AIR LIQUIDE AMERICA CORP -- NON-FLAMMABLE GAS MIXTURE -- 6830-01-424-2499
========== Product Identification ==========

Product ID:NON-FLAMMABLE GAS MIXTURE
MSDS Date:03/25/1997
FSC:6830
NIIN:01-424-2499
MSDS Number: CKFJJ
=== 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:1-800-424-9300
Resp. Party Other MSDS Num.:50009
Preparer's Name:CHEMICAL SAFETY ASSOC.
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:GAS TECH INC. JOHNSON INSTRUMENT DIV
Address:8445 CENTRAL AVE
Box:City:NEWARK
State:CA
ZIP:94560-3431
Country:US
Phone:510-794-6200
CAGE:51906
Company

Name:NEW ERA CONTRACT SALES
Address:2513 TACOMA AVE S
Box:City:TACOMA
State:WA
ZIP:98402-1308
Country:US
Phone:253-272-3553
Contract Num:SP0450-00-M-D755
CAGE:0FA68

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

Ingred Name:OXYGEN
CAS:7782-44-7
RTECS #:RS2060000
Minumum % Wt:0.
Maxumum % Wt:23.5

Ingred Name:METHANE
CAS:74-82-8
RTECS #:PA1490000
Minumum % Wt:0.
Maxumum % Wt:2.5

Ingred Name:HYDROGEN
CAS:1333-74-0
RTECS #:MW8900000
Minumum % Wt:0.
Maxumum % Wt:2.

Ingred N
ame:CARBON MONOXIDE
CAS:630-08-0
RTECS #:FG3500000
< Wt:1.
OSHA PEL:55 MG/M3;50 PPM
ACGIH TLV:29 MG/M3;25 PPM

Ingred Name:NITROGEN
CAS:7727-37-9
RTECS #:QW9700000
Minumum % Wt:0.
Code:F
Maxumum % Wt:2.9
Code:F

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

Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:TARGET ORGANS: RESPIRATORY SYSTEM, BLOOD SYSTEM, CARDIOVASCULAR SYSTEM, REPRODUCTIVE SYSTEM. ACUTE: DUE TO THE SMALL SIZE

OF THE INDIVIDUAL CYLINDER, NO UNUSUAL HEALTH
EFFECTS FROM EXPOSURE TO THE PRO DUCT ARE ANTICIPATED UNDER ROUTINE CIRCUMSTANCES OF USE. HOWEVER, CARBON MONOXIDE IS TOXIC TO HUMANS. SYMPTOMS OF CARBON MONOXIDE POISONING CAN DEVELOP GRADUALLY, OR CAN ARISE SUDDENLY, DEPENDING ON T HE CONCENTRATION AND DURATION OF EXPOSURE. OTHER SYMPTOMS OF OVER-EXPOSURE CAN INCLUDE RESPIRATORY DIFFICULTY, HEADACHES, SHORTNESS OF BREATH, WHEEZING, BLURRED VISION, MEMORY LOSS, DIZZINESS
, INGESTI ON, NAUSEA, UNCONSCIOUSNESS
& DEATH.

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 THESE AGENCIES.

Effects of Overexposure:ALLEXPOSURE LEVELS: OVEREXPOSURE TO CARBON MONOXIDE CAN BE INDICATED BY THE LIPS & FINGERNAILS TURNING BRIGHT RED. 200PPM: SLIGHT SYMPTOMS (HEADACHE, DISCOMF
ORT) AFTER SEVERAL
HOURS OF EXPOSURE. 400PP M: HEADACHE & DISCOMFORT EXPERIENCED WITHIN 2-3 HOURS OF EXPOSURE. 1,000-2,000PPM: WITHIN 30 MINUTES, SLIGHT PALPITATION OF THE HEART OCCURS. WITHIN 1.5 HOURS, THERE IS A TENDENCY TO STAGGER. 200-2500 PPM: WITHIN 2 HOURS, THERE IS MENTAL CONFUSION, HEADACHES, & NAUSEA. UNCONSCIOUSNESS WITHIN 30 MINUTES. >25000 PPM: POTENTIAL FOR COLLAPSE & DEATH BEFORE WARNING SYMPTOMS ARE PRODUCED.

Medical Cond Aggravated by Exposure:PRE-E
XISTING RESPIRATORY CONDITIONS
MAY BE AGGRAVATED BY OVER-EXPOSURE TO THIS PRODUCT. CARBON MONOXIDE, A COMPONENT OF THIS GAS MIXTURE, CAN AGGRAVATE SOME DISEASES OF THE CARDIOVASCULAR SYSTEM.

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

First Aid:RESCUERS SHOULD WEAR PERSONAL PROTECTIVE EQUIPMENT. AT A MINIMUM, SELF-CONTAINED BREATHING APPARATUS MUST BE WORN. NO UNUSUAL HELTH EFFECTS ARE ANTICIPATED AFTER EXPOSURE TO THIS PRODUCT, DUE TO THE S MAL
L CYLINDER SIZE. IF ANY ADVSERSE SYMPTOM
DEVELOPS AFTER OVER-EXPOSURE TO THIS PRODUCT, REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. ONLY TRAINED PERSONNEL SHOULD ADMINISTER SUPPLEMENTAL OX YGEN AND/OR CARDIO-PULMONARY RESUSCITATION IF NECESSARY. VICTIM(S) WHO EXPERIENCE ANY ADVERSE EFFECT AFTER OVER-EXPOSURE TO THIS PRODUCT MUST BE TAKEN FOR MEDICAL ATTENTION. RESCUERS SHOULD BE TAKEN F OR MEDICAL ATTENTION IF NEEDED.

========== Fire Fighting Mea

sures ==========

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 OF THIS PRODUCT PRESENTS SIGNIFICANTLY LESS RISK OF AN OXYGEN DEFICIENT ENVIRONMENT AND OTHER SAFETY HAZARDS THAN A SIMILAR REL EASE FROM A LARGER CYLINDER. HOWEVER, AS WITH ANY CHEMICAL RELEASE, EXTREME CAUTION MUST BE USED DURING EMERGENCY RESPONSE PROCEDURES.

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

Handling and Storage Precautions:CYLINDERS SHOUL
D BE FIRMLY SECURED &
KEPT AT ROOM TEMPERATURE (~21C, 70F). CYLINDERS SHOULD BE STORED IN DRY, WELL-VENTILATED AREAS, AWAY FROM SOURCES OF HEAT, IGNITION & DIRECT SUNLIGHT. PROTECT CYLI NDERS AGAINST PHYSICAL DAMAGE. FULL AND EMPTY CYLINDERS SHOULD BE SEGREGATED.
Other Precautions:FOR HANDLING GAS CYLINDERS: WARNING! COMPRESSED GASES CAN PRESENT SIGNIFICANT SAFETY HAZARDS. DURING CYLINDER USE, USE EQUIPMENT DESIGNED FOR THESE SPECIFIC CYLINDERS. ENSURE ALL LINES AND E
QUIPMENT A RE RATED FOR PROPER SERVICE PRESSURE.

========== 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 & OXYGEN LEVELS ARE BELOW 19.5% OR UNKN OWN DURING EMERGENCY RESPONSE TO RELEASE OF THIS PRODUCT. IF RESPIRATORY PROTECTION IS REQUIRED FOR EMERGENCY RESPONSE TO THIS PRODUCT, F

OLLOW 29 CFR 1910.134.
Ventilation:NO SPECIAL VENTILATION SYSTEMS OR ENGINEERING CONTROLS ARE NEEDED UNDER NORMAL CIRCUMSTANCES OF USE. AS WITH ALL CHEMICALS, USE THIS PRODUCT IN WELL-VENTILATED
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 NORMAL CIRCUMSTANCES OF USE.
Work Hygienic Practices:BE AWARE OF ANY SIGNS OF DIZZINESS OR FATIGUE; EXPO
SURES TO FATAL CONCENTRATIONS OF THIS PRODUCT COULD OCCUR WITHOUT ANY SIGNIFICANT WARNING SYMPTOMS, DUE TO OXYGEN DEFICIENCY.
Supplemental Safety and Health
HYGIENE: DO NOT ATTEMPT TO REPAIR, ADJUST, OR IN ANY OTHER WAY MODIFY THE CYLINDERS CONTAINING CARBON MONOXIDE. IF THERE IS A MALFUNCTION OR ANOTHER TYPE OF OPERATIONAL PROBLEM, CONTACT NEAREST DISTRI BUTOR IMMEDIATELY. ***DOCUMENT NUMBER: 50009

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

HCC:G3
Boi
ling Pt:=-195.6C, -320.4F
Melt/Freeze Pt:=-209.7C, -345.8F
M.P/F.P Text:@10 PSIG
Spec Gravity:0.906@70F(21.1C)(AIR=1)
Solubility in Water:0.023
Appearance and Odor:COLORLESS, ODORLESS GAS MIXTURE

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

Stability Indicator/Materials to Avoid:YES
TITANIUM WILL BURN IN NITROGEN (THE MAIN COMPONENT OF THIS PRODUCT). LITHIUM REACTS SLOWLY WITH NITROGEN AT AMBIENT TEMPS. COMPONENTS OF THIS PRODUCT (HYDROGEN, CARBON MONOXIDE, METHA
NE) ARE ALSO
INCOMPATIBLE WITH STRONG OX
Stability Condition to Avoid:NORMALLY STABLE IN GASEOUS STATE.
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 Avoid Polymerization:CONTACT WITH INCOMPATIBLE MATERIALS. CYLINDERS EXPOSED TO HIGH TEMPERATURES OR DIRECT FLAME CAN RUPTURE OR BUR

ST.

========== 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. NITROGEN, HYDROGEN & METHANE: THERE ARE NO SPECIFIC TOX ICOLOGICAL DATA FOR NITROGEN, HYDROGEN & METHANE IS A SIMPLE ASPHYXIANT, WHICH ACTS TO DISPLACE OXYGEN IN THE ENVIRONMENT. OXYGEN: OXYGEN IS THE VITAL ELEMENT IN THE ATMOSPHERE
IN WHICH WE LIVE & BREA THE. TOXICOLOGICAL DATA ARE AVAILABLE FOR OXYGEN, BUT DUE TO THE SMALL CYLINDER SIZE & SUBSEQUENT SMALL TOTAL AMOUNT OF OXYGEN IN THIS MIXTURE, NO EFFFECTS ARE ANTICIPATED.

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

Ecological:ENVIRONMENTAL STIBILITY: THE COMPONENTS OF THIS GAS MIXTURE OCCUR NATURALLY IN THE ATMOSPHERE. THE GAS WILL BE DISSIPATED RAPIDLY IN WELL-VENTILATED AREAS. EFFECT OF MATERIAL ON PLANT OR ANIMALS:
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. EFFECT OF C HEMICAL ON AQUATIC 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 RE
GULATIONS. CYLINDERS WITH
UNDESIRED 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 (NON-FLAMMABLE GAS). UN IDENTIFICATION NUMBER: UN 1956. DOT LABEL: NON-FLAMMABLE GAS. NOTE: DOT 39 CYLINDERS SHIP IN A STRONG OUTER CARTON (OVERPACK). PERTINENT SHIPPING INFORMATION GOES

ON THE OUTSIDE OF THE OVERPACK.
DOT 39 CYLINDERS DO NOT HAVE TRANSPORTATION INFORMATION ON THE CYLINDER ITSELF. CYLINDERS SHOUL D 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 SEROUS 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. CARBON MONOXIDE IS SUBJECT TO THE REPORTING REQUIREMENTS OF CFR 29 1910.1000. CARBON MONOXIDE IS LISTED ON T ABLE Z.1.
State Regulatory Information:CARBON MONOXIDE IS ON THE CALIFORNIA PROPOSITION 65 LISTS AS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. ALASKA - DESIGNATED TOXIC AND HAZARDOUS SUBS TANCE: CARBON MONOXIDE. CALIFORNIA - PERMISSI
BLE EXPOSURE LIMITS FOR CHEMICAL
CONTAMINANTS: CARBON MONOXIDE. FLORIDA - SUBSTANCE LIST: CARBON MONOXIDE. ILLINOIS - TOXIC SUBSTANCE LIST: CARBON MONO XIDE. MASSACHUSETS - SUBSTANCE LIST: CARBON MONOXIDE. OTHER STATES ARE: MINESOTA,MISSOURI, NEW JER SEY, NORTH DAKOTA, PENNSYLVANIA, RHODE ISLAND, TEXAS, WEST VIRGINIA, WISCONSIN.

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

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