

T 180

MSDS Number

CKLPG

National Stock Number

6830-01-325-5586

Product Name

T 180

Manufacturer

FISHER SCIENTIFIC

Product Identification

Product ID:T 180

MSDS Date:11/21/1994

FSC:6830

NIIN:01-325-5586

Status Code:A

MSDS Number: CKLPG

Responsible Party

FISHER SCIENTIFIC

1 REAGENT LANE

FAIRLAWN , NJ 07410

US

Emergency Phone: 800-424-9300

Info Phone: 201-796-7100

Cage: 1B464

Contractor

SCIENTIFIC SUPPLY AND EQUIPMENT INC

22607

SEATTLE, WA 98144

US

206-324-8550

Cage: 6M140

Ingredients

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

CAS: 76-13-1

RTECS: KJ4000000

OSHA PEL7600 MG/M3;1000 PPM

ACGIH TLV: 7670 MG/M3;1000 PPM

Hazards

LD50 LC50 Mixture:LD50: (ORAL,RAT) 43 GM/KG

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES

Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON TF): NARCOTICS/SIMPLE ASPHYXIAN. 4500 PPM IMMEDIATE DANGEROUS TO LIFE/HLTH. ACUTE: MAY CAUSE MILD IRRIT OF MUC MEMB OF UPPER RESP TRACT. MAY BE ANESTH & CAUSE CNS DEPRESS W/DROW & ARRHYTH. HUMANS EXPOSED TO 2500-4500 PPM FOR 30-100 MINS SHOWED SIGNIFICANT

IMPAIRMENT OF MANUAL DEXTERITY & VIGILANCE, LOSS OF CONC, SOMNOLENCE & HEAVINESS IN HEAD, WHICH DISAPPEARED 15 MINS AFTER EXPOS ENDED. SIMPLE ASPHYX MAY OCCUR @ HIGH CONCS. OVEREXP COULD RSLT IN EPINEPHRINE SENSITIZ OF HEART & SUBSEQUENTLY MAY CAUSE DEATH FROM VENTRICULAR FIBRILLATION UNDER (EFTS OF OVE REXP)

Effects of Overexposure:HLTH HAZS: PHYSICAL/EMOTIONAL STRESS. DOGS EXPOSED TO 11,000-13,000 PPM FOR 6 HRS EXPERIENCED VOMIT, LETHARGY, NERVOUSNESS, & TREMORS. ALL SYMPS WERE REVERSIBLE W/IN 15 MINS. IN EXPERIMENTAL ANIMALS, VARIABLE DEGREES OF CARDIODYNAMIC EFTS THAT INCL TACHYCARDIA, MYOCARDIAL DEPRESS, & HYPOTENSION HAVE BEEN REPORTED. PULM EDEMA & SEV VENTRICULAR DYSRHYTHMIA MAY RSLT FROM INHAL OF FREONS. CHLOROFLUORO CARBON (CFC) MATLS HAVE PRDCED SENSITIZ OF MYOCARDIUM TO EPINEPHRINE IN LAB ANIMALS & COULD HAVE SIMILAR EFT IN HUMANS. ADRENOMIMETICS (I.E., EPINEPHRINE) (SUPDAT) Medical Cond Aggravated by Exposure:PERSONS WITH PRE-EXISTING SKIN DISORDERS, IMPAIRED CARDIOVASCULAR FUNCTION, PARTICULARLY CARDIAC ARRYTHMIAS OR IMPAIRED RESPIRATORY FUNCTION.

First Aid

First Aid:INHAL: REMOVE TO FRESH AIR IMMED. PERFORM ARTF RESP IF NEC. KEEP PERSON WARM & AT REST. TREAT SYMPTOMATICALLY & SUPPORTIVELY. GET MED ATTN IMMED. SKIN: REMOVE CONTAMD CLTHG & SHOES IMMED. WASH W/SOAP OR MILD DETERGENT & LG AMTS OF WATER UNTIL NO EVID OF CHEM REMAINS (@ LST 15-20 MINS). GET MED ATTN IMMED. EYES: WASH IMMED W/LG AMTS OF WATER/NORMAL SALINE, OCCASNLY LIFTING UPPER & LOWER LIDS, UNTIL NO EVID OF CHEM REMAINS (@ LST 15 MINS). GET MED ATTN IMMED. INGEST: IF VOMIT OCCURS, KEEP HEAD LOWER THAN HIPS TO HELP PVNT ASPIR. TREAT SYMPTOMATICALLY (TRANSPORT INFO)

Fire Fighting

Autoignition Temp: =680.C, 1256.F
Extinguishing Media: DRY CHEM, CO&2, WATER SPRAY/REGULAR FOAM. FOR LGR FIRES, USE WATER SPRAY, FOG/ REGULAR FOAM. (1993 EMERG RESPONSE GUIDEBOOK, RSPA P 5800.6). USE AGENTS SUITABLE FOR (TRANSPORT INFO)
Fire Fighting Procedures: WEAR NIOSH APPRVD PRESSURE DEMAND SCBA & FULL PROTECTIVE EQUIPMENT . MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT W/OUT RISK. DO NOT SCATTER SPILLED MATL W/HIGH-PRESSURE WATER STREAMS. DIKE FI RE-CONTROL WATER FOR LATER DISP (1993 EMER RESPONSE GUIDEBOOK, RSPA P 5800.6, GUIDE PG 31).
Unusual Fire/Explosion Hazard: NEGLIGIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAMES. THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE CHLORIDES, FLUORIDES & PHOSGENE .

Accidental Release

Spill Release Procedures: OCCUPATIONAL SPILL: STOP LEAK IF YOU CAN DO IT W/OUT RISK. FOR SMALL SPILLS, TAKE UP W/SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CLEAN, DRY CONTAINERS FOR LATER DISPOSAL. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY.

Handling

Handling and Storage Precautions: STORE AWAY FROM INCOMPATIBLE SUBSTANCES. KEEP IN A TIGHTLY CLOSED CONTAINER. STORE IN A COOL, DRY, VENTILATED AREA. OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING THIS SUBSTANCE.
Other Precautions: NO SMOKING IN AREA OF USE. DO NOT USE IN GENERAL VICINITY OF ARC WELDING, OPEN FLAMES OR HOT SURFACES. HEAT AND/OR UV RADIATION MAY CAUSE FORMATION OF CHLORIDES, FLUORIDES AND PHOSGENE .

Exposure Controls

Respiratory Protection: FOLLOWING RESPS & MAX USE CONCS ARE REC BY U.S. DEPT OF HLTH & HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEM HAZS; NIOSH CRITERIA DOCUMENTS/BY U.S. DEPT OF LABOR, 29 CFR 1910 SUBPART 2. SPECIFIC RESP SEL ECTED MUST BE BASED ON CONTAM LEVS FOUND IN WORKPLACE, MUST NOT EXCEED WORKING LIMS OF RESP & BE APPRVD BY NIOSH. 4500 PPM - ANY NIOSH APPRVD (TRANSPORT INFO)
Ventilation: PROVIDE GENERAL DILUTION VENTILATION TO MEET PUBLISHED

EXPOSURE LIMITS.

Protective Gloves: IMPERVIOUS GLOVES .

Eye Protection: ANSI APPROVED CHEMICAL WORKERS GOGGLES .

Other Protective Equipment: EYE WASH & DELUGE SHOWER MEETING ANSI DESIGN CRITERIA . EMPLOYEE MUST WEAR APPROP PROT (IMPERVIOUS) CLTHG & EQUIP TO PVNT RPTD/PRLNGD SKIN CONT W/THIS SUBSTANCE.

Supplemental Safety and Health

EFTS OF OVEREXP: MAY BE CONTRA-INDICATED EXCEPT FOR LIFE-SUSTAINING

USES IN HUMANS ACUTELY/CHRONICALLY EXPOSED TO CFC'S . CHRONIC:

PRLNGD HUMAN EXPOS FOR 2 WKS @ CONCS OF APPROX 500 & 1000 PPM C
AUSED MILD THROAT IRRIT ON 1ST DAY, BUT NO DECREMENT IN PERFORMANCE
OF COMPLEX MENTAL TASKS. (OTHER INFO)

Chemical Properties

Boiling Pt: =45.8C, 114.4F

Melt/Freeze Pt: =13.2C, 55.8F

Vapor Pres: 284 MMHG @ 20C

Vapor Density: 6 (APPROX)

Spec Gravity: 1.6 @ 77F

Evaporation Rate & Reference: 0.45 (ACETONE = 1)

Solubility in Water: 0.028%

Appearance and Odor: COLORLESS LIQUID WITH AN ODOR LIKE AMMONIA AT HIGH CONCENTRATIONS.

Stability

Stability Indicator/Materials to Avoid: YES

ALKALI METALS: VIOLENT RXN POSS. ALUMINUM (POWDERED): FORMS
SHOCK-SENSITIVE MIX. BARIUM (POWDERED): FORMS EXPLO MIX. BERYLLIUM
& CALCIUM: VIOLENT RXN POSS. LITHIUM (POWDERED): FORMS (STATE
REGULATORY INFO)

Stability Condition to Avoid: STABLE UNDER NORMAL TEMPS & PRESSURES. MAY
BURN BUT DOES NOT IGNITE READILY. AVOID CONTACT WITH STRONG
OXIDIZERS, EXCESSIVE HEAT, SPARKS, OR OPEN FLAME.

Hazardous Decomposition Products: THERMAL DECOMPOSITION PRODUCTS MAY
INCLUDE TOXIC AND CORROSIVE FUMES OF CHLORIDES AND FLUORIDES, AND
TOXIC OXIDES OF CARBON. PHOSGENE .

Conditions to Avoid Polymerization: HAZARDOUS POLYMERIZATION HAS NOT
BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

Disposal

Waste Disposal Methods: OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS
WHEN STORING OR DISPOSING OF THIS SUBSTANCE.

Toxicology

Toxicological Information: IRRIT DATA: 500 MG OPEN SKIN-RABBIT MILD; 500
MG/24 HRS SKIN-RABBIT MILD. TOXICITY DATA: 87000 PPM/6 HRS
INHAL-RAT LCLO: 25 PPH/90 SECONDS INHAL-MOUSE LCLO; 20 PPH/6 HRS/2
YRS-INTERMITTENT INHAL-RAT T CLO: 43 GM/KG ORAL-RAT LD50:
CARCINOGEN STATUS: NONE. ACUTE TOX LEVEL: RELATIVELY NON-TOXIC BY
INHAL & INGEST. TARGET EFTS: CNS DEPRESSANT; SIMPLE ASPHY.
POISONING MAY ALSO AFFECT LIVER & KIDNEYS. ADD ITIONAL DATA:
STIMULANTS SUCH AS EPINEPHRINE MAY INDUCE VENTRICULAR FIBRILLATION.

Other Information

Disclaimer (provided with this information by the compiling agencies):
This information is formulated for use by elements of the Department
of Defense. The United States of America in no manner whatsoever,
expressly or implied, warrants this information to be accurate and
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document should seek competent professional advice to verify and
assume responsibility for the suitability of this information to their
particular situation.

Ecology

Ecological: N/P - OTHER INFO: 5 GM/KG W/RABBIT SKIN FOR 5 SUCCESSIVE DAYS
RSLTD IN LOC NECROSIS & SLOUGHING PLUS CONSPICUOUS ENLARGEMENT OF
LIVER CELLS. EYE CONT: ACUTE: MAY CAUSE IRRIT. APPLIC OF 0.1 ML TO

RABBIT EYES IS REPORTED TO HAVE PRDCED ONLY MILD CONJ & MINIMAL CORNEAL DULLNESS @ 24 HRS. ALL EYES RETURNED TO NORMAL W/IN 48 HRS. CHRONIC: NO DATA AVAIL. INGEST:NARCOTIC. ACUTE: ONE HUMAN ACCIDENTALLY REC EIVED 1 LITER OF 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE IN STOM WHILE UNDER ANESTH. THIS PRDCED IMMED BUT TRANSIENT CYANOSIS. INDIVIDUAL SURVIVED & RPTD ONLY SEV RECTAL IRRIT & DIARR FOR 3 DAYS THEREAF TER. (TRANSPORT INFO)

Transport

Transport Information:N/P -ECOLOGICAL INFO: IF SUFFICIENT AMTS ARE INGESTED, SYSTEMIC TOX MAY OCCUR AS DETAILED IN ACUTE INHAL. INGEST OF HYDROCARBONS IS ASSOC W/PNEUM, CNS DEPRESS & ARRHY. CHRONIC: NO CHANGES WERE PRDCED IN OFFSPRING OF PREGNANT RABBITS EXPOSED ORALLY. FIRST AID PROC: & SUPPORTIVELY. GET MED ATTN IF NEEDED. ANTIDOTE: NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY & SUPPORTIVELY. EXTING MEDIA: TYPE OF SU RROUNDING FIRE. AVOID BRTHG HAZ VAPS, KEEP UPWIND. RESP PROT: SUPPLIED-AIR RESP. ANY NIOSH APPRVD SCBA. ESCAPE-ANY NIOSH APPRVD AIR-PURIFYING FULL FACEPIECE RESP (GAS MASK) (FED REGULATORY INFO)

Regulatory

SARA Title III Information:SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING. COMPONENTS AND CONTAMINANTS. EXPOSURE LIMITS: 1000 PPM (7670 MG/M3) OSHA TWA; 1250 PPM (9590 MG/M3) OSHA STEL. 1000 PPM (7670 MG/M3) ACGIH TWA; 1250 PPM (9590 MG/M3) ACGIH STEL. 1000 PPM (7670 MG/M3) NIOSH REC TWA; 1250 PPM (9590 MG/M3) NIOSH REC STEL. 500 PPM (3832 MG/M3) DFG MAK TWA; 1000 PPM (7670 MG/M3) DFG MAK 60 MIN PEAK, M OMENTARY VALUE, 3 TIMES/SHIFT. MEASUREMENT METH: CHARCOAL TUBE; CARBON DISULFIDE; GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION; (NIOSH. VOL. III # 1020).

Federal Regulatory Information:OSHA REVOKED THE FINAL RULE LIMIT OF JANUARY 19, 1989 IN RESPONSE TO THE 11TH CIRCUIT COURT OF APPEALS DECISION (AFL CIO V. OSHA). EFFECTIVE (CONT NEHC FOR COMPLETE INFO). -- TRANSPORT INFO: WITH NIOSH APPRVD CHIN STYLE/FRONT OR BACK-MOUNTED ORG VAP CANISTER. ANY APPROP ESCAPE-TYPE NIOSH APPRVD SCBA. FOR FIREFIGHTING & OTHER IMMED DANGEROUS TO LIFE/HLTH CNDTNS: ANY NIOSH APPRVD SCB A THAT HAS FULL FACEPIECE & IS OPERATED IN PRESS-DEMAND/OTHER POS-PRESS MODE. ANY NIOSH APPRVD SUPPL IED-AIR RESP THAT HAS A FULL FACEPIECE & IS OPERATED IN PRESS-DEMAND OR OTHER POS-PRESS MODE (STATE REGULATORY INFO)

State Regulatory Information:N/P -FED REGULATORY INFO: IN COMBINATION WITH AN NIOSH APPRVD AUXILIARY SCBA OPERATED IN PRESS-DEMAND OR OTHER POSITIVE-PRESSURE MODE. MATLS TO AVOID: EXPLOSIVE MIX. MAGNESIUM: VIOLENT RXN POSS. MAGNE SIUM ALLOY: DECOMP POSS. PLASTICS, RUBBER, COATINGS: MAY BE ATTACKED. POTASSIUM: FORMS IGNITABLE CMPD. SAMARIUM: EXPLODES ON FRICTION. SODIUM: FORMS IGNITABLE COMPOUND. SODIUM-POTASSIUM ALLOY: VIOLENT EXPLOSION. TITANIUM (POWDERED): FORMS SHOCK-SENSITIVE MIXTURE. ZINC: VIOLENT REACTION POSSIBLE.