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Material Safety Data Sheet

Transportation Emergency: 1-800-451-8346

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SECTION 1. ----- CHEMICAL IDENTIFICATION -----

CATALOG #: 2121-5-X0

NAME: TRICHLOROACETIC ACID

SYNONYMS: TCA; 2,2,2-TRICHLOROETHANOIC ACID

SECTION 2. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----

CAS NUMBER: 76-03-9

MDL NUMBER: MFCD00004177

MOLECULAR FORMULA: $C_2HCl_3O_2$

MOLECULAR WEIGHT: 163.39

SECTION 3. ----- HAZARDS IDENTIFICATION -----

LABEL PRECAUTIONARY STATEMENTS

CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

CAUSES SERIOUS EYE DAMAGE.

SUSPECTED OF CAUSING CANCER.

VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

OTHER HAZARDS

VESICANT.

SECTION 4. ----- FIRST-AID MEASURES -----

ORAL EXPOSURE

IF SWALLOWED, IMMEDIATELY CALL A POISON CENTER. WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.

INHALATION EXPOSURE

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION.

IF BREATHING IS DIFFICULT, GIVE OXYGEN. CONSULT A PHYSICIAN.

EYE EXPOSURE

ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS. CONSULT A PHYSICIAN.

DERMAL EXPOSURE

IN CASE OF CONTACT, WASH SKIN IMMEDIATELY WITH SOAP AND COPIOUS AMOUNTS OF WATER. CONSULT A PHYSICIAN.

SECTION 5. ----- FIRE FIGHTING MEASURES -----

EXTINGUISHING MEDIA

SUITABLE: WATER SPRAY, FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER.

FIREFIGHTING

PROTECTIVE EQUIPMENT: WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

SPECIFIC METHOD(S) OF FIRE FIGHTING: USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.

SPECIFIC HAZARD(S): EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

EVACUATE PERSONNEL TO A SAFE PLACE.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS, AND HEAVY RUBBER GLOVES. AVOID DUST FORMATION. AVOID BREATHING DUST, VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

ENVIRONMENTAL PRECAUTIONS

DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

METHODS FOR CLEANING UP

SWEEP UP MATERIAL WITHOUT CREATING DUST AND DISPOSE OF AS HAZARDOUS WASTE. PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL REGULATIONS.

SECTION 7. ----- HANDLING AND STORAGE-----

HANDLING

USER EXPOSURE: AVOID CONTACT WITH SKIN, EYES AND CLOTHES. AVOID FORMATION OF DUST AND AEROSOLS. PROVIDE APPROPRIATE EXHAUST VENTILATION AT PLACES WHERE DUST IS FORMED. NORMAL MEASURES FOR PREVENTIVE FIRE PROTECTION.

STORAGE

SUITABLE: KEEP TIGHTLY CLOSED. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME. STORE IN A COOL DRY PLACE. AVOID DIRECT SUNLIGHT. STORE UNDER NITROGEN. HYGROSCOPIC.

SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----

WORKPLACE CONTROL PARAMETERS

TWA 1.000000 PPM USA. ACGIH THRESHOLD LIMIT VALUES (TLV)

TWA 0.5 ppm USA. ACGIH THRESHOLD LIMIT VALUES (TLV)

TWA 1 ppm; 7 mg/m³ USA. NIOSH RECOMMENDED EXPOSURE LIMITS

ENGINEERING CONTROLS

SAFETY SHOWER AND EYE BATH. MECHANICAL EXHAUST REQUIRED.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY: WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A DUST MASK TYPE N95 (US) OR TYPE P1 (EN 143) RESPIRATOR. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

HAND: HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. WASH AND DRY HANDS.

EYE: TIGHTLY FITTING CHEMICAL SAFETY GOGGLES.

GENERAL HYGIENE MEASURES

WASH HANDS THOROUGHLY AFTER HANDLING. AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES -----

APPEARANCE AND ODOR

SOLID

PHYSICAL PROPERTIES

MELTING POINT:	52 - 58 °C
BOILING POINT:	196 °C
DENSITY:	1.62 g/ml @ 25°C

SECTION 10. -----STABILITY AND REACTIVITY -----

STABILITY

STABLE: STABLE UNDER RECOMMENDED CONDITIONS.

CONDITIONS TO AVOID: OPEN FIRE AND FLAMES, EXTREMES OF TEMPERATURE.

MATERIALS TO AVOID: STRONG OXIDIZING AGENTS. STRONG BASES. AMINES.

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON OXIDES, HYDROGEN CHLORIDE GAS.

SECTION 11. ----- TOXICOLOGICAL INFORMATION -----

ACUTE TOXICITY

LD50 ORAL - RAT - MALE AND FEMALE - 3,320 mg/kg

ROUTE OF EXPOSURE

INHALATION: MAY BE HARMFUL IF INHALED. MATERIAL IS EXTREMELY DESTRUCTIVE TO THE TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

INGESTION: MAY BE HARMFUL IF SWALLOWED.

SKIN: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN BURNS.

EYES: CAUSE EYE BURNS.

TARGET ORGAN EFFECT: CAUSES CENTRAL NERVOUS SYSTEM DEPRESSION.

GERM CELL MUTAGENICITY

IN VITRO ASSAY LYMPHOCYTE OECD TEST GUIDELINE 474 MOUSE - MALE AND FEMALE
RESULT: NEGATIVE CARCINOGENICITY IARC: 2B - GROUP 2B: POSSIBLY CARCINOGENIC TO HUMANS (TRICHLOROACETIC ACID)

SIGNS AND SYMPTOMS OF EXPOSURE

TO THE BEST OF OUR KNOWLEDGE, THE TOXICOLOGICAL PROPERTIES OF THIS PRODUCT HAVE NOT BEEN FULLY DETERMINED.

SECTION 12. ----- ECOLOGICAL INFORMATION -----

VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

SECTION 13. ----- DISPOSAL CONSIDERATIONS -----

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY.
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS
MATERIAL. OBSERVE ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. ----- TRANSPORT INFORMATION -----

DOT

UN1839 - HC: 8 - PG: II

SECTION 15. ----- REGULATORY INFORMATION -----

EU ADDITIONAL CLASSIFICATION

SYMBOL OF DANGER: N, C

INDICATION OF DANGER: DANGEROUS FOR THE ENVIRONMENT. CORROSIVE.

RISK STATEMENTS: 34-50/53

SAFETY STATEMENTS: 13-22-24/25-26-36/37/39-45-61

UNITED STATES REGULATORY INFORMATION

TSCA: LISTED ON TSCA INVENTORY; FOR R&D USE ONLY

SECTION 16. ----- OTHER INFORMATION -----

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO
BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SYNQUEST LABS, INC. SHALL
NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING
OR FROM CONTACT WITH THE ABOVE PRODUCT.