

Material Safety Data Sheet
PIN NIP® Technical Chlorpropham and PIN NIP® 98% Chlorpropham
Revision Date: September 3, 2009

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: PIN NIP® Technical Chlorpropham; PIN NIP® 98% Chlorpropham
Chemical Name: Isopropyl N-(3-chlorophenyl) carbamate
Synonyms: Isopropyl 3-chlorocarbamate; 1-methylethyl(3-chlorophenyl) carbamate; CIPC Chemical Family: Carbamate
Formula: C10-H12-Cl-N-02
General Use: Potato sprout inhibitor
EPA Registration Number: PIN NIP® Technical Chlorpropham (65726-2);
PIN NIP® 98% Chlorpropham (65726-3)

Company Identification:
Pin/Nip, a division of 1,4GROUP, Inc.
P.O. Box 860
Meridian, ID 83680-0860

24-Hour Emergency Telephone Numbers
Transportation: PERS 1-800-633-8253
Other Emergencies: 1,4GROUP, Inc.: 208-887-9766

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chlorpropham (CAS No. 101-21-3) 98.0%
Impurities 2.0%

* Chlorpropham is considered hazardous under criteria of the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200, based on irritation potential and target organ effects.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Brown; light grayish, yellowish low-melting solid/viscous liquid. Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or aerosol spray. Not considered a fire hazard.

POTENTIAL HEALTH EFFECTS

POTENTIAL ROUTES OF ENTRY: Inhalation; skin contact; eye contact, Ingestion

SYMPTOMS OF OVEREXPOSURE

Inhalation: Expected to be only slightly toxic via inhalation. Inhalation may cause respiratory tract irritation.

Skin Contact: Technical grade chlorpropham is expected to be minimally toxic by skin absorption and a mild skin irritant. Repeated dermal exposure could result in skin reactions and adverse effects on the blood, liver, bone marrow and spleen.

Eye Contact: Chlorpropham dust or aerosol mist may cause mild eye irritation.

Ingestion: This material has shown a low degree of acute toxicity in animal studies; however, rats fed very high doses evidenced muscular weakness, prostration and convulsions. Subchronic and chronic exposure to chlorpropham may cause a toxic response in liver, blood-forming organs (spleen and bone marrow), on blood cells and on the thyroid.

Carcinogenicity: Chlorpropham does not cause cancer in animals based on results of long-term feeding studies.

- NTP Not Listed as a carcinogen
- IARC Animals: inadequate evidence; humans; not classifiable - IARC Group 3
- OSHA Not regulated as a carcinogen
- ACGIH Not listed as a carcinogen

Teratogenicity: Chlorpropham is not expected to cause birth defects in the offspring of pregnant women exposed to the pesticide.

4. FIRST AID MEASURES

Skin Contact: 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.

Swallowed: Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. 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.

Inhalation: Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

Eye Contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 15 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point: Not Determined; expected to be high

Flash Point Method: Not Applicable

Flammable Limits in Air: Not Determined

Autoignition Temperature: Not Determined

Extinguishing Media: Material burns with difficulty. Use dry chemical, alcohol foam, water fog, carbon dioxide or other extinguishing agent suitable for surrounding fire.

Fire Fighting Procedures: Prevent human exposure to fire, smoke, vapors and products of combustion. Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. If possible, move containers from fire area. Keep non-leaking containers cool with water fog or spray to prevent rupture from excessive heat. Dike fire water for later disposal. Do not allow contaminated water to enter waterways.

NFPA Hazard Rating

H = 1

F = 0

R = 0

O = None

HMIS Hazard Rating

H = 1

F = 0

R = 0

PP = F

H = Health; F = Flammability; R = Reactivity; O = Other Hazard; PP = Personal Protective Equipment

6. ACCIDENTAL RELEASE MEASURES

Cleanup: Sweep up spilled material and place in a labeled chemical waste container with lid. Wash spill area with detergent/water. Dike wash water for proper disposal. Observe all local, state and federal laws and regulations regarding disposal, spill, cleanup, removal and discharge.

Waste Disposal: Chlorpropham, as sold, is not a hazardous waste under federal Resource Conservation and Recovery Act (RCRA) regulations. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of federal and state Law. If such wastes cannot be disposed of by application according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Section of the nearest EPA Regional Office for guidance. Do not allow waste to enter sewers or surface waters.

Container Disposal: Do not reuse empty container. Triple rinse (or equivalent), then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by local and state authorities.

7. HANDLING AND STORAGE

Handling: Keep containers closed when not in use. Use only approved equipment for transporting containers to avoid puncturing or rupturing. Wear appropriate protective equipment (see Section 8) when working with this product. During application procedure wear designated protective equipment to avoid inhalation, skin or eye contact.

Storage: Store away from foodstuffs and animal feed. Store containers in a cool, dry, well-ventilated area away from flammable, combustible or incompatible material such as strong oxidizers, strong bases and sources of heat or flame. Keep containers tightly closed when not in use. Post warnings and restrict access to storage area. Precautions apply to emptied containers. Comply with all applicable regulations for storage, handling and application. Do not heat or cut empty container with a cutting torch. Keep product away from children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Use a NIOSH-approved organic vapor acid gas respirator (OVAG) with dust, mist and fume filter to reduce potential for inhalation exposure when use conditions generate dust, vapor, mist or aerosol. When exposure potential requires a higher level of protection, for example, when workers enter storage or treatment areas during or following application, that is, before the aerosol fog has settled or in emergency conditions, use a NIOSH - approved, positive-pressure, pressure demand air-supplied respirator and wear appropriate protective clothing. Respirator cartridges or canisters must be changed frequently to assure that breakthrough exposure does not occur. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Skin Protection Requirements: Skin contact with solid, liquid or aerosol spray must be prevented by the use of impervious clothing, chemical resistant gloves and footwear, each selected with regard to use conditions and exposure potential.

Eye Protection Requirements: Wear safety glasses with side shields, splash goggles or face shield. Contact lenses should not be worn.

Exposure Guidelines: No exposure guidelines have been established for chlorpropham by OSHA, ACGIH or NIOSH. Isopropanol, a low level impurity in this product, has an OSHA PEL and ACGIH TLV of 400 ppm (983 mg/m³); both the OSHA and ACGIH STEL's are 500 ppm (1230 mg/m³).

Engineering Controls: This material, when aerosolized, is required to be handled under specific process conditions according to the EPA-registered product label instructions. Local exhaust ventilation may be needed to control emissions for some operations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid at 20 °C
Color	Brown; light grayish, yellowish
Odor	Halide; Unsaturated
Boiling Point	>150 °C (302 °F) 760 mm mercury
Melting Point	38 - 41°C (100- 106 °F)
Solubility	89 mg/L in water at 25 °C; Soluble in ketones and lower alcohols
pH	5.8 at room temperature
Bulk Density	0.994 g/ml
Vapor Pressure	<10 ⁻⁶ mm mercury (20 °C)
Octanol/Water Partition Coefficient	3.47

10. STABILITY AND REACTIVITY

Stability: Considered stable below 100 °C (212 °F). Stable at 55 °C for 14 days. Stable to sunlight and toward aluminum, iron and tin to 150 °C.

Reactivity: Hydrolyzes slowly in acidic or alkaline media. In 0.5 N sodium hydroxide solution hydrolyzes slowly.

Polymerization: Hazardous polymerization is not expected to occur.

Incompatibilities: Avoid acids, bases and strong oxidizers.

11. TOXICOLOGICAL INFORMATION

Chlorpropham technical has low acute toxicity.

Oral LD₅₀, rats: 2030 mg/kg

Dermal LD₅₀, rabbits: > 2000 mg/kg

Eye Irritation: Mild Irritant

Skin Irritation: Mild Irritant

Skin Sensitization: Negative

A subchronic feeding study was conducted in which rats were fed chlorpropham for 90 days. At the higher dose levels, adverse effects on the liver, blood forming systems, *i.e.*, bone marrow and spleen, were observed. At the highest dose level, some animals had elevated cholesterol. A NOEL was not identified.

A subchronic feeding study was conducted in which mice were fed chlorpropham for 90 days. The NOEL was 420 mg/kg/day. At the LOEL (lowest observable effect level), 856-857 mg/kg/day, adverse effects were observed in the blood, liver, spleen and bone marrow.

A chronic feeding study was carried out in which chlorpropham was fed to beagle dogs for 60 weeks. Thyroid changes occurred at the LOEL (50 mg/kg/day). Effects on the blood were also seen. The NOEL was 5 mg/kg/day. Chronic carcinogenicity bioassays were carried out in rats and mice. The test material was not found to be carcinogenic in these studies.

In a 21-day dermal study with rabbits, chlorpropham was applied daily to the skin. Dermal irritation and alterations occurred at even the lowest dose level. Adverse effects on the blood, possibly related to spleen weight increases, were also observed. An NOEL was not identified.

Long term feeding studies were conducted with no carcinogenic effects.

Mutagenicity testing gave mixed results.

No teratologic changes were observed in rats or rabbits.

Reproductive Toxicity: Chlorpropham did not affect fertility or reproduction in a multi-generation reproduction study.

Target Organs: Overexposure to chlorpropham may affect the blood, spleen, liver, and bone marrow.

12. ECOLOGICAL INFORMATION

ECOLOGICAL TOXICITY

Oral LD₅₀ (Mallard) > 2000 mg/kg LC₅₀ (Rainbow Trout) 5.7 mg/L
Dietary LC₅₀ (Bobwhite) > 5620 ppm EC₅₀ (*Daphnia magna*) 3.7 mg/L
LC₅₀ (Bluegill) 6.8 mg/L

DISTRIBUTION

No appreciable bioconcentration is expected in the environment. Chlorpropham will not bioconcentrate in aquatic organisms. Moderate water solubility and low vapor pressure should prevent volatilization from water.

CHEMICAL FATE INFORMATION

Chlorpropham absorbs strongly to soil and clay and will exhibit low mobility. It is readily biodegraded by microorganisms in soil, with a half life of about 30 days.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD - Dispose of in accordance with label instructions. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal and State Law. If wastes cannot be disposed of by application according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste section of the nearest EPA Regional Office for guidance. Do not allow waste to enter sewers or surface waters.

14. TRANSPORTATION INFORMATION

Product is **Not Regulated** for shipping by any mode of transport, i.e., United States DOT, IATA/ICAO (air) or IMO (water).

15. REGULATORY INFORMATION

OSHA Status	Chlorpropham is considered hazardous under the criteria of the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200, based on irritation potential and target organ effects.
TSCA Status	Not on TSCA Inventory; it is sold as an EPA-registered pesticide.
CERCLA	Not listed; no reportable quantity ("RQ")
SARA Title III, Sections 311/312 Hazard Categories	Immediate Health Delayed Health
SARA TITLE III, Section 313	Not reportable
CALIFORNIA PROPOSITION 65	Not listed

16. OTHER INFORMATION

PREPARED FOR: Pin/Nip, a division of 1,4GROUP, Inc.

REVISION DATES: December 6, 2002, December 14, 2004, January 9, 2006, March 31, 2006, September 3, 2009

DISCLAIMER

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