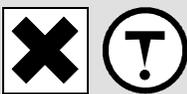


Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Harmful compound, minimize exposure. Irritating to skin, eyes, and the respiratory system. POSSIBLE CARCINOGEN. MINIMIZE EXPOSURE.	

Section I. Chemical Product and Company Identification

Chemical Name	2,4,5-Trichlorophenol		
Catalog Number	T0389	Supplier	TCl America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Dowcide 2 2,4,5-TCP		
Chemical Formula	Cl ₃ C ₆ H ₂ OH		
CAS Number	95-95-4	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
2,4,5-Trichlorophenol	95-95-4	Min. 98.0 (GC)	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD ₅₀ (oral) 820mg/kg Rat LD ₅₀ (subcutaneous) 2260mg/kg Rat LD ₅₀ (intraperitoneal) 335mg/kg

Section III. Hazards Identification

Acute Health Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Possible carcinogen. (sufficient evidence in animals, no adequate data in humans) Tumorigenic: Mouse (dermal) 6700 mg/kg/16W-I. Neoplastic by RTECS criteria. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Reproductive effects: Mouse (oral) 400 mg/kg. Duration: 8 to 12 days of pregnancy. Effects on newborn: Live birth index. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.
Skin Contact	After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.
Inhalation	If the victim is not breathing, perform artificial respiration. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention. Treat symptomatically and supportively.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products include toxic carbon oxides (CO,CO ₂) , halogenated compounds. WARNING: Highly toxic HCl gas is produced during combustion.		
Fire Hazards	No specific information is available regarding the flammability of this compound in the presence of various materials.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No additional information is available regarding the risks of explosion.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Harmful solid. Irritating solid. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	HARMFUL. IRRITANT. POSSIBLE CARCINOGEN. Handle with caution and minimize exposure. Keep away from heat and sources of ignition. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents, acids.
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Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	White to tan crystalline powder.	Solubility	Easily soluble in hot water. Soluble in cold water, methanol, diethyl ether, n-octanol, acetone.
Specific Gravity	1.678	Partition Coefficient	4.1
Molecular Weight	197.45	Vapor Pressure	0.022 mm of Hg (@ 25°C)
Boiling Point	248°C (478.4°F) @ 740mmHg	Vapor Density	0.022 (Air = 1)
Melting Point	67 to 69°C (152.6 to 156.2°F)	Volatility	Not available.
Refractive Index	Not available.	Odor	Strong phenolic odor
Critical Temperature	Not available.	Taste	Taste threshold is 1.0ug/L.
Viscosity	Not available.		

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Highly reactive with oxidizing agents, acids, acid chlorides, and acid anhydrides.

Section XI. Toxicological Information

RTECS Number	SN1400000
Routes of Exposure	Ingestion. Inhalation. Eye contact. Skin contact.
Toxicity Data	Rat LD ₅₀ (oral) 820mg/kg Rat LD ₅₀ (subcutaneous) 2260mg/kg Rat LD ₅₀ (intraperitoneal) 335mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Possible carcinogen. (sufficient evidence in animals, no adequate data in humans) Tumorigenic: Mouse (dermal) 6700 mg/kg/16W-I. Neoplastic by RTECS criteria. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Reproductive effects: Mouse (oral) 400 mg/kg. Duration: 8 to 12 days of pregnancy. Effects on newborn: Live birth index. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	2,4,5-Trichlorophenol may be released to the environment through its production, use as a pesticide and pesticide intermediate, and use of pesticides in which it is an impurity (ie Silvex and 2,4,5-T). It may form in the environment as a degradation product of the pesticides pentachlorophenol and 2,4,5-T. In addition 2,4,5-trichlorophenol may be released in emissions from some incinerators. If released to soil, this compound would biodegrade at a rate which depends upon temperature, availability to oxygen and the presence of the proper microbial population. Biodegradation under anaerobic conditions is expected to be markedly slower than under aerobic conditions. Metabolites identified under aerobic conditions are: 3,5-dichlorocatechol, 4-chlorocatechol, succinate, cis,cis-2,4-dichloromuconate, 2-chloro-4-(carboxymethylene) but-2-enolide, and chlorosuccinate. Photomineralization on soil surfaces may also be a significant loss mechanism. Moderate to extensive adsorption to soils is generally expected. If released to water, 2,4,5-trichlorophenol would rapidly photolyze (half-life 0.6-1 hour) at water surfaces. Beyond the reach of light this compound is expected to bioaccumulate significantly in aquatic organisms, adsorb strongly to suspended solids and sediments, or oxidize to form a quinone. In sediments biodegradation may be an important removal process (half-life 23 days). If released to air, 2,4,5-trichlorophenol may photolyze, it may react with photochemically generated hydroxyl radicals (half-life 4 days) or it may be removed in precipitation. The most probable route of human exposure are inhalation and dermal contact of workers involved in the manufacture, formulation and use of pesticides containing this compound (ie Silvex, technical chlorophenol, sodium 2,4,5-trichlorophenate). (HSDB)

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of this substance.
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Section XIV. Transport Information

DOT Classification	Not a DOT controlled material (United States).
PIN Number	Not applicable.
Proper Shipping Name	Not applicable.
Packing Group (PG)	Not applicable.
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.
WHMIS Classification (Canada)	Not available.
EINECS Number (EEC)	202-467-8
EEC Risk Statements	R22- Harmful if ingested. R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	Not available.

Continued on Next Page

Emergency phone number (800) 424-9300

Section XVI. Other Information**Version 1.0****Validated on 1/21/1998.****Printed 3/11/2005.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.

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