MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT
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MATERIALS INFORMATION SERVICES

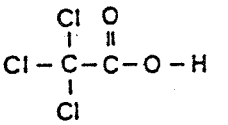
NO. 524

TRICHLOROACETIC ACID

DATE December 1983

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: TRICHLOROACETIC ACID
DESCRIPTION: Crystalline solid or concentrated solution
OTHER DESIGNATIONS: TCA, CAS #000 076 039, Cl_3CCOOH
MANUFACTURER: Available from several suppliers.



SECTION II. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Trichloroacetic Acid		8-hr TWA 1 ppm or 5 mg/m^3
		Rat, Oral LD_{50} 5000 mg/kg
*Current ACGIH (1983) TLV. No OSHA PEL Value.		Rabbit, Skin 210 µg Mild Irritation
		Rabbit, Eye 3.5 mg/5 sec Severe Irritation

SECTION III. PHYSICAL DATA (Solid TCA)

Boiling point, 1 atm, deg C	197.5	Specific gravity, @ 61/4C	1.63
Vapor pressure, mmHg 51C	1	Freezing point, deg C	57.5
77C	5	pH (0.1 molar aq. soln)	1.2
Vapor density (Air=1)	5.65	Molecular weight	163.40
Solubility at 25C, g.solid/100g H_2O	1306		

Appearance & Odor: Colorless, deliquescent solid. Sharp pungent odor.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits in Air	Lower	Upper
Non-flammable Solid	N/A	N/A		

Extinguishing media: (Use that which is appropriate for the surrounding fire). Material is nonflammable and burns with difficulty. Use water spray to absorb any vapors and to cool containers and surroundings.
Acid solution in water can react with metals to liberate hydrogen gas.
Firefighters should use self-contained breathing apparatus and full protective clothing.

SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature under normal storage and handling conditions. It does not polymerize. Crystals are very deliquescent.
Aqueous solutions are strongly acidic. Material is very corrosive with the presence of moisture. Aqueous solutions less than 30% should not be stored because of decomposition (hydrolysis).
Degradation products can include chloroform, hydrogen chloride, carbon dioxide and carbon monoxide.
Heating with alkali yields chloroform and alkali carbonate.

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SECTION VI. HEALTH HAZARD INFORMATION

TLV (See Sect II) TLV 1 ppm

Contact with this very corrosive material can be strongly irritating or damaging to tissue. Excessive inhalation of vapors or particulate can cause coughing, choking, headache, dizziness and general weakness. Skin contact can cause redness, severe pain and chemical burns. Eye contact effects can vary from conjunctivitis to necrosis of the cornea depending on exposure. Ingestion causes severe pain and tissue damage in mouth, throat, and stomach.

FIRST AID:

Eye Contact: Flush thoroughly with running water for 15 min. including under eyelids.

Skin Contact: Remove contaminated clothing (under shower for gross contamination). Flush affected area thoroughly with water and wash with soap and water. Irrigation of severely affected area with sodium carbonate soln has been recommended.

Inhalation: Remove to fresh air. Restore and/or support breathing as needed.

Ingestion: Quickly give several glasses of milk or water to drink to dilute. Contact physician! Do not induce vomiting. If vomiting occurs, give more fluids.

Seek prompt medical assistance for further treatment, observation and support after first aid.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Preplan to handle emergencies. Provide adequate ventilation. Clean-up personnel need protection against inhalation of mist/vapors and contact with solid/liquid. Cover small spills with excess sodium bicarbonate ($NaHCO_3$). Mix and place into appropriate container half full of water. When reaction is complete, dispose in proper manner. Flush trace residues with water. Prevent unneutralized material from entering sewers and waterways.

DISPOSAL Neutralize prior to burning. Use approved incinerator with afterburner and scrubber for HCl capture.

Follow Federal, State, and Local regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate general and local exhaust ventilation to meet TLV requirements. Use a NIOSH/MSHA approved filter/acid gas cartridge or canister respirator for excessive airborne exposures. Use a self-contained breathing apparatus for nonroutine or emergency situations.

Wear impervious protective clothing including boots, gloves and apron to prevent skin contact. Use chemical safety goggles and/or full face shield where splashing is possible. Clothing soiled with material to be removed promptly and laundered before reuse.

Provide preplanning for emergencies and training for handling for those working with TCA.

Eyewash stations, washing facilities, and safety showers should be readily accessible in areas of use and handling.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a cool, dry, well-ventilated area away from alkaline materials and heat sources. Protect containers from physical damage. Keep container tightly closed when not in use.

Avoid breathing mist or vapors! Prevent contact with skin, eyes or clothing! Do not ingest! Wash thoroughly after handling.

DOT Classification: CORROSIVE MATERIAL I.D. No. UN1839 (Solid) Label: CORROSIVE
IMO Class 8 UN2564 (Solution)

DATA SOURCE(S) CODE: 2,5-8,10,11,23-24,48,49

APPROVALS: MIS/CRD J. M. Nissen

INDUST. HYGIENE/SAFETY 12-17-93

MEDICAL REVIEW: 30 December 1983