

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Nufarm Chlorpyrifos 2.32% G Insecticide  
**EPA Reg. No.:** 228-620  
**Product Type:** Insecticide

**Company Name:** Nufarm Americas, Inc.  
11901 S. Austin Avenue  
Alsip, IL 60803  
1-800-345-3330

**Telephone Numbers:** For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,  
Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

**2. HAZARDS IDENTIFICATION****PHYSICAL HAZARDS:**

Combustible Dust

**ENVIRONMENTAL HAZARDS:**

Hazardous to aquatic environment, acute  
Hazardous to aquatic environment, chronic

Category 1

Category 1

**SIGNAL WORD:**

WARNING

**HAZARD STATEMENTS:**

May form combustible dust concentrations in air. Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS**

Avoid release to the environment.

Collect spillage.

Dispose of contents in accordance with local, state, and federal regulations.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

# SAFETY DATA SHEET

## Nufarm Chlorpyrifos 2.32% G Insecticide

COMPONENTS	CAS NO.	% BY WEIGHT
Chlorpyrifos	2921-88-2	2.2 – 2.5
Other Ingredients	Trade Secret	Trade Secret

**Synonyms:** Chlorpyrifos: O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate

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

### 4. FIRST AID MEASURES

**If in Eyes:** Hold eye open and rinse slowly and gently with water for several minutes. Remove contact lenses, if present, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If Inhaled:** Move person to fresh air. Call a poison control center or doctor for further treatment advice.

**If on Skin or Clothing:** Take off contaminated clothing. Rinse skin with water for several minutes. Call a poison control center or doctor for treatment advice.

**Most Important symptoms/effects, acute and delayed:** May cause mild eye and skin irritation.

**Indication of Immediate medical attention and special treatment if needed, if necessary:** Immediate medical attention should not be required.

### 5. FIRE FIGHTING MEASURES

**Extinguishing Media:** Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

**Unusual Fire and Explosion Hazards:** Product may form a combustible dust concentration in air. If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

**Hazardous Decomposition Materials (Under Fire Conditions):** May produce gases such as oxides of carbon and nitrogen.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**Environmental Precautions:** Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

**Methods for Containment:** Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

**Methods for Cleanup and Disposal:** Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

**Other Information:** Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

### 7. HANDLING AND STORAGE

**HANDLING:** Do not get in eyes or on clothing or skin. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

# SAFETY DATA SHEET

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**STORAGE:** Store in original container in a cool, dry locked place out of the reach of children. Do not contaminate water, food, or feed by storage or disposal.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

**Eye/Face Protection:** Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

**Skin Protection:** To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.

**Respiratory Protection:** Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

**General Hygiene Considerations:** Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

### Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Chlorpyrifos	NE	NE	0.1 (IFV) (Skin, BEI*)	NE	mg/m <sup>3</sup>
Other ingredients	NE	NE	NE	NE	

NE = Not Established

IFV = Inhalable Fraction and Vapor

\*As Acetylcholinesterase Inhibiting Pesticides = Cholinesterase activity in red blood cells = 70% of individual's baseline

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Tan colored granules.
<b>Odor:</b>	No data available
<b>Odor threshold:</b>	No data available
<b>pH:</b>	5 - 6 (1% w/w solution)
<b>Melting point/freezing point:</b>	No data available
<b>Initial boiling point and boiling range</b>	No data available
<b>Flash point:</b>	No data available
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid, gas):</b>	No data available
<b>Upper/lower flammability or explosive limits:</b>	No data available
<b>Vapor pressure:</b>	No data available
<b>Vapor density:</b>	No data available
<b>Relative density:</b>	0.534 g/ml (pour) 0.592 g/ml (tap)
<b>Solubility(ies):</b>	Soluble
<b>Partition coefficient: n-octanol/water:</b>	No data available
<b>Autoignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Viscosity:</b>	No data available

**Note:** Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

## 10. STABILITY AND REACTIVITY

**Reactivity:** Not reactive.

**Chemical Stability:** This material is stable under normal handling and storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Excessive heat. Do not store near heat or flame.

**Incompatible Materials:** Strong oxidizing agents: bases and acids.

**Hazardous Decomposition Products:** Under fire conditions may produce gases such as hydrogen chloride, organic sulfides, and oxides of carbon and sulfur.

## 11. TOXICOLOGICAL INFORMATION

**Likely Routes of Exposure:** Inhalation, eye and skin contact.

**Symptoms of Exposure:**

**Eye Contact:** Mildly irritating based on toxicity studies.

**Skin Contact:** Minimally toxic and slightly irritating based on toxicity studies.

**Ingestion:** Slightly toxic if ingested based on toxicity studies.

**Inhalation:** Low inhalation toxicity based on toxicity studies.

**Delayed, immediate and chronic effects of exposure:** None reported.

**Toxicological Data:**

Data from laboratory studies conducted are summarized below:

**Oral:** Rat LD<sub>50</sub>: > 5,000 mg/kg (female)

**Dermal:** Rat LD<sub>50</sub>: >5,000 mg/kg

**Inhalation:** Rat 4-hr LC<sub>50</sub>: >2.07 mg/L (No mortalities at highest dose tested)

**Eye Irritation:** Rabbit: Mildly irritating (MM = 8.0)

**Skin Irritation:** Rabbit: Slightly irritating (PDII = 0.5)

**Skin Sensitization:** Not a contact sensitizer in guinea pigs following repeated skin exposure.

**Symptoms of Cholinesterase Inhibition:** Chlorpyrifos is a cholinesterase inhibitor. Signs and symptoms of cholinesterase inhibition may include, but may not be limited to, headache, dizziness, incoordination, muscle twitching, weakness, nausea, vomiting, diarrhea, constriction of the pupil of the eye, blurred or dark vision, excessive salivation or nasal discharge, profuse sweating and abdominal cramps. Incontinence, unconsciousness, convulsions and breathing difficulties are indicative of severe poisoning. In untreated severe poisoning, death is due to respiratory failure or cardiac arrest.

**Subchronic (Target Organ) Effects:** Prolonged overexposure to chlorpyrifos may show same effects as those associated with cholinesterase inhibition. Repeated overexposure to chlorpyrifos may cause effects to adrenal gland.

**Carcinogenicity / Chronic Health Effects:** Prolonged overexposure to chlorpyrifos may show same effects as those associated with cholinesterase inhibition. Chlorpyrifos did not cause cancer in laboratory animal studies.

**Reproductive Toxicity:** Chlorpyrifos did not interfere with in laboratory animal studies. Some evidence of toxicity in the offspring occurred, but only at doses toxic to the parent animals.

**Developmental Toxicity:** Chlorpyrifos did not cause birth defects in laboratory animals.

**Genotoxicity:** There have been some positive and some negative studies, but the weight of evidence is that chlorpyrifos is considered to have minimal mutagenic potential.

**Assessment Carcinogenicity:** None listed with ACGIH, IARC, NTP or OSHA.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:**

Data on Chlorpyrifos Technical:

Chlorpyrifos is highly toxic to aquatic organisms on an acute basis with an LC<sub>50</sub> or EC<sub>5</sub> <0.1 mg/l in the most sensitive species. Chlorpyrifos is highly toxic to birds on a dietary basis (LC<sub>50</sub> between 50 and 500 ppm) and moderately toxic to birds on an acute basis (LD<sub>50</sub> between 51 and 500 mg/kg).

**Environmental Fate:**

The major route of dissipation appears to be aerobic and anaerobic metabolism. Abiotic hydrolysis, photodegradation and volatilization do not appear to be significant routes of dissipation. Chlorpyrifos is moderately persistent in soils. Chlorpyrifos adsorbs strongly to soil particles and is not readily soluble in

water. Degradation of chlorpyrifos in the soil is expected within days to weeks. Under aerobic soil conditions the half-life averages 30 to 60 days.

### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.

**Container Handling and Disposal:** Nonrefillable container. **DO NOT** reuse or refill this container. Completely empty container into application equipment. Then offer for recycling if available, or place empty container in trash.

### 14. TRANSPORTATION INFORMATION

**DOT****< 43 pounds per complete container**

UN 3077, Environmentally hazardous substance, solid, n.o.s., (Chlorpyrifos) 9, III, Marine Pollutant

**≥43 pounds**

UN 3077, Environmentally hazardous substance, solid, n.o.s., (Chlorpyrifos) 9, III, Marine Pollutant, RQ

**IMDG**

UN 3077, Environmentally hazardous substance, solid, n.o.s., (Chlorpyrifos) 9, III, Marine Pollutant

**IATA**

UN 3077, Environmentally hazardous substance, solid, n.o.s., (Chlorpyrifos) 9, III, Marine Pollutant

### 15. REGULATORY INFORMATION

**EPA FIFRA INFORMATION**

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Causes moderate eye irritation. Avoid contact with eyes and clothing. Harmful if swallowed.

**U.S. FEDERAL REGULATIONS**

**TSCA Inventory:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

**SARA Hazard Notification/Reporting:****Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):**

Acute Health, Fire Hazard

**Section 313 Toxic Chemical(s):**

Chlorpyrifos (CAS No. 2921-88-2)

**Reportable Quantity (RQ) under U.S. CERCLA:**

Chlorpyrifos (CAS No. 2921-88-2) 1 lbs

**RCRA Waste Code:**

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.

**State Information:**

Other state regulations may apply. Check individual state requirements.

**California Proposition 65:**  **ATTENTION.** This product can expose you to chemicals including Chlorpyrifos which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

<b>16. OTHER INFORMATION</b>
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**National Fire Protection Association (NFPA) Hazard Rating:****Rating for this product: Health: 1    Flammability: 2    Reactivity: 0**

Hazards Scale: 0 = Minimal    1 = Slight    2 = Moderate    3 = Serious    4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

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