

AIR LIQUIDE AMERICA CORP -- NON-FLAMMABLE GAS MIXTURE -- 6830-01-456-6319

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

Product ID:NON-FLAMMABLE GAS MIXTURE

MSDS Date:03/10/2000

FSC:6830

NIIN:01-456-6319

MSDS Number: CKCJT

=== Responsible Party ===

Company Name:AIR LIQUIDE AMERICA CORP

Address:821 CHESAPEAKE DRIVE

City:CAMBRIDGE

State:MD

ZIP:21613

Country:US

Info Phone Num:410-228-6400;713-868-0440

Emergency

Phone Num:713-868-0440

Resp. Party Other MSDS Num.:MSDS # 50009

Preparer's Name:NOT PROVIDED.

Chemtrec Ind/Phone:(800)424-9300

CAGE:04AA7

=== Contractor Identification ===

Company Name:AIR LIQUIDE AMERICA CORP

Address:821 CHESAPEAKE DRIVE

Box:City:CAMBRIDGE

State:MD

ZIP:21613

Country:US

Phone:410-228-6400;713-868-0440

CAGE:04AA7

Company Name:BACHARACH INC

Address:625 ALPHA DRIVE

Box:City:PITTSBURGH

State:PA

ZIP:15238

Country:US

Phone:412-963-2130

Contract Num:SP0450-00-M-AA70

CAGE:05083

Company

Name:BACHARACH INC
Address:625 ALPHA DRIVE
Box:City:PITTSBURGH
State:PA
ZIP:15238
Country:US
Phone:412-963-2130
Contract Num:SP0450-01-M-D845
CAGE:05083
Company Name:BACHARACH INC
Address:625 ALPHA DRIVE
Box:City:PITTSBURGH
State:PA
ZIP:15238
Country:US
Phone:412-963-2130
Contract Num:SP0450-01-M-D872
CAGE:05083

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

Ingred Name:OXYGEN
CAS:7782-44-7
RTECS #:RS2060000
Minumum % Wt:0.
Maxumum % Wt:23.5
Other REC Limits:NOT PROVIDED
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OSHA PEL:NOT ESTABLISHED.
ACGIH TLV:NOT ESTABLISHED.

Ingred Name:METHANE
CAS:74-82-8
RTECS #:PA1490000
Minumum % Wt:0.
Maxumum % Wt:2.5
Other REC Limits:NOT PROVIDED.
OSHA PEL:NOT ESTABLISHED.
ACGIH TLV:NOT ESTABLISHED.

Ingred Name:HYDROGEN
CAS:1333-74-0
RTECS #:MW8900000
Minumum % Wt:0.
Maxumum % Wt:2.
Other REC Limits:NOT PROVIDED.
OSHA PEL:NOT ESTABLISHED.
ACGIH TLV:NOT ESTABLISHED.

Ingred Name:CARBON MONOXIDE
CAS:630-08-0
RTECS #:FG3500000
Fraction by Wt: 0.0005-1%
Other REC Limits:REL(

NIOSH) 35 PPM
OSHA PEL:55 MG/M3;50 PPM
ACGIH TLV:29 MG/M3;25 PPM

Ingred Name:NITROGEN
CAS:7727-37-9
RTECS #:QW9700000
Fraction by Wt: BALANCE
Other REC Limits:NOT PROVIDED.
OSHA PEL:NOT ESTABLISHED.
ACGIH TLV:NOT ESTABLISHED.

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

LD50 LC50 Mixture:NOT PROVIDED.

Routes of Entry: Inhalation:YES Skin:NO Ingestion:NO

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

Health Hazards Acute and Chronic:ACUTE: DUE TO THE SMALL SIZE
OF THE

INDIVIDUAL CYLINDER OF THIS PRODUCT, NO UNUSUAL HEALTH EFFECTS FROM EXPOSURE TO THE PRODUCT ARE ANTICIPATED UNDER ROUTINE CIRCUMSTANCES OF USE. HOWEVER, CARBON MONOXIDE (A COMPONENT OF THIS GAS MIXTURE) IS TOXIC TO HUMANS. SYMPTOMS OF CARBON MONOXIDE POISONING CAN DEVELOP GRADUALLY, OR CAN ARISE SUDDENLY, DEPENDING ON THE CONCENTRATION AND DURATION OF EXPOSURE. LIPS AND FINGERNAILS WILL TURN BRIGHT RED WHICH IS A SIGNIFICANT SIGN OF CARBON MONOXIDE OVER-E

XPOSURE. CHRONIC: THERE ARE CURRENTLY NO KNOWN ADVERSE HEALTH EFFECTS ASSOCIATED WITH CHRONIC EXPOSURE TO THIS GAS.

Explanation of Carcinogenicity:THE COMPONENTS OF THIS GAS MIXTURE ARE NOT FOUND ON THE FOLLOWING LISTS: FEDERAL OSHA Z LIST, NTP, CAL/OSHA AND IARC. THEREFORE ARE NOT CONSIDERED TO BE, NOR SUSPECTED TO BE, CANCER-CAUSING AGENTS BY THESE AGENCIES.

Effects of Overexposure:CARBON MONOXIDE IS TOXIC TO HUMANS. SYMPTOMS OF CARBON MONOXIDE POISONING CAN DEVELOP GRADUALLY, OR CAN ARISE

SUDDENLY, DEPENDING ON THE CONCENTRATION AND DURATION OF EXPOSURE. LIPS AND FINGERNAILS WILL TURN BRIGHT RED WHICH IS A SIGNIFICANT SIGN OF CARBON MONOXIDE OVER-EXPOSURE. OTHER SYMPTOMS OF OVER-EXPOSURE CAN INCLUDE RESPIRATORY DIFFICULTY, HEADACHES, SHORTNESS OF BREATH, WHEEZING, HEADACHE, BLURRED VISION, MEMORY LOSS, DIZZINESS, INDIGESTION, NAUSEA, UNCONSCIOUSNESS AND DEATH.

Medical Cond Aggravated by Exposure:PRE-EXISTING RESPIRATORY CONDITIONS

MAY BE AGGRAVATED BY OVER-EXPOSURE TO THIS PRODUCT. CARBON MONOXIDE CAN AGGRAVATE DISEASES OF CARDIOVASCULAR SYSTEM, SUCH AS CORONARY ARTERY DISEASE, ANGINA PECTORIS.

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

First Aid:RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS PRODUCT WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. AT A MINIMUM SELF CONTAINED BREATHING APPARATUS MUST BE WORN. NO UNUSUAL HEALTH EFFECTS ARE ANTICIPATED AFTER EXPOSURE TO THIS PRODUCT DUE TO THE SMALL CYLINDER SIZE. IF ANY ADVERSE SYMPTOM DEVELOPS AFTER OVER-EXPOSURE TO THIS PRODUCT, REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. ONLY TRAINED PERSONNEL SHOULD ADMINISTER SUPPLEMENTAL OXYGEN AND/OR CARDIO-PULMONARY RESUSCITATION IF NECESSARY.

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

Autoignition Temp:Autoignition Temp Text:NOT AP
Lower Limits:NOT APPLICABLE
Upper Limits:NOT APPLICABLE
Extinguishing Media:NON-FLAMMABLE GAS MIXTURE. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.
Fire Fighting Procedures:STRUCTURAL FIREFIGHTERS MUST WEAR SELF CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE EQUIPMENT.
Unusual Fire/Explosion Hazard:THIS GAS MIXTURE IS NOT FLAMMABLE, HOWEVER, CONTAINERS, WHEN INVOLVED IN FIRE, MAY RUPTURE OR BURST IN THE HEAT OF THE FIRE.

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

Spill Release Procedures:DUE TO THE SMALL SIZE AND CONTENT OF THE CYLINDER, AN ACCIDENTAL RELEASE PRESENTS SIGNIFICANTLY LESS RISK THAN A SIMILAR RELEASE FROM A LARGER CYLINDER. TRAINED PERSONNEL SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND VENTILATE AREA. IN CASE OF A LEAK, CLEAR THE AFFECTED AREA, PROTECT PEOPLE, AND RESPOND WITH TRAINED PERSONNEL. IF LEAKING INCIDENTALLY FROM THE CYLINDER, CONTACT YOUR SUPPLIER.
Neutralizing Agent:NOT RELEVANT.

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

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Handling and Storage Precautions:CYLINDERS SHOULD BE FIRMLY SECURED AND KEPT AT ROOM TEMPERATURE (21C,70F). CYLINDERS SHOULD BE STORED IN DRY, WELL-VENTILATED AREAS, AWAY FROM SOURCES OF HEAT, IGNITION AND DIRECT SUNLIGHT. PROTECT CY LINDERS AGAINST PHYSICAL DAMAGE. FULL AND EMPTY CYLINDERS SHOULD BE SEGREGATED.

Other Precautions:USE A FIRST-IN, FIRST-OUT SYSTEM. DO NOT REFILL DOT 39 CYLINDERS. COMPRESSED GASES CAN PRESENT SIGNIFICANT SAFETY HAZARDS. DURING CYLINDER U SE, USE EQUIPMENT DESIGNED FOR THESE CYLINDERS. ENSURE ALL L INES AND EQUIPMENT ARE RATED FOR PROPER SERVICE PRESSURE. THESE CYLINDERS ARE NOT REFILLABLE.

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

Respiratory Protection:NO SPECIAL RESPIRATORY PROTECTION IS REQUIRED UNDER NORMAL CIRCUMSTANCES OF USE. USE SUPPLIED AIR RESPIRATORY PROTECTION IF CARBON MONOXIDE LEVEL EXCEEDS LIMITS AND OXYGEN LEVELS ARE BELOW 19.5% OR U NKNOWN DURING EMERGENCY RESPONSE TO A RELEASE OF PRODUCT. IF RESPIRATORY PROTECTION IS REQUIRED, FOLLOW OSHA RESPIRATORY PROTECTION STANDARD (29 CFR 1910.134).

Ventilation:NO SPECIAL VENTILATION SYSTEMS/ENGINEERING CONTROLS ARE NEEDED UNDER NORMAL CIRCUMSTANCES OF USE. AS WITH ALL CHEMICALS, USE PRODUCT IN WELL-VENTILATED AREAS.

Protective Gloves:NO SPECIAL PROTECTION IS NEEDED UNDER NORMAL CIRCUMSTANCES OF USE.

Eye Protection:SAFETY GLASSES

Other Protective Equipment:NO SPECIAL PROTECTION IS NEEDED UNDER N ORMAL CIRCUMSTANCES OF USE.

Work Hygienic Practices:NOT PROVIDED.

Supplemental Safety and Health

THIS MSDS IS WRONG FOR THIS NSN. CORRECT COMPOSITION IS 1.6% HYDROGEN IN AIR. DO NOT USE THIS MSDS, SEE MSDS # CKFFL, SAME NSN. (DSCR-HMIS, 3-22-00)

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

HCC:G3

Boiling Pt:=-195.6C, -320.4F

B.P. Text:FOR NITROGEN

Melt/Freeze Pt:=-210.C, -346.F

M.P/F.P Text:@ 10 PSIG

Vapor Density:0.906

Spec Gravity:0.072 LBS/FT3(1.153KG/M3)

Evaporation Rate & Reference: NOT APPLICABLE (BUAC=1)

Solubility in Water: 0.023 @ 32 DEG F & 1 ATM

Appearance and Odor: THIS PRODUCT IS A COLORLESS, ODORLESS GAS MIXTURE.

Percent Volatiles by Volume: 100

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

Stability Indicator/Materials to Avoid: YES

TITANIUM WILL BURN IN NITROGEN. LITHIUM REACTS SLOWLY WITH NITROGEN AT AMBIENT TEMPERATURES. HYDROGEN, CARBON MONOXIDE, METHANE ARE INCOMPATIBLE WITH STRONG OXIDIZERS (I.E. C

HLORINE, BROMINE

PENTAFLUORIDE..). CARBON MONOXID

Stability Condition to Avoid: NORMALLY STABLE IN GASEOUS STATE. AVOID

CONTACT WITH INCOMPATIBLE MATERIALS. CYLINDERS EXPOSED TO HIGH TEMPERATURES OR DIRECT FLAME CAN RUPTURE OR BURST.

Hazardous Decomposition Products: THE THERMAL DECOMPOSITION PRODUCTS OF METHANE INCLUDE CARBON OXIDES. THE OTHER COMPONENTS OF THIS GAS MIXTURE DO NOT DECOMPOSE, PER SE, BUT CAN REACT WITH OTHER COMPOUNDS IN THE HEAT OF A FIRE.

Conditions to Av

oid Polymerization: WILL NOT OCCUR

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

Toxicological Information: CARBON MONOXIDE: TCL0 (INHALATION, MOUSE) = 65 PPM/24 HOURS. LC50 (INHALATION, RAT) = 1811 PPM/4 HOURS. LC50 (INHALATION, WILD BIRD) = 1334 PPM.

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

Ecological: THE COMPONENTS OF THIS GAS MIXTURE OCCUR NATURALLY IN THE ATMOSPHERE. THE GAS WILL BE DISSIPATED RAPIDLY IN WELL-VENTILATED AREA

S. NO EVIDENCE IS CURRENTLY AVAILABLE ON THIS PRODUCT'S EFFECTS ON PLANT AND ANIMAL LIFE. CARBON MONOXIDE CAN BE DEADLY TO EXPOSED ANIMAL LIFE. CARBON MONOXIDE MAY ALSO BE HARMFUL TO PLANT LIFE. THE PRESENCE OF MORE THAN A TRACE OF CARBON MONOXIDE IS A HAZARD TO FISH.

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

Waste Disposal Methods: WASTE DISPOSAL MUST BE IN ACCORDANCE WITH APPROPRIATE FEDERAL, STATE, AND LOCAL REGULATIONS. CYLINDERS WITH UNDES

IRRED RESIDUAL PRODUCT MAY BE SAFELY VENTED OUTDOORS WITH THE
PROPER REGULATOR.

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

Transport Information:PROPER SHIPPING NAME: COMPRESSED GASES, N.O.S.
(NITROGEN, OXYGEN). HAZARD CLASS: 2.2. UN IDENTIFICATION NUMBER:
UN 1956. DOT LABEL: NON-FLAMMABLE GAS. NOTE: DOT 39 CYLINDERS SHIP
IN A STRONG OUTER CARTON (OVERPACK). CYLINDERS SHOULD BE
TRANSPORTED IN A SECURE POSITION, IN A WELL-VENTILATED VEHICLE. THE

TRANSPORTATION OF COMPRESSED GAS CYLINDERS IN AUTOMOBILES OR IN
CLOSED-BODY VEHICLES CAN PRESENT SERIOUS SAFETY HAZARDS.

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

SARA Title III Information:NOT APPLICABLE.

Federal Regulatory Information:TSCA INVENTORY STATUS: THE COMPONENTS OF
THIS GAS MIXTURE ARE LISTED ON THE TSCA INVENTORY.

State Regulatory Information:CARBON MONOXIDE IS ON THE CALIFORNIA
PROPOSITION 65 LIST AS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA

TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. ALASKA -
DESIGNATED TOXIC AND HAZARDOUS SUBSTANCE: CARBON MONOXIDE.
CALIFORNIA - PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS:
CARBON MONOXIDE. FLORIDA - SUBSTANCE LIST: CARBON MONOXIDE.
ILLINOIS - TOXIC SUBSTANCE LIST: CARBON MONOXIDE. MASSACHUSETTS -
SUBSTANCE LIST: CARBON MONOXIDE. OTHER STATES ARE: MINNESOTA, NEW
JERSEY, PENNSYLVANIA, RHODE ISLAND.

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

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particular situation.