800 ppm. The overall NOEL was 100 ppm.

CARCINOGENICITY.....: Imidacloprid was investigated for carcinogenicity in chronic feeding studies using mice and rats at maximum levels of 2000 and 1800 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.

MUTAGENICITY.....: The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

DEVELOPMENTAL TOXICITY: In a developmental toxicity study using rats, imidacloprid was administered by oral gavage during gestation at doses of 10, 30 or 100 mg/kg. At the maternally toxic dose of 100 mg/kg, skeletal examinations of the fetuses revealed a slight increase in the incidence of

wavy ribs. The NOELs for maternal and developmental toxicity were 10 and 30 mg/kg, respectively. Teratogenic effects were not observed at any of the doses tested. Rabbits were administered imidacloprid during gestation at oral doses of 8, 24 or 72 mg/kg. At the maternally toxic dose of 72 mg/kg, reduced body weights and delayed skeletal ossification were observed in the fetuses. The NOELs for maternal and developmental toxicity were 8 and 24 mg/kg, respectively. Teratogenic effects were not observed at any of the doses tested.

REPRODUCTION.....: In a reproduction study, imidacloprid was administered to rats for 2 generations at dietary concentrations of 100, 250 or 700 ppm. Offspring at 700 ppm, exhibited reduced mean body weights and body weight gains. No other reproductive effects were observed. The maternal and reproductive NOELs were 100 and 250 ppm, respectively.

NEUROTOXICITY .....: In an acute neurotoxicity screening study using rats, imidacloprid was administered as a single oral dose at levels of 42, 151 or 307 mg/kg. Clinical observations and neurotoxicity evaluations were performed over a period of 15 days followed by a neurohistopathological examination. Deaths attributed to imidacloprid were observed at the high dose within a day of treatment. The NOEL for motor and locomotor activity was 42 mg/kg for males. Females at the low dose exhibited minimal decrease in activity in the figure-eight maze. In a subsequent study, the NOEL for motor and locomotor activity in females was 20 mg/kg. All clinical signs and neurobehavioral effects were ascribed to acute cholinergic toxicity, with complete recovery at sub-lethal doses within 7 days following treatment. The NOEL for neurotoxicity was 307 mg/kg based on the absence of treatment-related microscopic lesions in skeletal muscle or neural tissue. In a 13 week neurotoxicity screening study, imidacloprid was administered to rats at dietary concentrations of 140, 963 or 3027 ppm. At the mid- and high-dose, effects observed included reductions in body weight and feed consumption, and clinical chemistry findings. Neurobehavorial changes were observed only in males at the high dose. There were no correlative micropathologic findings in muscle or neural tissues in any animals at any treatment level. The NOEL for neurotoxicity was 3027 ppm. The overall NOEL was 140 ppm.

12. ECOLOGICAL INFORMATION:

The active ingredient in this product has been thoroughly evaluated for ecological effects. Bayer will provide a summary of specific data upon written request. As with any pesticide, this product should be used according to label directions.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD.....: Follow container label instructions for disposal of wastes generated during use in compliance with the product label. In other situations, bury in an EPA approved landfill or burn in an incinerator approved for pesticide destruction. Do not reuse container.

14. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME.....: Imidacloprid
FREIGHT CLASS BULK.....: Insecticides, NOI-NMFC 102120
FREIGHT CLASS PACKAGE.....: Insecticides, NOI-NMFC 102120
PRODUCT LABEL.....: Not Noted

DOT (DOMESTIC SURFACE)

PROPER SHIPPING NAME.....: Not hazardous or regulated
HAZARD CLASS OR DIVISION .....: Non-Regulated

IMO / IMDG CODE (OCEAN)

PROPER SHIPPING NAME.....: Not hazardous or regulated
HAZARD CLASS DIVISION NUMBER...: Non-Regulated

ICAO / IATA (AIR)

PROPER SHIPPING NAME.....: Not hazardous or regulated
HAZARD CLASS DIVISION NUMBER...: Non-Regulated

15. REGULATORY INFORMATION:

OSHA STATUS.....: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA STATUS.....: This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.
CERCLA REPORTABLE QUANTITY..: No components listed
SARA TITLE III:
SECTION 302 EXTREMELY
HAZARDOUS SUBSTANCES..: None

15. REGULATORY INFORMATION (Continued)

SECTION 311/312
HAZARD CATEGORIES.....: Immediate Health Hazard
SECTION 313
TOXIC CHEMICALS.....: None
RCRA STATUS.....: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

16. OTHER INFORMATION:

NFPA 704M RATINGS:	Health	Flammability	Reactivity	Other
	1	1	1	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

Bayer's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. NFPA ratings are provided by Bayer as a customer service.

REASON FOR ISSUE.....: Change product code; revise Section 9 (solubility)
PREPARED BY.....: V. C. Standart
APPROVED BY.....: D. C. Eberhart
TITLE.....: Director Product Safety & Stewardship
APPROVAL DATE.....: 12/01/1999
SUPERSEDES DATE.....: 08/03/1999
MSDS NUMBER.....: 34193