

# MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994  
Dow AgroSciences LLC  
Indianapolis, IN 46268

## LORSBAN\* 15G GRANULAR INSECTICIDE

Effective Date: 30-Jun-06  
Product Code: 45405  
MSDS: 000587

### 1. PRODUCT AND COMPANY IDENTIFICATION:

**PRODUCT:** Lorsban\* 15G Granular Insecticide

#### COMPANY IDENTIFICATION:

Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268-1189

### 2. HAZARDOUS IDENTIFICATIONS:

#### EMERGENCY OVERVIEW

Hazardous Chemical. Tan/buff free-flowing granule with a mercaptan-like odor. May cause eye irritation. Cholinesterase inhibitor. Toxic to avian and aquatic organisms. Store below 100°F (38°C).

**EMERGENCY PHONE NUMBER:** 800-992-5994

### 3. COMPOSITION/INFORMATION ON INGREDIENTS:

Chlorpyrifos	CAS # 002921-88-2	15%
Balance, Total, Including		85%
gamma-Butyrolactone	CAS # 000096-48-0	
Crystalline silica	CAS # 014808-60-7	

### 4. FIRST AID:

**EYES:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, and then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

**SKIN:** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**INGESTION:** Call a physician or poison control center immediately. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not give anything by mouth to an unconscious person.

**INHALATION:** Move person to fresh air; if effects occur, consult a physician.

**NOTE TO PHYSICIAN:** Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### 5. FIRE FIGHTING MEASURES:

**FLASH POINT:** Not applicable (solid)

**METHOD USED:** TCC

#### FLAMMABLE LIMITS

LFL: Not determined

UFL: Not determined

**HAZARDOUS COMBUSTION:** During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to sulfur oxides phosphorus compounds, nitrogen oxides, hydrogen chloride, carbon monoxide, and carbon dioxide.

**FLAMMABILITY INFORMATION:** Mechanical handling can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. Container may vent and/or rupture due to fire.

**EXTINGUISHING MEDIA:** If product is involved in a fire use, water, carbon dioxide or dry chemical. Foam is preferred. Water, if used, must not be allowed to enter sewers or waterways.

**FIRE-FIGHTING INSTRUCTIONS:** Keep people away. Isolate fire area and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environmental damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Cool surroundings with water to localize fire zone. Hand held carbon dioxide or dry chemical extinguishers maybe used for small fires. Soak thoroughly with water to cool and prevent re-ignition. Contain firewater run-off if possible. Fire water run-off, if not contained may cause environmental damage. Review the "Accidental Release Measures" and "Ecological Information" sections of this MSDS.

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**PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

### 6. ACCIDENTAL RELEASE MEASURES:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Sweep up small spills and place in a suitable container for disposal or use per directions on the label. Report large spills to Dow AgroSciences at 800-992-5994.

### 7. HANDLING AND STORAGE:

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Harmful if swallowed. Causes eye irritation. Avoid contact with eyes. Keep out of reach of children. Keep away from food, feedstuffs, and domestic water supplies. For handling relative to end-use of this product, read the product label for further information concerning the use of personal protective equipment (PPE) under the Worker Protection Standard of 1993. Store in original package or containers in a dry area at temperatures <100 F (38 C).

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

#### EXPOSURE GUIDELINE(S):

Chlorpyrifos: ACGIH TLV and OSHA PEL are 0.2 mg/M<sup>3</sup>, skin. ACGIH classification is A4.

Crystalline silica: ACGIH TLV is 0.05 mg/M<sup>3</sup> for quartz, tripoli, and fused silica; 0.05 mg/M<sup>3</sup> (respirable) for cristobalite and tridymite. OSHA PEL is 10/%SiO<sub>2</sub> + 2 mg/M<sup>3</sup> (respirable) for quartz, tripoli, and fused silica; 1/2 the value calculated from the respirable dust formula for quartz, for cristobalite and tridymite.

A 'skin' notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline.

### RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: particulate filter.

**SKIN PROTECTION:** No precautions other than clean body-covering clothing should be needed.

**EYE/FACE PROTECTION:** Use safety glasses.

**APPLICATORS AND ALL OTHER HANDLERS:** Refer to the product label for personal protective clothing and equipment.

### 9. PHYSICAL AND CHEMICAL PROPERTIES:

**BOILING POINT:** Not applicable

**VAPOR PRESSURE:** Low

**VAPOR DENSITY:** Not applicable

**SOLUBILITY IN WATER:** Insoluble

**BULK DENSITY:** 45 lb/cu ft

**APPEARANCE:** Tan/buff free-flowing granule

**ODOR:** Mercaptan-like

### 10. STABILITY AND REACTIVITY:

**STABILITY:** Stable under recommended storage conditions. Store below <100°F (38°C). Unstable at elevated temperatures.

**CONDITIONS TO AVOID:** Avoid temperatures above 158°F (70°C). Chlorpyrifos decomposes at elevated temperatures.

**HAZARDOUS DECOMPOSITION:** Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Hazardous decomposition products may include and are not limited to hydrogen chloride, organic sulfides, and sulfur dioxide.

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**INCOMPATIBLE MATERIALS:** Avoid contact with oxidizing materials and bases.

**HAZARDOUS POLYMERIZATION:** Not known to occur.

### 11. TOXICOLOGICAL INFORMATION:

**POTENTIAL HEALTH EFFECTS:** This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

**EYE:** May cause moderate eye irritation, which may be slow to heal. Corneal injury is unlikely.

**SKIN:** Prolonged exposure not likely to cause significant skin irritation. Prolonged skin contact unlikely to result in absorption of harmful amounts. This material is not considered to have significant skin sensitization potential in humans. The LD<sub>50</sub> for skin absorption in rabbits is >5000 mg/kg.

**INGESTION:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The oral LD<sub>50</sub> for rats is 2250 mg/kg (males) and 1288 mg/kg (females).

**INHALATION:** No adverse effects are anticipated from single exposure to dust. The inhalation LC<sub>50</sub> is 2.06 mg/L for 4 hours.

#### SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:

Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure to chlorpyrifos may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, and tightness in chest, excessive urination, and convulsions. For chlorpyrifos, in laboratory animal studies, effects have been reported on the following organs: adrenal gland. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

**CANCER INFORMATION:** Chlorpyrifos and gamma-butyrolactone did not cause cancer in laboratory animals.

**TERATOLOGY (BIRTH DEFECTS):** Chlorpyrifos and gamma-butyrolactone did not cause birth defects in laboratory animals.

**REPRODUCTIVE EFFECTS:** Chlorpyrifos did not interfere with fertility in reproduction studies in laboratory animals. Some evidence of toxicity to the offspring occurred, but only at a dose high enough to produce significant toxicity to the parent animals. Gamma-butyrolactone has been shown to produce testicular effects in laboratory animal studies, which suggest that excessive exposure to the component may interfere with reproduction.

**MUTAGENICITY:** Based on a majority of negative data and some equivocal or marginally positive results, chlorpyrifos is considered to have minimal mutagenic potential. For the minor component(s), in-vitro mutagenicity studies were negative in some cases and positive in other cases.

### 12. ECOLOGICAL INFORMATION:

#### ENVIRONMENTAL FATE:

#### MOVEMENT & PARTITIONING:

Based largely or completely on information for chlorpyrifos. Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Expected to be relatively immobile in soil (Koc >5000).

#### DEGRADATION & PERSISTENCE:

Based largely or completely on information for chlorpyrifos. The photolysis half-life in water is 3-4 weeks. The atmospheric half-life is 1.4 hours. Degradation is expected in the soil environment within days to weeks. Under aerobic soil conditions the half-life is generally 30-60 days.

#### ECOTOXICOLOGY:

Based largely or completely on information for chlorpyrifos. Material is very highly toxic to aquatic organism on an acute basis (LC<sub>50</sub>/EC<sub>50</sub> <0.1 mg/L in most sensitive species). Material is highly toxic to birds on a dietary basis (LC<sub>50</sub> between 50 and 500 ppm). Material is moderately toxic to birds on an acute basis (LC<sub>50</sub> between 51 and 500 mg/kg).

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### 13. DISPOSAL CONSIDERATIONS:

**DISPOSAL METHOD:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

### 14. TRANSPORT INFORMATION:

#### U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For all package sizes by road, rail or vessel.  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
SOLID, N.O.S.(CHLORPYRIFOS)/9/UN3077/PGIII/RQ  
(CHLORPYRIFOS)

### 15. REGULATORY INFORMATION:

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

#### U.S. REGULATIONS

**SARA 313 INFORMATION:** To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard  
A delayed health hazard

**CALIFORNIA PROPOSITION 65:** The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains a chemical(s) known to the State of California to cause cancer. The chemical is crystalline silica.

**TOXIC SUBSTANCES CONTROL ACT (TSCA):** All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

**STATE RIGHT-TO-KNOW:** The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Chlorpyrifos	002921-88-2	PA3 NJ3 PA1

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).  
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).  
PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

**OSHA HAZARD COMMUNICATION STANDARD:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Category	Rating
Health	1
Flammability	1
Reactivity	1

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**COMPREHENSIVE ENVIRONMENTAL RESPONSE  
COMPENSATION AND LIABILITY ACT (CERCLA, or  
SUPERFUND):** This product contains the following  
substance(s) listed as "Hazardous Substances" under  
CERCLA, which may require reporting of releases:

Chemical Name	CAS Number	RQ	% in Product
Chlorpyrifos	002921-88-2	1	15%

### 16. OTHER INFORMATION:

**MSDS STATUS:** Revised Sections: 14  
Reference: DR-0166-9461  
Replaces MSDS dated: 22-Mar-06  
Document Code: D03-061-237  
Replaces Document Code: D03-061-236

The Information Herein Is Given In Good Faith, But No Warranty,  
Express or Implied, Is Made. Consult Dow AgroSciences for  
Further Information.

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