

ELF AUTOCHEM NORTH AMERICA FLUOROCHEMICALS -- FORANE 134A -- 6830-01-439-0614

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

Product ID:FORANE 134A

MSDS Date:01/29/1998

FSC:6830

NIIN:01-439-0614

Status Code:A

MSDS Number: CKNFM

=== Responsible Party ===

Company Name:ELF AUTOCHEM NORTH AMERICA FLUOROCHEMICALS

Address:2000 MARKET ST

City:PHILADELPHIA

State:PA

ZIP:19103-3222

Country:US

Info Phone Num:215-419-77

04\7695

Emergency Phone Num:215-419-7704

Resp. Party Other MSDS Num.:PRODUCT CODE: 04134-010

Preparer's Name:PRODUCT SAFETY DEPT

Chemtec Ind/Phone:(800)424-9300

CAGE:TO328

=== Contractor Identification ===

Company Name:ELF ATOCHEM NORTH AMERICA INC

Address:2000 MARKET STREET

Box:City:PHILADELPHIA

State:PA

ZIP:19103-3222

Country:US

Phone:800-245-5858

CAGE:86460

Company Name:ELF AUTOCHEM NORTH AMERICA FLUOROCHEMICALS

Address:2000 MARKET ST

Box:City:PHILADELPHIA

State:PA

ZIP:19103-3222

Country:US

Phone:215-419-7704\7695

CAGE:TO328

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Composition/Information on Ingredients
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Ingred Name:1,1,1,2-TETRAFLUOROETHANE OR R-134A OR HFC-134A

CAS:811-97-2

= Wt:100.

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Hazards Identification
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LD50 LC50 Mixture:4-HR LC50 (RATS) > 500,000 PPM

Health Hazards Acute and Chronic:CONTACT WITH THE LIQUID OR VAPORS CAN CAUSE FROSTBITE OR FREEZE BURNS TO ANY TISSUE DUE TO THE CRYOGENIC EFFECTS OF THE PRODUCT. EXPOSURE TO PRODUCT G

AS AT HIGH

CONCENTRATIONS MAY AFFECT THE CENTRAL N ERVOUS SYSTEM & PRODUCE A RAPID ANESTHETIC EFFECT. THE DENSE VAPOR IS HEAVIER THAN AIR AND DISPLACES AIR IN CONFINED SPACES, PRODUCING AN OXYGEN-DEFICIENT ATMOSPHERE, WHICH CAN BE FATAL. INHALATION MA Y CAUSE AN INCREASE IN SENSITIVITY OF THE HEART FOR ADRENALINE WHICH MAY CAUSE IRREGULAR HEARTBEAT.

Explanation of Carcinogenicity:NO DATA PROVIDED BY RESPONSIBLE PARTY.

Effects of Overexposure:SKIN CONTACT: FROSTBITE. INHA

LATION: HEADACHE,

DIZZINESS, DROWSINESS, CYANOSIS, LACK OF MUSCLE CONTROL, COLLAPSE, POSSIBLE DEATH.

Medical Cond Aggravated by Exposure:WORKERS WITH HEART DISEASE OR

COMPROMISED HEART FUNCTION SHOULD ONLY HAVE LIMITED EXPOSURE TO THIS MATERIAL.

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First Aid Measures
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First Aid:NGESTION: NOT APPLICABLE. DERMAL: FLUSH SKIN WITH LUKEWARM WATER (NOT HOT) - OR USE OTHER MEANS TO WARM SKIN SLOWLY. GET MEDICAL ATTENTION IF FROSTBI

TTEN BY LIQUID OR IF IRRITATION OCCURS.

EYE: IF IN EYES,IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION. INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION.

IF BREATHIN G IS DIFFICULT. GIVE OXYGEN. GET MEDICAL ATTENTION.

NOTE: DO NOT GIVE ADRENALINE, EPINEPHRINE, OR SIMILAR DRUGS FOLLOWING EXPOSURE TO THIS PRODUCT.

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Fire Fighting Measures
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Flash

Point:NONFLAMMABLE

Autoignition Temp:Autoignition Temp Text:N/E

Extinguishing Media:USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

Fire Fighting Procedures:WEAR SELF-CONTAINED BREATHING APPARATUS IF FIGHTING FIRES NEAR THIS PRODUCT DUE TO TOXICITY OF THERMAL DECOMPOSITION PRODUCTS. KEEP CONTAINERS COOL.

Unusual Fire/Explosion Hazard:HFC-134A IS NOT FLAMMABLE IN AIR UNDER NORMAL AMBIENT CONDITIONS. HOWEVER, MIXTURES OF HFC-134A WITH AIR OR OTHER OXIDIZERS

UNDER HIGH TEMP & PRESSURE, CAN BE FLAMMABLE. IN TESTS CONDUCTED AT UP TO 17 0 DEG C, HFC-134A S FLAMMABLE ONLY AT PRESSURES ABOVE 50 PSIA (35 PSIG) & WITH MORE THAN 50% AIR BY VOLUME.

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

Spill Release Procedures:REMOVE OR EXTINGUISH IGNITION OR COMBUSTION SOURCES. EVACUATE ENCLOSED SPACES UNTIL GAS IS DISPERSED. KEEP UPWIND. STOP LEAK IF POSSIBLE WITHOUT RISK. DISPERSE GAS WITH FLOOR-LEVEL FORCED-AIR VEN

TILATION. EXHAUST VAPORS OUTDOORS.

REMOVE ALL FLAMES,HEATING ELEMENTS & GAS ENGINES. WASH CONTAMINATED CLOTHES BEFORE REUSE. DESTROY CONTAMINATED SHOES.

Neutralizing Agent:NO DATA PROVIDED BY RESPONSIBLE PARTY.

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

Handling and Storage Precautions:DO NOT APPLY DIRECT FLAME TO CYLINDER. DO NOT STORE CYLINDER IN DIRECT SUN OR EXPOSE IT TO HEAT ABOVE 120 DEG F. DO NOT DROP OR REFILL THIS CONTAINER. KEEP AWAY FROM HEA

T, SPARKS & FLAMES.AVOID BREATHING VAPOR OR GAS. AVOID CONTACT WITH LIQUID. USE WITH ADEQUATE VENTILATION.

Other Precautions:DO NOT ENTER STORAGE AREAS UNLESS ADEQUATELY VENTILATED. KEEP CYLINDER VALVE TIGHTLY CLOSED WHEN NOT IN USE.

===== Exposure Controls/Personal Protection =====

Respiratory Protection:USE NIOSH/MSHA APPROVED FULL FACE SUPPLIED AIR RESPIRATOR OR SELF-CONTAINED BREATHING APPARATUS WHERE EXPOSURE IS LIKELY TO EXCEED THE RECOMMENDED EXPOS

URE LIMITS. IF USED, FULL

FACEPIECE REPLACES NEE D FOR CHEMICAL GOGGLES &/OR FACESHIELD. FOR EMERGENCIES, USE SCBA WITH AUXILIARY SELF-CONTAINED AIR SUPPLY.

RESPIRATORY PROGRAMS MUST BE IAW 29 CFR 1910.134.

Ventilation:DILUTION VENTILATION ACCEPTABLE, BUT LOCAL MECHANICAL EXHAUST VENTILATION PREFERRED, IF PRACTICAL, AT SOURCES OF CONTAMINATION.

Protective Gloves:SYNTHETIC RUBBER GLOVES SUCH AS NEOPRENE.

Eye Protection:CHEMICAL GOGGLES.

Other Protective Equipment:EYE FLUSHING

EQUIPMENT IMMEDIATELY

AVAILABLE. LINED GLOVES ARE RECOMMENDED FOR PROTECTON FROM COLD.

WEAR APPROPRIATE CHEMICAL RESISTANT PROTECTIVE CLOTHING TO PREVENT SKIN CONTACT.

Work Hygienic Practices:AVOID BREATHING VAPOR, MIST OR FUME.

Supplemental Safety and Health

NA OR N/A=NOT APPLICABLE. NE OR N/E=NOT ESTABLISHED. NOTE FROM

SAMMS-CTDF: THIS NSN IS RESERVED FOR THE TURN-IN OF USED AND

RECOVERED MATERIAL TO THE DOD REFRIGERANT GAS RESERVE. CYLINDER TO

BE USED W ITH THIS IS 812

0-01-394-2653.

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

HCC:G3

Boiling Pt:=-26.4C, -15.5F

Melt/Freeze Pt:=-101.C, -149.8F

Vapor Pres:4946 MM HG @ 77 DEG F

Vapor Density:3.52

Spec Gravity:1.21@25 DEG C

Solubility in Water:NEGLIGIBLE

Appearance and Odor:CLEAR, COLORLESS LIQUIFIED GAS WITH FAINT ETHEREAL (ETHER-LIKE) ODOR

Percent Volatiles by Volume:100

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

Stability Indicator/Materials to Avoid:YES

STRONG ALKALI, STRONG OXIDIZERS, ALKALINE EARTH METALS, FINELY POWDERED METALS SUCH AS: ALUMINUM, MAGNESIUM, ZINC.

Stability Condition to Avoid:FLAMES, EXTREMELY HOT METAL SURFACES, HEATING ELEMENTS, COMBUSTION ENGINES, ETC.

Hazardous Decomposition Products:THERMAL DECOMPOSITION PRODUCTS INCLUDE HYDROGEN FLUORIDE, CARBON MONOXIDE, & CARBON DIOXIDE.

===== Toxicological Information =====

Toxicological Information:DATA FROM LABORATORY STUDIES CONDUCTED BY

ELF

ATOCHEM NORTH AMERICA, INC. AND FROM THE SCIENTIFIC LITERATURE ON HFC 134A ARE SUMMARIZED: SINGLE EXPOSURE STUDIES INDICATE: INHALATION-PRACTICALLY NON-TOXIC TO RATS: 4-HR LC50 >500,000 PPM; 30MIN LC50 APPROXIMATELY 750,000 PPM. EYE IRRITATION: SLIGHTLY IRRITATING TO RABBITS. SKIN IRRITATION: SLIGHTLY IRRITATING TO RABBITS (24 HR EXPOSURE). NO ALLERGENIC RESPONSE WAS OBSERVED IN GUINEA PIGS FOLLOWING REPEATED SKIN EXPOSURE TO HFC 134A.

INHALATION OF HIGH CONCENTRATIONS OF THIS MATERIAL (.50,000 PPM) CAUSED ANESTHETIC EFFECTS IN LABORATORY TEST ANIMALS.

===== Ecological Information =====

Ecological: ECOTOXICOLOGICAL INFORMATION: THE LOG OF THE OCTANOL/WATER PARTITION COEFFICIENT (LOG POW) FOR HFC 134A IS 1.06. HFC 134A DOES NOT DISSOCIATE IN WATER. CHEMICAL FATE: A 28-DAY BIODEGRADATION STUDY WITH HFC 134A USING AN ACTIVATED SLUDGE INOCULUM PRODUCED 3% BIODEGRADATION.

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Disposal Considerations =====

Waste Disposal Methods: RECYCLE OR RECLAIM IF POSSIBLE. RECLAIMED MATERIAL MAY BE INCINERATED BUT TOXIC & CORROSIVE COMBUSTION PRODUCTS (HF & HCL) MUST BE HANDLED APPROPRIATELY. CONSULT FEDERAL, STATE, OR LOCAL AUTHORITIES FOR PROPER DISPOSAL PROCEDURES.

===== MSDS Transport Information =====

Transport Information: 1,1,1,2-TETRAFLUOROETHANE, 2.2 NONFLAMMABLE GAS, UN3159.

===== Regulatory Information =====

SARA Title III Information: NO DATA PROVIDED BY RESPONSIBLE PARTY.
Federal Regulatory Information: NO DATA PROVIDED BY RESPONSIBLE PARTY.
State Regulatory Information: NO DATA PROVIDED BY RESPONSIBLE PARTY.

===== Other Information =====

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