



# Safety Data Sheet

Section 1. Identification	
<b>Product Identification and Item Numbers:</b>	Trichloroacetic Acid Solution, 60% w/v (TCA/60/1, TCA/60/2, TCA/60/PT)
<b>Product Description:</b>	Trichloroacetic Acid Solution, 60% w/v in Purified Water
<b>Recommended use and restrictions on use:</b>	N/A
<b>Supplier:</b>	Delasco 608 13 <sup>th</sup> Avenue Council Bluffs, IA 51501 1-712-323-3269 <a href="http://www.delasco.com">www.delasco.com</a> <a href="mailto:questions@delasco.com">questions@delasco.com</a>
<b>In Case of Emergency, Contact:</b>	Chemtrec (24 hour) 1-800-424-9300

Section 2. Hazard(s) Identification	
<b>Classification:</b>	
Skin corrosion / irritation (Category 1A) Aquatic Acute (Category 1) Aquatic Chronic (Category 1)	
<b>Labeling:</b>	
<b>Hazard symbol(s):</b>	
	
GHS09: environment	GHS05: corrosion
<b>Signal word:</b> <b>Danger!</b>	
<b>Hazard statements:</b>	
H314: Causes severe skin burns and eye damage. H410: Very toxic to aquatic life with long lasting effects.	
<b>Precautionary statements:</b>	
P260: Do not breathe dust or mist. P264: Wash skin thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340: IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER or doctor/physician. P273: Avoid release to the environment.	

<b>Section 3. Composition/Information on Ingredients</b>	
<b>Chemical Name and Concentration:</b>	Trichloroacetic Acid, 60% w/v Water, 40% w/v
<b>Other Names, Common Names, Synonyms:</b>	TCA, Trichloroethanoic acid
<b>CAS Number, other unique identifiers:</b>	Mixture: Trichloroacetic Acid      CAS# 76-03-9 Water      CAS# 7732-18-5
<b>Other classified impurities or stabilizers:</b>	N/A
<b>Other ingredients posing health hazards:</b>	N/A
<b>Concentration of other hazardous ingredients:</b>	N/A

<b>Section 4. First-aid Measures</b>	
<b>Inhalation exposure:</b>	If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.
<b>Skin exposure:</b>	Immediately flush the contaminated skin with water. If this chemical penetrates the clothing, immediately remove the clothing and flush the skin with water. Get medical attention promptly.
<b>Eye contact:</b>	Immediately wash (irrigate) the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately.
<b>Ingestion:</b>	Get medical attention immediately.

<b>Section 5. Fire Fighting Measures</b>	
<b>Suitable / unsuitable extinguishing media:</b>	SMALL FIRE: Drychemical, CO2, or water spray. LARGE FIRE: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material.
<b>Specific hazards / combustion products:</b>	Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated.
<b>Special protective equipment and precautions for fire-fighters:</b>	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
<b>NFPA Hazard Classification</b>	Health – 3      0-Minimal Flammability – 1      1-Slight Instability – 0      2-Moderate 3-Serious 4-Severe

<b>Section 6. Accidental Release Measures</b>	
<b>Personal precautions and protective equipment:</b>	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate and ventilate the area. Do not touch damaged containers or spilled material unless wearing chemical protective clothing. Stop leak if you can do it without risk. Prevent entry into basements or confined areas. Wear chemical protective clothing.
<b>Environmental Precautions:</b>	Prevent entry into waterways and sewers.
<b>Containment / clean up methods:</b>	Dilute with water and mop up, or absorb with dry earth, sand or other non-combustible material and transfer to containers. If necessary, neutralize residue with a dilute solution of sodium carbonate.

Section 7. Handling and Storage	
<b>Precautions for safe handling:</b>	Provide sufficient air exchange and/or exhaust in work rooms. Handle and open container with care. Keep containers tightly closed in a dry, cool and well-ventilated place.
<b>Conditions for safe storage:</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Separate from food and feedstuffs.
<b>Incompatibilities to avoid:</b>	Incompatible with bases. Avoid metals.

Section 8. Exposure Controls and Personal Protection	
<b>OSHA Permissible Exposure Limit (PEL):</b>	None
<b>Threshold Limit Value (TLV):</b>	TWA 1 ppm
<b>Other exposure limits:</b>	NIOSH REL: TWA 1 ppm (7 mg/m <sup>3</sup> )
<b>Engineering controls:</b>	Use fume hood or other means of adequate ventilation.
<b>Personal protective equipment:</b>	<b>Respiratory Protection</b> Vapor respirator recommended. <b>Eye Protection</b> Wear appropriate eye protection to prevent eye contact (face shield recommended). <b>Skin Protection</b> Wear appropriate personal protective clothing to prevent skin contact (gloves recommended).
<b>Other personal protection measures:</b>	Provide nearby eyewash station and safety shower.

Section 9. Physical and Chemical Properties	
<b>Appearance (physical state, color, etc.):</b>	Clear, colorless liquid, although some yellowish brown coloration is common in higher concentrated solutions.
<b>Odor:</b>	Odor is somewhat pungent and/or sweet, with slight chlorine odor.
<b>Odor threshold:</b>	Data not available
<b>pH:</b>	Acidic
<b>Melting point / freezing point:</b>	Data not available for solutions of trichloroacetic acid.
<b>Initial boiling point and boiling range:</b>	Data not available for solutions of trichloroacetic acid.
<b>Flash point:</b>	Data not available for solutions of trichloroacetic acid.
<b>Evaporation rate:</b>	Data not available for solutions of trichloroacetic acid.
<b>Flammability</b>	Data not available for solutions of trichloroacetic acid.
<b>Upper / lower flammability or explosive limits:</b>	Data not available for solutions of trichloroacetic acid.
<b>Vapor Pressure:</b>	Data not available for solutions of trichloroacetic acid.
<b>Vapor density:</b>	Data not available for solutions of trichloroacetic acid.
<b>Relative density:</b>	Data not available for solutions of trichloroacetic acid.
<b>Solubility:</b>	Data not available for solutions of trichloroacetic acid.
<b>Partition coefficient: n-octanol/water:</b>	Data not available for solutions of trichloroacetic acid.
<b>Auto-ignition temperature:</b>	Data not available for solutions of trichloroacetic acid.
<b>Decomposition temperature:</b>	Data not available for solutions of trichloroacetic acid.
<b>Viscosity:</b>	Data not available for solutions of trichloroacetic acid.

<b>Section 10. Stability and Reactivity</b>	
<b>Chemical stability:</b>	The product is stable.
<b>Possibility of hazardous reactions:</b>	Keep away from incompatibles such as oxidizing agents, and metals.
<b>Conditions to avoid (static, shock, vibration...)</b>	Keep away from incompatibles such as oxidizing agents, and metals.
<b>Incompatible materials:</b>	Reactive with oxidizing agents, metals. Extremely corrosive in presence of aluminum, of zinc, of copper, of stainless steel (304). Highly corrosive in presence of stainless steel (316).
<b>Hazardous decomposition products:</b>	When heated to decomposition it emits toxic fumes of /hydrogen chloride and sodium oxide.

<b>Section 11. Toxicological Information</b>	
<b>Routes of exposure:</b>	Skin, eyes, inhalation, Ingestion
<b>Acute Symptoms (acute):</b>	<ul style="list-style-type: none"> <li>Inhalation: Extremely hazardous in case of inhalation (lung corrosive). Extremely irritating to the upper respiratory tract (nose, throat). Effects of acute inhalation include coughing, choking, dizziness, weakness, followed by air hunger, swelling of the throat, pulmonary edema, frothy sputum, dyspnea, cyanosis, tachycardia, and an increase in red blood cell count and hematocrit.</li> <li>Eye Contact: Hazardous in case of eye contact (corrosive). Causes severe irritation, and burns of the eyes. It causes mild to moderate burns of the eyes.</li> <li>Skin Contact: Very hazardous in case of skin contact (irritant). Causes severe skin irritation, thickening of the skin, blisters, and burns. It causes mild to moderate burns of the skin. It is not readily absorbed through intact skin.</li> <li>Ingestion: Very hazardous in case of skin contact of ingestion. Causes digestive tract irritation, and burns. Systemic effects following ingestion are secondary to gastrointestinal tract damage and acidosis. Ingestion causes drooling, stridor, severe burning pain in the mouth, throat, esophagus, abdomen (stomach), followed by bloody vomiting and diarrhea.</li> </ul>
<b>Symptoms (chronic): Chronic effects from short and long term exposure:</b>	<ul style="list-style-type: none"> <li>Skin: Prolonged or repeated skin contact may cause skin irritation and dermatitis.</li> <li>Inhalation: Chronic inhalation may cause erosion of the tooth enamel, jaw necrosis, bronchial irritation, chronic cough, frequent attacks of pneumonia, and gastrointestinal tract disturbances.</li> <li>Ingestion: Chronic ingestion may affect the liver, and metabolism (weight loss), and urinary system</li> </ul>
<b>Numerical measures of toxicity (e.g., acute toxicity estimates):</b>	Acute Toxicity to Animals: LD50: Not available. LC50: Not available
<b>NTP carcinogen:</b>	Not available
<b>EPA carcinogen:</b>	Not available
<b>ACGIH carcinogen:</b>	Classified A3 (Proven for animal)
<b>IARC potential carcinogen:</b>	Group 2B (possibly carcinogenic to humans).
<b>OSHA carcinogen:</b>	Not available

<b>Section 12. Ecological Information (Non-mandatory)</b>	
<b>Ecotoxicity (aquatic and terrestrial, where available):</b>	Toxicity to fish <ul style="list-style-type: none"> <li>LC50 - Pimephales promelas (fathead minnow) - 2.000 mg/l - 96.0 h</li> </ul> Toxicity to daphnia and other aquatic invertebrates <ul style="list-style-type: none"> <li>EC50 - Daphnia magna (Water flea) - 1,460 - 2,000 mg/l - 48 h</li> </ul>
<b>Persistence and degradability:</b>	Biodegradability Zahn-Wellens Test - Exposure time 27 d
<b>Bioaccumulative potential:</b>	Not available.
<b>Mobility in soil:</b>	Not available.

<b>Other adverse effects:</b>	Not available
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<b>Section 13. Disposal Considerations (Non-mandatory)</b>
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<b>Safe methods of disposal:</b>	Dispose of in accordance with federal, state and local environmental control regulations.
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<b>Section 14. Transport Information (Non-mandatory)</b>
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<b>US DOT</b>	<b>UN number:</b>	UN 2564	<b>Class:</b>	8	<b>Packing Group:</b>	II
<b>UN proper shipping name:</b>			Trichloroacetic Acid, Solution			
<b>Packing group, if applicable:</b>			PG: II			
<b>Environmental hazards (marine pollutant, etc...)</b>			N/A			
<b>Special transport precautions:</b>			N/A			

<b>Section 15. Regulatory Information (Non-mandatory)</b>
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<b>Specific safety, health, and environmental regulations:</b>	N/A
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<b>Section 16. Other information</b>
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<b>Date of preparation or last revision:</b>	September 22, 2018
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