

RACON INC -- FREON 22 -- 6830-01-382-5105

=====  
Product Identification  
=====

Product ID:FREON 22

MSDS Date:04/07/1989

FSC:6830

NIIN:01-382-5105

MSDS Number: BWRHV

=== Responsible Party ===

Company Name:RACON INC

Box:198

City:WICHITA

State:KS

ZIP:67201

Country:US

Info Phone Num:316-524-3245; 800-835-2916

Emergency Phone Num:415-821-5338

CAGE:FO608

=== Contractor Identification ===

Company Name:ELF

ATOCHEM NORTH AMERICA (FORMERLY RACON INC)

Address:6040 S RIDGE RD

Box:198

City:WICHITA

State:KS

ZIP:67201

Country:US

Phone:CALL COLLECT 415-821-5338

CAGE:2A580

Company Name:RACON INC

Box:198

City:WICHITA

State:KS

ZIP:67201

Phone:(415) 821-5338

CAGE:FO608

=====  
Composition/Information on Ingredients  
=====

Ingred Name:METHANE, CHLORODIFLUORO-; (CHLORODIFLUOROMETHANE) (SARA  
313) (CERCLA)

CAS:75-45-6

RTECS #:PA6390000

OSHA PEL:1000 PPM

ACGIH TLV:1000 PPM

Ozone Depleting Che

mical:2

Ingred Name:SUPP DATA:AT HIGHER TEMPS, IS EXTREMELY UNLIKELY & FIRE HAZARDS OF PRODUCT ARE VERY SMALL.

RTECS #:9999999ZZ

Ingred Name:MATLS TO AVOID:EXPER SHOWS THAT ALKALI & ALKALINE EARTH METALS (I.E., SODIUM, POTASSIUM & BARIUM) IN THEIR FREE (ING 4)

RTECS #:9999999ZZ

Ingred Name:ING 3:METALLIC FORM MAY REACT VIOLENTLY W/FLUOROCARBONS. SINCE MATLS BECOME MORE REACTIVE WHEN FINELY GROUND, (ING 5)

RTECS #:9999999ZZ

Ingred Name:ING 4:METALS SUCH AS MAGNESIUM & ALUMINUM IN POWDERED FORM

MAY ALSO REACT, ESP AT HIGH TEMPS.

RTECS #:9999999ZZ

Ingred Name:EFTS OF OVEREXP:CONTACTED TISS WILL RSLT INDICATED BY NECROSIS OF LIPS & TONGUE (CONTACTED TISS), BLANCHING OF (ING 7)

RTECS #:9999999ZZ

Ingred Name:ING 6:SKIN, PAIN & TENDERNESS. CONT OF VAP W/SKIN OR EYES SHOULD NOT CAUSE INJURY. CONT OF LIQ WILL RSLT IN FRZG (ING 8)

RTECS #:9999999ZZ

Ingred Name:ING 7:& FROSTBITE OF CONTACTED TISS. BECAUSE OF DEFAT EFTS OF THIS PROD, SKIN & EYE IRRIT MAY OCCUR. N

OTE:HUMAN (ING 9)

RTECS #:9999999ZZ

Ingred Name:ING 8:POIS POTNTL:SNIFFING OF FLUOROCARBON PROPELLANTS FOR THEIR INTOX EFTS HAS PRDCD >100 DEATHS. FLUOROCARBONS(ING 10)

RTECS #:9999999ZZ

Ingred Name:ING 9:EXHIBIT VERY TOX PROPERTIES (ASPHY, CARDIAC ARRHYS WHEN SNIFFED; HOWEVER, BECAUSE OF VARIATIONS IN (ING 11)

RTECS #:9999999ZZ

Ingred Name:ING 10:RESPONSE, IT IS VERY DFCLT TO PREDICT WHICH SYMPS WILL BE EXHIBITED FOLLOWING EXPOS. IT IS POSS THAT (ING 12)

RTECS #:9999999ZZ

Ingred

Name:ING 11:INDIVIDUALS W/HEART/RESP DISORDERS MAY PROVE ESP  
SUSCEPTIBLE. CHRONIC:OVEREXP BY INHAL OF VARIOUS ANIMALS(ING 13)  
RTECS #:9999999ZZ

Ingred Name:ING 12:TO 46,000 PPM(VOL)-50,000 PPM(VOL) FOR 8 DAYS TO 10  
MONTHS CAUSED ALTERATIONS IN BODY WT & PHYSIOLOGICAL (ING 14)  
RTECS #:9999999ZZ

Ingred Name:ING 13:ENDURANCE & AFFECTED LUNGS, CNS, HEART, LIVER,  
KIDNEYS & SPLEEN. PROD INHALED AT CONCS OF 50,000 PPM & (ING 15)  
RTECS #:9999999ZZ

Ingred Name:ING 14:ABOVE HAS BEEN SHOWN  
IN TESTS ON DOGS TO SENSITIZE  
HEART TO EXOGENOUS(OUTSIDE BODY) ADRENALINE, RSLTG IN (ING 16)  
RTECS #:9999999ZZ

Ingred Name:ING 15:SERIOUS & SOMETIMES FATAL IRREG HEART BEATS(CARDIAC  
ARRHYS). LIFETIME INHAL STUDY ON RATS & MICE AT (ING 17)  
RTECS #:9999999ZZ

Ingred Name:ING 16:50,000 PPM(VOL), WAS WEAKLY CARCIN TO OLDEST MALE  
RATS (EXHIBITING LOW INCIDENCE OF FIBROSARCOMA IN (ING 18)  
RTECS #:9999999ZZ

Ingred Name:ING 17:SALIVARY GLAND. SIGNIFICANCE OF THIS FINDING IS  
QUESTIONABL  
E. TERATOGENIC STUDIES ON RATS & RABBITS (ING 19)  
RTECS #:9999999ZZ

Ingred Name:ING 18:SHOWED INCR INCIDENCE OF ABSENCE OF EYES IN RAT  
FETUSES AT EXPOS LEVELS OF 50,000 PPM. (EXPOS OCCURRED (ING 20)  
RTECS #:9999999ZZ

Ingred Name:ING 19:6TH-15TH DAY OF PREGNANCY). CHLOROFLUOROCARBON (CFC)  
MATLS HAVE PRDCD SENSIT OF MYOCARDIUM TO EPINEPHRINE(ING 21)  
RTECS #:9999999ZZ

Ingred Name:ING 20:IN LAB ANIMALS & COULD HAVE SIMILAR EFT IN HUMANS.  
ADRENOMIMETICS (I.E., EPINEPHRINE) MAY BE CONTR

A- (ING 22)  
RTECS #:9999999ZZ

Ingred Name:ING 21:INDICATED EXCEPT FOR LIFE-SUSTAINING USES IN HUMANS  
ACUTELY/CHRONICALLY EXPOS TO CFC'S .  
RTECS #:9999999ZZ

Ingred Name:FIRST AID PROC:PERSISTS, SEE MD. SKIN:FLUSH THORO (MIN OF  
10-15 MINS) W/LUKEWARM WATER/BALANCED SALINE SOLN. (ING 24)  
RTECS #:9999999ZZ

Ingred Name:ING 23:INGEST:KEEP PATIENT CALM, IF CONSCIOUS & GET TO MD  
IMMED. WARM SKIN SLOWLY.  
RTECS #:9999999ZZ

Ingred Name:WASTE DISP METH:SHOULD BE MANAGED IN APPROP MANNER. CON  
SULT  
40CFR261 & 262 FOR DETAILS ON HAZ WASTE DETERM & MANAGEMENT.  
RTECS #:9999999ZZ

=====  
===== Hazards Identification =====

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.  
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES  
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO  
Health Hazards Acute and Chronic:ACUTE:INHAL:RELATIVELY NONTOX  
FOLLOWING ACUTE EXPOS. ALTHOUGH NO LONG-TERM COMPREHENSIVE STUDIES  
HAVE SPECIFICALLY INVESTIGATED ACUTE OVEREX  
P OF HUMANS, EXPER  
INDICATES CVS & RESP SYS ARE PRIMARY SYS AFFECTED. ABUSE(INTENT  
INHAL) HAS CAUSED DEATH. HUMAN EXPOS TO HIGH CONCS(E.G. 20%) MAY  
CAUSE CONFUSN, (EFTS OF OVEREXP)  
Explanation of Carcinogenicity:NOT RELEVANT  
Effects of Overexposure:HLTH HAZ:LUNG(RESP) IRRIT, TREMORS & PERHAPS  
COMA, BUT THESE EFTS ARE GENRLY SHORT LIVED & REVERSIBLE W/OUT LATE  
AFTEREFTS WHEN REMOVED TO FRESH AIR. HIGH ATM CONCS PRDCE  
STIMULATION & THEN DEPRESS & FINALLY ASPHY. INGEST:NOT  
PROBABLE.  
AT ATM PRESS, LIQ BOILS @ -41.4F(-40.8C). FREEZING & SEV FROSTBITE  
OF (ING 6)  
Medical Cond Aggravated by Exposure:NONE SPECIFIED BY MANUFACTURER.

=====  
===== First Aid Measures =====

First Aid:INHAL:REMOVE TO FRESH AIR. KEEP WARM & AT REST. IF BRTHG IS  
DFCLT(LABORED), GIVE OXYGEN. IF NOT BRTHG, GIVE ARTF RESP & CHECK  
FOR PULSE. IF NO PULSE, START CPR. DO NOT GIVE  
STIMULANTS(ADRENALINE, EPIN EPHRINE/HANDHELD ASTHMA AEROSOLS).  
CA

LL911(IF AVAIL) & MD. KEEP PATIENT AT REST FOR 24 HRS AFTER  
OVEREXP. EYES:FLUSH THORO(MIN OF 15 MINS) W/LUKEWARM WATER/BALANCED  
SALINE SOLN; IF IRRIT (ING 23)

===== Fire Fighting Measures =====

Flash Point:NONFLAMMABLE

Extinguishing Media:MEDIA SUITABLE FOR SURROUNDING FIRE .

Fire Fighting Procedures:USE NIOSH/MSHA APPROVED PRESS DEMAND SCBA &  
FULL PROTECTIVE EQUIPMENT .

Unusual Fire/Explosion Hazard:THERMAL DECOMP PRODS MAY INCL FLUORIDES,  
CHL

ORIDES & PHOSGENE. NONFLAMM & NONEXPLO. ONE DOCUMENTED INCIDENT  
HAS BEEN REPORTED WHERE EXPLO OCCURRED(SUPDAT)

===== Accidental Release Measures =====

Spill Release Procedures:IN EVENT OF A SPILL OR LEAK, KEEP UPWIND.

VENTILATE ENCLOSED SPACES UNTIL GAS IS DISPERSED. DO NOT SMOKE OR  
OPERATE INTERNAL COMBUSTION ENGINES IN IMMEDIATE VICINITY.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage =====

=====

Handling and Storage Precautions:DO NOT BREATHE VAPS. NOT FOR FOOD,  
DRUG/COSMETIC USE. STORE & USE W/ADEQ VENT. PROD IS SHIPPED &  
STORED AS LIQUEFIED, COMPRESSED GAS UNDER PRESSURE.

Other Precautions:STORE IN COOL PLACE (120F). AVOID CONT W/EYES, SKIN &  
CLTHG. NO SMOKING IN AREA OF USE. DO NOT USE IN GEN VICIN OF ARC  
WELDING, OPEN FLAMES/HOT SURFS. HEAT &/OR UV RADIATION MAY CAUSE  
FORMATION OF CHL ORIDES, FLUORIDES OR PHOSGENE .

===== Exposure Controls/Personnel

Protection =====

Respiratory Protection:RESPIRATORY PROTECTION IS NOT NEEDED IF  
CONCENTRATIONS ARE CONTROLLED. IF CONCENTRATIONS EXCEED TLV (1000  
PPM), USE A NIOSH/MSHA APPROVED RESPIRATOR FOR ORGANIC VAPORS. IN  
VERY HIGH CONCS, A NIOSH/MSHA APPROVED SCBA SHOULD BE USED.

Ventilation:NEVER USE IN CLSD/CONFINED SPACE. LOCAL EXHST MAY BE  
NECESSARY TO REDUCE CONCS BELOW TLV (1000 PPM).

Protective Gloves:CLOTH-LINED RUBBER GLOVES.

Eye Protection:ANSI APPRVD CHEM WORKERS G

OGGS &(SUPDAT)

Other Protective Equipment:EYE WASH FOUNTAIN & DELUGE SHOWER WHICH MEET ANSI DESIGN CRITERIA . WEAR PROTECTIVE CLOTHING.

Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health

VP:136.7 PSIG @ 25C. EYE PROT:FULL LGTH FCSHLD . EXPLO HAZ:DURING WELD REPAIR OF COMPRESSOR SHELL WHICH APPARENTLY CNTND 50:50 MIXT OF AIR & PROD. AT HIGH TEMPS(1170F,632C) UNDER FAVORABLE LAB C NDTNS, PROD IS CAPABLE OF FORMING WEAKLY COMBUST MIXTS W/AIR. FORM OF COMBUST MIXTS, UNDER PRACTICAL CNDTNS, EVEN(ING 2)

===== Physical/Chemical Properties =====

Boiling Pt:B.P. Text:-41F,-41C

Vapor Pres:SUPP DATA

Vapor Density:2.76

Spec Gravity:1.2 (H\*2O=1)

Solubility in Water:3 G/L (% WT)

Appearance and Odor:COLORLESS LIQUID & VAPOR; VERY SLIGHT ETHEREAL ODOR TO ODORLESS.

Percent Volatiles by Volume:100

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

INCOMP

AT W/CERTAIN ELASTOMERS, ALKALI/ALKALINE EARTH METALS, POWDERED ALUMINUM, ZINC, BERYLLIUM, ETC. INDUSTRY (ING 3)

Stability Condition to Avoid:AVOID OPEN FLAME OR EXTREMELY HOT SURFACES.

Hazardous Decomposition Products:CHLORIDES, FLUORIDES & PHOSGENE . MAY DECOMPOSE INTO HF, HCL & CARBONYL HALIDES (I.E., PHOSGENE).

===== Disposal Considerations =====

Waste Disposal Methods:DISP MUST BE I/A/W FED, STATE & LOC REGS .

SHOULD THIS PROD BE COLLECTED F

ROM REFRIGERATION SYS, IT IS

CONSIDERED HAZ WASTE IF IT EXHIBITS HAZ WASTE CHARACT, I.E., IGNITABILITY, CORROSIVITY, REA CTIVITY/EP TOX. IF CONSIDERED HAZ WASTEIT(ING 25)

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 disclaims all liability for its use.

Any person utilizing this document should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation.