

Cheminova, Inc.
Material Safety Data Sheet
Garant™ T&O 2F

MSDS Number: 10200006536
MSDS Version 1.0

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: Garant™ T&O 2F
Product use: Broad spectrum systemic insecticide for use in a variety of indoor and outdoor applications.

Supplier's name and address:
Cheminova Inc.
1700 Route 23, Suite 300
Wayne, NJ, USA
07470
Phone #: (973) 305-6600 (8 AM to 5:00 PM EST, Monday to Friday)
Emergency Telephone #: 1-866-303-6950 (Medical Emergencies)
1-800-424-9300 (24 Hr. Chemtrec Number)

Manufacturer's name and address:
Refer to supplier.

MSDS Prepared by: Cheminova Inc.
MSDS Preparation date: December 6, 2005
Revision date: December 6, 2005
Revision reasons: New MSDS

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Imidacloprid	138261-41-3	21.40

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

<u>Emergency Overview</u>	Caution! Hazard to humans and domestic animals. Harmful if swallowed or absorbed through skin. Keep out of reach of children and animals.
Physical State	viscous liquid suspension
Odor	mild
Appearance	off-white
Routes of Exposure	Inhalation, Skin contact, Skin Absorption
Immediate Effects	
Eye	May cause eye irritation. Eye injury may persist for several days.
Skin	Harmful if absorbed through skin. No skin irritation Non-sensitizing
Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled.
Chronic or Delayed Long-Term	This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

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Medical Conditions Aggravated by Exposure No specific medical conditions are known which may be aggravated by exposure to this product.

SECTION 4. FIRST AID MEASURES

General Have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye 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 and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.

Ingestion Call a 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 directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious or convulsing person.

Inhalation Remove 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 physician or Poison Control Centre immediately.

Notes to Physician Treatment There is no specific antidote. Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point > 93 °C / > 199 °F

Lower Flammability Limit not applicable

Upper Flammability Limit not applicable

Fire and Explosion Hazards May give off poisonous fumes including hydrogenchloride and oxides of nitrogen.

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Fire Fighting Instructions Keep out of smoke. Cool containers / tanks with water spray. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses. Equipment or materials involved in pesticide fires may become contaminated.

Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Methods for Cleaning Up Dike area to prevent runoff. Recover material, if possible. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up and place in appropriate closed container (see Section 7: Handling and Storage). Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Collect and contain contaminated absorbent and dike material for disposal. Do not allow spilt product to enter soil or waterways

Additional Advice Isolate area and keep unauthorized people away. Avoid breathing vapors and avoid skin contact. Use proper protective equipment to minimize personal exposure (see Section 8). Contaminated soil may have to be removed and disposed. Contact Cheminova for further assistance if necessary.

SECTION 7. HANDLING AND STORAGE

Handling Procedures Read label carefully before use. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Storing Procedures Store in an area that is clean, dry and cool. Store in an area away from food, feedstuffs, fertilizers and seed. Store in an area designated specifically for pesticides.

Work/Hygienic Procedures Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product.

Min/Max Storage Temperatures No minimum / 30 day average not to exceed 100 F.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Eye/Face Protection Splash goggles

Hand Protection Chemical resistant gloves made of waterproof material such as polyethylene or polyvinyl chloride.

Body Protection Wear long-sleeved shirt and long pants and shoes plus socks.

Respiratory Protection No personal respiratory protective equipment normally required. When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or Industry recommendations.

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General Protection Follow all label instructions. Eye wash facility and safety shower should be available. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water.

Exposure Limits					
Glycerine	56-81-5	ACGIH	TWA		10 mg/m3
		Form of Exposure		Mist.	
		OSHA Z1	PEL		5 mg/m3
		Form of Exposure		Respirable fraction.	
		OSHA Z1	PEL		15 mg/m3
		Form of Exposure		Total dust.	
		OSHA Z1A	TWA		5 mg/m3
		Form of Exposure		Respirable fraction.	
		OSHA Z1A	TWA		10 mg/m3
		Form of Exposure		Total dust.	
		US CA OEL	TWA PEL		5 mg/m3
		Form of Exposure		Respirable fraction.	
		US CA OEL	TWA PEL		10 mg/m3
		Form of Exposure		Total dust.	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	off-white
Physical State	viscous liquid suspension
Odor	mild
pH	7.5
Specific Gravity	1.12 at 20 °C
Melting/Freezing Point	-6.7 °C / 19.9 °F
Water Solubility	dispersible
Viscosity	350 - 500 mPa.s at 25 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Incompatibility	None known.
Hazardous Decomposition Products	hydrogen chloride (HCl) hydrogen cyanide (hydrocyanic acid) carbon dioxide (CO2) Carbon monoxide nitrogen oxides (NOx)

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Hazardous Reactions Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute Oral Toxicity male rat: LD50: > 4,870 mg/kg

female rat: LD50: 4,143 mg/kg

Acute Dermal Toxicity male/female rabbit: LD50: > 2,000 mg/kg

Acute Inhalation Toxicity male/female rat: LC50: > 5.33 mg/l

Exposure time: 4 h

(actual)

Determined in the form of liquid aerosol.

male/female rat: LC50: > 20 mg/l

Exposure time: 1 h

(actual)

Determined in the form of liquid aerosol.

Extrapolated from the 4 hr LC50.

Skin Irritation rabbit: No skin irritation

Eye Irritation rabbit: Mild irritation to the cornea and conjunctiva was observed with all irritation clearing within 7 days post-treatment.

Minimally irritating.

Sensitization guinea pig: Non-sensitizing

Subchronic Toxicity In a 3-week dermal toxicity study, rabbits treated with imidacloprid showed no local or systemic effects at levels up to and including 1000 mg/kg, the limit dose.

In a 4-week inhalation study, rats exposed to high concentrations of imidacloprid exhibited decreased body weight gains and changes in clinical chemistries and organ weights.

Chronic Toxicity In chronic dietary studies in rats and dogs exposed to imidacloprid, the target organs were the thyroids and/or liver.

Assessment Carcinogenicity

In oncogenicity studies in rates and mice, imidacloprid was not considered carcinogenic in either species.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

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None.

**Reproductive &
Developmental Toxicity**

REPRODUCTIVE TOXICITY: In a two-generation reproduction study in rats, imidacloprid was not a primary reproductive toxicant. Offspring exhibited reduced body weights at the high dose and in conjunction with maternal toxicity.

DEVELOPMENTAL TOXICITY: In developmental toxicity studies in rats and rabbits, there was no evidence of an embryotoxic or teratogenic potential for imidacloprid. In both species, developmental effects were observed only at high doses and in conjunction with maternal toxicity.

Neurotoxicity

In acute and subchronic neurotoxicity screening studies in rats, imidacloprid produced slight neurobehavioral effects in each study at the highest dose tested. There were no correlating morphological changes observed in the neural tissues.

In a one-generation developmental neurotoxicity screening study in rats, offspring exposed to imidacloprid showed decreased motor activities. These effects occurred at the highest dose tested and in conjunction with maternal toxicity. There were no correlating morphological changes observed in the neural tissues.

Mutagenicity

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

SECTION 12. ECOLOGICAL INFORMATION

**Environmental
Precautions**

Extremely toxic to aquatic and estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Notify state and/or Federal authorities and Cheminova immediately if you observe any adverse environmental effects due to the use of this product.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Follow container label instructions for disposal of wastes generated during use in compliance with the product label. In other situations, bury in an approved landfill or burn in an incinerator approved for pesticide destruction. Do not re-use empty containers.
Packaging that cannot be cleaned should be disposed of as product waste.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I., other than poison

SECTION 15. REGULATORY INFORMATION

US Federal Regulations

TSCA list

None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

None.

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

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None.

SECTION 16. OTHER INFORMATION

NFPA

Health - 1 Flammability - 1 Reactivity - 1 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

This information is provided in good faith but without express or implied warranty. Buyer assumes all responsibility for safety and use not in accordance with label instructions.

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