

===== MSDS			
Safety Information			
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FSC:	NIIN:	MSDS Date:	MSDS Num:
6830	00-808-9531	06/01/1990	CKZRC
Submitter:		Tech Review:	Status CD:
G GF		03/04/1999	A
Product ID:			MFN:
OXYGEN, LOX (LIQUID ONLY), GOX (GAS ONLY)			01
Article:			Kit Part:
N			N
	Cage:		
Responsible Party	00742		
Name:			
AIR PRODUCTS AND CHEMICALS INC.			
Address:			Box:
7201 HAMILTON BLVD			N/K
City:		State:	Zip:
ALLENTOWN		PA	18195-1501
Country:			
US			
Info Phone Number:			
215-481-4911			
Emergency Phone Number:			
215-481-4911 OR 800-523-9374			
Preparer's Name:			
N/P			
Proprietary Ind:			
N		Review Ind:	Y
Published:	Y	Special Project CD:	N

===== Contractor			
Summary			
=====			
Cage:	Name:		
00742	AIR PRODUCTS AND CHEMICALS INC		
Address:			
7201 HAMILTON BLVD			
City:		State:	Zip:
ALLENTOWN		PA	18195-1501
Country:		Phone:	
US		800-345-3148/ 800-752-1597	

Cage:	Name:		
99251	LITTON SYSTEMS INC INSTRUMENTS & LIFE SUPPORT DIV		
Address:			Box:
2734 HICORY GROVE RD			4508

City:

DAVENPORT
Country:

US

State:

IA

Zip:

52808-4508

Phone:

319-383-6000

Description Information

Item

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Item Manager:

Item Name: OXYGEN,AVIATOR'S BREATHING

Specification Number: MIL-O-27210

Type/Grade/Class: TYPE II

Unit of Issue: GL

Quantitative Expression:

UI Container Qty: 0

Type of Container: UNKNOWN

Ingredients

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Cas: 7782-44-7

M

RS2060000

M

Code:

RTECS #:

Code:

Name: OXIDIZING GAS

% Text: N/R

Environmental Wt:

Other REC Limits: NOT ESTABLISHED

OSHA PEL:

NOT ESTABLISHED

Code: M OSHA N/P
STEL:

Code:

ACGIH TLV: NOT ESTABLISHED

Code: M ACGIH N/P
STEL:

Code:

EPA Rpt Qty:

DOT
Rpt
Qty:

Ozone Depleting Chemical:

N

Hazards Data

Health

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LD50 LC50 Mixture

NONE SPECIFIED BY MANUFACTURER.

Route Of Entry Inds - Inhalation:N/P

Skin:N/P

Ingestion:N/P

Carcinogenicity Inds - NTP:NO

IARC:NO

OSHA:NO

Health Hazards Acute And Chronic

OXYGEN IS NON TOXIC UNDER MOST CONDITIONS OF USE AND IS NECESSARY TO SUPPORT LIFE. LIQUID OXYGEN OR COLD GAS WILL FREEZE TISSUES AND CAN CAUSE SEVERE CRYOGENIC BURNS. BREATHING OF PURE OXYGEN AT 60% MAY PRODUCE COUGH & CHEST PAIN, CNS MANIFESTATIONS. INFANTS EXPOSED TO 35–40% OXYGEN MAY SUFFER PERMANENT VISUAL DAMAGE.

Explanation Of Carcinogenicity

N/P

Signs And Symptions Of Overexposure

WHEN EXPOSED TO 60% OXYGEN, SYMPTOMS INCLUDE COUGHING AND CHEST PAIN. THESE SYMPTOMS MAY BE SEEN IN SEVERAL DAYS. AT TWO ATMOSPHERES SYMPTOMS OCCUR IN 2–3 HOURS: VAIRETY OF CENTRAL NERVOUS SYSTEM SYMP TOMS: TINGLING FINGERS/TOES, VISUAL/HEARING DISTURBANCES, ABNORMAL SENSATIONS, IMPAIRED COORDINATION, CONFUSION, MUSCLE TWITCHING, AND SEISURES RESEMBLING THOSE OF EPILEPSY. SEVERE HAZARDS WHEN CONFUS TION/IMPAIRED JUDGEMENT LEAD TO OPERATIONAL ERRORS. INFANTS EXPOSED TO OXYGEN LEVELS IN EXCESS OF 35–40% MAY SUFFER PERNAMENT VISUAL IMPAIRMENT OR BLINDNESS.

Medical Cond Aggravated By Exposure

NONE SPECIFIED BY MANUFACTURER.

First Aid

IF CRYOGENIC LIQUID OR COLD BOIL–OFF GAS CONTACTS A WORKER'S SKIN OR EYES, FROZEN TISSUES SHOULD BE FLOODED OR SOAKED WITH TEPID WATER (105–115F; 41–46C). DO NOT USE HOT WATER. BURNS WHICH RESULT IN B LISTERING OR DEEPER TISSUE FREEZING SHOULD BE SEEN PROMPTLY BY A PHYSICIAN.

Spill Release Procedures

PREVENT LIQUID OXYGEN FROM CONTACTING GREASE, OIL AND OTHER COMBUSTIBLES. VENTILATE AREA TO DISPERSE OXYGEN, AVOID SMOKING, EVACUATE ALL PERSONNEL FROM RELEASE AREA. DO NOT ENTER AREAS OF HIGH OXYGEN CONCENTRATION, WHICH CAN SATURATE CLOTHING AND INCREASE ITS FLAMABILITY. AVOID SMOKING AND CONTACT W/SOURCES OF IGNITION AFTER EXPOSURE TO CONCENTRATES OF OXYGEN >NORMAL ATMOSPHERE.

Neutralizing Agent

NOT APPLICABLE.

Waste Disposal Methods

ALLOW LIQUID OXYGEN TO EVAPORATE IN A WELL VENTILATED OUTDOOR AREA. VENT OXYGEN GAS TO OUTSIDE LOCATION. DISPOSAL SITE SHOULD BE REMOTE FROM WORK AREAS, OPEN FLAMES OR SOURCES OF IGNITION AND COMBUSTI BLES. FLUSHING W/H2O INCREASES VAPORIZATION RATE OF LIQUID. RETURN CYLINDERS TO AIR PRODUCTS.

Handling And Storage Precautions

PREVENT CONTACT OF LIQUID OXYGEN WITH EXPOSED SKIN. PREVENT ENTRAPMENT OF LIQUID IN CLOSED SYSTEMS. USE ONLY IN WELL VENTILATED AREAS. CLEANLINESS AND COMPATIBILITY OF MATERIALS IN CONTACT WITH OXYGEN ARE ESSENTIAL ESPECIALLY INTERNAL PARTS OF PIPING SYSTEMS.

Other Precautions

SECURE CYLINDERS WHEN NOT IN USE. AVOID DRAGGING, ROLLING, OR SLIDING CYLINDERS, EVEN FOR SHORT DISTANCE. USE A SUITABLE HAND TRUCK.

===== Fire and

Explosion Hazard Information

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Flash Point Method:	
N/P	
Flash Point:	Flash Point Text: NONE
Autoignition Temp:	Autoignition Temp Text: N/A
Lower Limits: N/R	Upper Limits: N/R

Extinguishing Media

NONE SPECIFIED BY MANUFACTURER.

Fire Fighting Procedures

OXYGEN IS NONFLAMMABLE, BUT SUPPORTS AND VIGOROUSLY ACCELERATES COMBUSTION OF FLAMMABLES. TO FIGHT FIRES, SHUT OFF SOURCES OF OXYGEN AND FIGHT FIRE.

Unusual Fire/Explosion Hazard

OXYGEN SUPPORTS AND VIGOROUSLY ACCELERATES COMBUSTION OF FLAMMABLES. SOME MATERIALS WHICH ARE NONCOMBUSTIBLE IN AIR WILL BURN IN THE PRESENCE OF OXYGEN.

===== Control

Measures

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Respiratory Protection

NONE SPECIFIED BY MANUFACTURER.

Ventilation

PREVENT ACCUMULATION WITH NATURAL OR FORCED AIR. USE VENTILATION AS NECESSARY. VENTS SHOULD BE SITUATED TO AVOID CONCENTRATIONS OF OXYGEN.

Protective Gloves

LEATHER GLOVES FOR HANDLING CYLINDERS.

Eye Protection

CHEMICAL GOGGLES OR SAFETY GLASSES.

Other Protective Equipment

SAFETY SHOES

Work Hygienic Practices

OBSERVE GOOD PERSONAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES.

Supplemental Safety and Health

SHIPMENT OF COMPRESSED GAS CYLLINDER FILLED W/O PERMISSION OF OWNER IS A VIOLATION OF FED LAW. IF OXYGEN LEVELS EXCEDING 25% ARE SUSPECTED, USE OXYGEN MONITORING EQUIPMENT TO TEST FOR OXYGEN ENRICHED ATMOSPHERES.

Physical/Chemical Properties

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HCC:

NRC/State LIC No:

Net Prop WT For Ammo:

Boiling Point: --182.9C, -297.2F

B.P. Text: @1ATM

Melt/Freeze Pt: --218.8C, -361.7F

M.P/F.P Text: @1ATM

Decomp Temp:

Decomp Text: N/A

Vapor Pres: N/R

Vapor Density: 0.08279

Volatile Org Content %:

Spec Gravity: 1.10 1ATM

VOC Pounds/Gallon:

PH: N/R

VOC Grams/Liter:

Viscosity: N/P

Evaporation Rate & Reference: N/R

Solubility in Water: 3.16% BY VOLUME @77F 1ATM

Appearance and Odor: GASIOUS OXYGEN IS COLORLESS/ODORLESS. LIQUID: PALE BLUE/ODORLESS

Percent Volatiles by Volume: N/P

Corrosion Rate: N/P

Reactivity Data

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Stability Indicator:

YES

Stability Condition To Avoid: MATERIALS WHICH BURN IN AIR WILL BURN VIOLENTLY IN ATMOSPHERE RICHER THAN APPROX. 25% OXYGEN. SOME MATERIALS WILL BURN IN PURE OXYGEN WHICH ARE NONFLAMABLE IN AIR.

Materials To Avoid: ALL FLAMMABLES, ESPICALLY PETROLEUM PRODUCTS, ASPHALT, OTHER VOLATILE FLAMMABLES.

Hazardous Decomposition Products: NONE SPECIFIED BY MANUFACTURER.

Hazardous Polymerization Indicator: NO

Conditions To Avoid Polymerization NONE SPECIFIED BY MANUFACTURER.

Toxicological Information

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Toxicological Information:

N/P

Ecological Information

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Ecological:

N/P

MSDS Transport

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Information

Transport Information:

N/P

Regulatory Information

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Sara Title III Information:

N/P

Federal Regulatory Information: VARIOUS GOV AGENCIES (I.E. DEPT OF TRANSPORTATION, FOOD & DRUG AD, ETC) MAY HAVE SPECIFIC REGULATIONS RE: THE TRANSPORTATION, HANDLING, STORAGE, AND USE OF THIS PRODUCT WHICH ARE NOT REFLECTED IN THIS DATA SHEET. THE CUSTOMER SHOULD REVIEW THESE REGULATIONS TO ENSURE S/HE IS IN FULL COMPLIANCE.

State Regulatory Information: N/P

Other Information

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Other Information:

OXYGEN IS NOT TO BE USED AS A SUBSTITUTE FOR COMPRESSED AIR. APPLICATIONS SUCH AS CLEANING, DUSTING, POWERING PNEUMATIC TOOLS,

ETC ARE NOT SAFE DUE TO LUBRICATING OILS AND OTHER MATERIALS PRESENT. USE ONLY WITH EQUIPMENT SPECIFICALLY DESIGNED AND CLEAN FOR OXYGEN SERVICE. CONSULT COMPRESSED GAS ASSOCIATION PAMPHLET G-4.1. LIQUID OXYGEN IS CRYOGENIC LIQUID. MATERIALS OF CONSTRUCTION MUST BE SELECTED FOR COMPATIBILITY WITH EXTREMELY LOW TEMPERATURES. AVOID USE OF CARBON, STEEL, AND OTHER MATERIALS WHICH BECOME BRITTLE AT LOW TEMPS. COMPRESSED GAS CYLLINDERS SHOULD NOT BE REFILLED EXCEPT BY QUALIFIED PRODUCERS OF COMPRESSED GASES.

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