

Date: December 16, 1986  
Supersedes: April 9, 1981

TECHNICAL CHLORDANE

Maintenace



## Material Safety Data Sheet

The information provided herein is applicable only to  
TECHNICAL CHLORDANE  
as manufactured by/for Velsicol Chemical Corporation.

### Velsicol Chemical Corporation

**Product/Material** TECHNICAL CHLORDANE  
**Manufacturer Address** Velsicol Chemical Corporation  
5600 N. River Road  
Rosemont, IL 60018-5119  
**EMERGENCY PHONE** 312/698-9700

#### I. Product Information

**Trade Name** TECHNICAL CHLORDANE  
**Synonyms** Chlordane;  
Octachloro-4,7-methanotetrahydroindane  
**Chemical Family** Chlorinated bicyclic insecticide  
**Chemical Formula**  $C_{10}H_6Cl_8$   
**Active Ingredient** TECHNICAL CHLORDANE which is 60%  
Octachloro-4,7-methanotetrahydroindene  
and 40% related compounds.  
**CAS Registry Number** 57-74-9  
**DOT Hazard Class** Flammable Liquid NA 2762

#### II. Health/Safety Alert

**WARNING** MAY BE FATAL IF SWALLOWED. DO  
NOT BREATHE VAPOR, FUMES, DUST  
OR SPRAY MIST. DO NOT GET ON  
SKIN OR CLOTHING.

#### III. First Aid Procedures

**Eye** Flush eyes with tap water for at least 15  
minutes. Consult an ophthalmologist.  
**Skin** Wash with mild soap and water. Rinse  
with copious amounts of water. Launder  
clothing thoroughly before reuse.  
**Ingestion** Drink 1 or 2 glasses of water. Induce  
vomiting by touching back of throat with  
finger or blunt object. Do not induce  
vomiting or give anything by mouth to an  
unconscious person. Consult a physician.  
**Inhalation** Remove person to fresh air. Apply  
artificial respiration if necessary. Consult  
a physician.

**IN ALL CASES OF EMERGENCY, CONTACT A PHYSICIAN.**

**IV. Note to Physician**

1. For ingestion, lavage stomach with 2-4 liters of tap water. Instill 30 gm of activated charcoal in 3-4 oz of water. Sodium sulfate cathartic.
2. Use anticonvulsants in appropriate dosages repeated as necessary.
3. Watch breathing closely, aspirate, oxygen and/or ventilatory support if needed.
4. Avoid oils, oil laxatives, epinephrin (adrenalin) and sudden physical stimuli. Do not give stimulants.

**V. Fire and Explosion Information**

<b>Explosive Limits</b>	Lower: 2.8; Upper: 30.5
<b>Flammability</b>	Flammable
<b>Flash Point</b>	Pensky-Martin 95°F, non-sustained
<b>Extinguishing Media</b>	Halon, fog or water spray, foam, carbon dioxide, ABC dry chemical
<b>Special Protective Equipment</b>	In case of severe fire, involving Technical Chlordane, full protective clothing and self-contained breathing apparatus should be worn.
<b>Special Fire Fighting Procedures</b>	Use water to keep fire exposed containers cool. If leak or spill has ignited, use water spray to disperse spill and provide protection for persons attempting to stop leak. Use water sparingly to flush spills.
<b>Products of Combustion</b>	May yield HCl, organochloride products, oxides of nitrogen, carbon monoxide and carbon dioxide.
<b>Unusual Fire and Explosion Hazards</b>	None. Hazards are typical of drum fires.

**Spill Control and Cleanup**

<b>Steps to be taken</b>	Contain spill and absorb with clay granules, sawdust or equivalent. Area can be washed down with water and detergent to remove remaining insecticide. DO NOT ALLOW WASHINGS IN SEWER.
<b>Absorbents</b>	Clay granules, sawdust or dirt.
<b>Counteractants</b>	Not applicable
<b>Incompatibles</b>	Strong oxidizing agents
<b>Reportable quantity</b>	1 pound (0.45 kilogram) of Chlordane

**Product/Waste Disposal**

Technical Chlordane is a hazardous waste under RCRA. Incinerate product/waste at a U.S. EPA permitted waste incinerator. See label for container disposal information.

**III. Special Precautions**

**Storage** Keep in an area suitable for insecticide storage. Store in a dry, well ventilated area, away from spark and open flame.

IX. Health Hazard  
Information

**Primary Route(s) of Entry** Oral: No  
Inhalation: Yes  
Dermal/Eye: Yes

**Not Listed as a Human Carcinogen by:** NTP, IARC or OSHA

**Signs and Symptoms of Acute Overexposure**

Dr. Wayland J. Hayes, Jr., a leading pesticide toxicologist, in his book "Pesticides Studied in Man" (Baltimore: Williams & Wilkins, 1982), has described the symptoms of chlordane poisoning in humans as follows:

"Chlordane has not been a common cause of poisoning. All established cases have been associated with gross exposure. In most instances, including those with full recovery, convulsions appeared within 0.5 to 3 hours after ingestion or after dermal exposure involving spillage.

Following ingestion, some patients have experienced nausea and vomiting before signs of central nervous system overactivity appeared. However, as often as not, convulsion was the first clear indication of illness. Convulsions often last about one minute and may occur at intervals of about 5 minutes. Convulsions usually are accompanied by confusion, incoordination, excitability, or, in some instances, coma."

Rats injected with large doses of chlordane showed mild tremors and disorientation, hypersensitivity to sound and touch, and increasingly rapid and deep breathing, which progressed to convulsions and loss of muscle coordination. It is not clear whether the early signs of acute chlordane poisoning in rats will be the same in humans, but certainly any person showing such signs should get medical advice quickly.

<b>Acute toxicity:</b> Oral	The acute oral toxicity (LD <sub>50</sub> ) in rats has been reported to be as low as 133 mg/kg and as high as 649 mg/kg of body weight.
Dermal	The acute dermal toxicity (LD <sub>50</sub> ) in rabbits in greater than 200 mg/kg but less than 2,000 mg/kg of body weight.
Inhalation	The acute inhalation toxicity (LC <sub>50</sub> ) (4 hour exposure) in rats has been reported to be as low as 0.56 mg/l (gravimetric concentration) to greater than 200 mg/l (nominal concentration).

**Other Toxicological Information**

Skin Irritation:	Not a primary skin irritant in rabbits.
Eye Irritation:	Extremely irritating and corrosive to the eyes of rabbits.

Technical chlordane has been studied in laboratory animals extensively to determine potential adverse human health effects. These studies included: short term and life time exposures, reproductive, teratogenic, mutagenic and oncogenic effects. The CNS and liver appear to be the target organs. Liver tumors were observed in certain strains of laboratory rodents. But, there were differences of opinion as to whether the observed lesions were carcinogenic. A National Academy of Science Committee states: "There are no adequate data to show that these compounds are carcinogenic in humans, but because of their carcinogenicity in certain chemicals in

animals and in humans, the Committee concluded that chlordane, heptachlor and/or their metabolites may be carcinogenic in humans."

Results of epidemiologic studies conducted on manufacturing workers potentially exposed to chlordane were negative for any disease, including cancer.

#### Recommended General Precautions

#### Personal Protection Equipment

In cases where inhalation is likely, a MSHA/NIOSH approved respirator for pesticides is recommended. In cases where eye and skin contact is likely, use of chemical safety goggles, impermeable gloves, and clean, body-covering clothing are recommended.

#### IX. Product Information- Hazardous Ingredients

**NFPA Rating** Health: 1, Fire: 2, Reactivity: 1, Special Properties: None

**Exposure Limits** OSHA PEL: 0.5 mg/m<sup>3</sup> (skin)  
ACGIH TLV: 0.5 mg/m<sup>3</sup> (skin)  
NIOSH Limit: Not established

**Hazardous Ingredient(s)** CHLORDANE, 100%; TLV: 0.5 mg/m<sup>3</sup> (As defined by OSHA) (skin)

#### XII. Physical and Chemical Information

**Appearance and Odor** Amber, viscous liquid with a slightly pungent chlorine-like odor.

**Molecular Weight** 409.8 (176° C)

**Boiling Point** 349.0° F at 2 mm Hg; product decomposes when heated to boiling at 76 Hg

**Vapor Pressure** (mm HG)  $1 \times 10^{-5}$  at 77° F (25° C)

**Vapor Density** 13.2 (Air = 1)

**Specific Gravity** 1.63 at 25° C (H<sub>2</sub>O = 1)

**Solubility** Insoluble in water; miscible in all proportions xylene, ketones, chlorinated solvents, alcohols, esters

**Evaporation Rate** Greater than 2.0 (Toluene = 1)

**Stability** Stable

**Reactivity** Slowly dehydrohalogenates in the presence of alkali

**Decomposition Products** None known

#### XIII. Regulatory Status

Regulated by OSHA and EPA under FIFRA, Clean Water RCRA, and CERCLA (Superfund).