

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

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

RTECS #:9999999ZZ

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

RTECS #:9999999ZZ

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

RTECS #:9999999ZZ

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

MAY ALSO REACT, ESP AT HIGH TEMPS.

RTECS #:9999999ZZ

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

RTECS #:9999999ZZ

Inged 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

Inged 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

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

RTECS #:9999999ZZ

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

RTECS #:9999999ZZ

Inged 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

Inged

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 NONTX  
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 =====

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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, REACTIVITY/EP TOX. IF CONSIDERED HAZ WASTEIT(ING 25)

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