

LIQUID AIR CORP ONE CALIFORNIA PLAZA -- LIQUID NITROGEN -- 6830-00-285-4769

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

Product ID:LIQUID NITROGEN

MSDS Date:10/01/1986

FSC:6830

NIIN:00-285-4769

Status Code:A

MSDS Number: CKVLB

=== Responsible Party ===

Company Name:LIQUID AIR CORP ONE CALIFORNIA PLAZA

Address:2121 N. CALIFORNIA BLVD

City:WALNUT CREEK

State:CA

ZIP:94596

Country:US

Info Phone Num:415-97

7-6500

Emergency Phone Num:800-231-1366

Preparer's Name:CORPORATE SAFETY DEPT.

Chemtrec Ind/Phone:(800)424-9300

CAGE:18260

=== Contractor Identification ===

Company Name:LIQUID AIR CORP ONE CALIFORNIA PLAZA

Address:2121 N. CALIFORNIA BLVD

Box:City:WALNUT CREEK

State:CA

ZIP:94596

Country:US

Phone:415-977-6500

CAGE:18260

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

Ingred Name:LIQUID NITROGEN

CAS:7727-37-9

RTECS #:QW9700000

= Wt:100.

Code:F

=====  
Hazar

ds Identification =====

LD50 LC50 Mixture:NONE PROVIDED BY MFR.

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

Health Hazards Acute and Chronic:NITROGEN IS NONTOXIC BUT THE

LIBERATION OF A LARGE AMOUNT IN A CONFINED AREA COULD DISPLACE THE AMOUNT OF OXYGEN IN AIR NECESSARY TO SUPPORT LIFE. FROSTBITE EFFECTS ARE A CHANGE IN COLOR OF THE SKIN T O GRAY OR WHITE POSSIBLY FOLLOWED BY BLISTERING. CONTACT WITH THE CRYOGENIC LIQUID OR COLD PIPING CONTAINING TH

E LIQUID CAN CAUSE TISSUE FREEZING OR

FROSTBITE ON DERMAL CONTACT OR IF SPLASHED INTO THE EYES.

Explanation of Carcinogenicity:NONE PROVIDED BY MFR.

Effects of Overexposure:EFFECTS OF EXPOSURE TO HIGH CONCENTRATIONS THAT DISPLACES OXYGEN IN AIR NECESSARY FOR LIFE MAY INCLUDE ANY, ALL, OR NONE OF FOLLOWING: LOSS OF BALANCE, DIZZINESS, TIGHTNESS IN FRONTAL AREA OF FOREH EAD, TINGLING OF TONGUE, FINGERTIPS, TOES, WEAKENED SPEECH LEADING TO INABILITY TO UTTER SOUNDS, RAPID

REDUCTION IN ABILITY TO PERFORM MOVEMENTS, REDUCED CONSCIOUSNESS OF SURROUNDINGS, LOSS OF TACTILE SENSATIONS, HEIGHTENED MENTAL ACTIVITY. IT SHOULD BE RECONGNIZED THAT IT IS POSSIBLE THAT NONE OF ABOVE SYMPTOMS MAY OCCUR IN NITROGEN ASPHYXIA SO THAT THERE ARE NO DEFINITE WARNING SYMPTOMS.

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

First Aid:PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO NITROGEN. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH

SELF CONTAINED BREATHING APPARATUS. INHALATION: MOVE CONSCIOUS PERSONS TO FRESH AIR. QUICK REMOVAL FROM CONTAMINATED AREA IS MOST IMPORTANT. MOVE UNCONSCIOUS PERSONS TO FRESH AIR AND GIVEN MOUTH-TO-MOUTH RESUSCITATION AND OXYGEN. GET MEDICAL ATTENTION IMMEDIATELY. FOR DERMAL CO NTACT OR FROSTBITE, FLUSH AFFECTED AREAS WITH LUKEWARM WATER. DO NOT USE HOT WATER. GET MEDICAL ATTENTION IF CRYOGENIC "BURN" HAS RESULTED IN BLISTERING OR DEEP TISSUE FRE

EZING.

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

Extinguishing Media:NONFLAMMABLE, INERT.

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

Spill Release Procedures:LIQUID NITROGEN IS DELIVERED TO A CUSTOMER INTO STATIONARY VACUUM-JACKETED VESSELS AT THE CUSTOMER'S LOCATION OR IN PORTABLE VACUUM-KACKETED "LIQUID" CYLINDERS. STATIONARY CUSTOMER-SITE VESSELS SHOULD BE OPERATED IN ACCORDANCE WITH THE MANUFACTURER'S & LIQUID AIR CORPO

RATION'S INSTRUCTIONS. DO NOT  
ATTEMPT TO REPAIR, ADJUST, OR IN ANY WAY MODIFY THE OPERATION OF  
THESE VESSELS. IF THERE IS A MALFUNC

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

Handling and Storage Precautions:LIQUID NITROGEN CYLINDERS SHOULD BE  
USED ONLY IN WELL-VENTILATED AREAS, IN ACCORDANCE WITH  
MANUFACTURER'S AND LIQUID AIR CORP INSTRUCTIONS. CYLINDERS MUST  
ALWAYS BE KEPT IN AN UPRIGHT POSITION. SPECIA LIZED HAND TRUCKS ARE  
NEEDED FOR THEIR M

OVEMENT. "1ST IN 1ST OUT" INVENTORY SYSTEM SHOULD  
BE USED.

Other Precautions:LIQUIFIED GAS CYLINDERS SHOULD NOT BE REFILLED EXCEPT  
BY QUALIFIED PRODUCERS OF THESE PRODUCTS. SHIPMENT OF A COMPRESSED  
GAS CONTAINER WHICH HAS NOT BEEN FILLED BY THE OWNER OR WITH HIS  
(WRITTEN) CONS ENT IS A VIOLATION OF FEDERAL LAW (49CFR). SEE CGA  
SAFETY BULLETIN SB-2 AND CGA PAMPHLETS P-9,P-12, P-14.

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

Respiratory Protection:PO  
SITIVE PRESSURE AIR LINE WITH MASK OR SELF  
CONTAINED BREATHING APPARATUS SHOULD BE AVAILABLE FOR EMERGENCY  
USE.

Ventilation:PROVIDE LOCAL EXHAUST VENTILATION TO PREVENT ACCUMULATION  
OF HIGH CONCENTRATIONS SO AS TO REDUCE THE OXYGEN LEVEL IN THE AIR  
TO LESS THAN 18 MOLAR PERCENT.

Protective Gloves:WEAR LOOSE FITTING, INSULATED GLOVES.

Eye Protection:WEAR SAFETY GOGGLES OR GLASSES PLUS FACE SHIELD.

Other Protective Equipment:SAFETY SHOES.

Supplemental Safety and Health

DO NOT STORE

CYLINDERS IN SUB-SURFACE OR CLOSED (POORLY VENTILATED)  
AREAS. NITROGEN GAS CAN CAUSE SUFFOCATION WITHOUT WARNING.

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

HCC:G3

Boiling Pt:=-195.6C, -320.4F

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

Vapor Density:.073LB/FT3

Spec Gravity:DENSITY= 50.48 LB/FT3

pH:NONE PROVIDED

Viscosity:NONE PROVIDED BY MFR.

Evaporation Rate & Reference:NONE PROVIDED BY MFR.

Solubility in Water:@68F BUNSEN COEF.=0.01557

Appearance and Odor:CLEAR, COLORL

ESS, ODORLESS LIQUID.

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

Stability Indicator/Materials to Avoid: YES

NONE.

Stability Condition to Avoid: NONE PROVIDED BY MFR.

Hazardous Decomposition Products: NONE.

Conditions to Avoid Polymerization: WILL NOT OCCUR.

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

Toxicological Information: NITROGEN IS DEFINED AS A SIMPLE ASPHYXIANT.

OXYGEN LEVELS SHOULD BE MAINTAINED AT GREATER THAN 18 MOLAR PERCENT AT NORMAL ATMOSPHERIC PRESSURE WHICH IS EQUIVALENT TO A PARTIAL PRESSURE OF 135 MM HG (A CGIH, 1984-85).

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

Transport Information: DOT SHIPPING NAME: NITROGEN, REFRIGERATED LIQUID (CRYOGENIC LIQUID), UN 1977, DOT HAZARD CLASS: NONFLAMMABLE GAS, SHIPPING LABEL: NONFLAMMABLE GAS.

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

State Regulatory Information: LIQUID NITROGEN IS DELIVERED TO A CUSTOMER

INTO STATIONARY VACUUM-JACKETED VESSELS AT CUSTOMER'S LOCATION OR IN PORTABLE VACUUM-JACKETED "LIQUID" CYLINDERS. STATIONARY CUSTOMER-SITE VESSELS SHOULD BE OPERATED IN ACCORDANCE WITH THE MANUFACTURER'S AND LIQUID AIR CORPORATION'S INSTRUCTIONS. DO NOT ATTEMPT TO REPAIR, ADJUST, OR IN ANY WAY MODIFY THE OPERATION OF THESE VESSELS. IF THERE IS A MALFUNCTION OR OTHER TYPE OF OPERATIONAL PROBLEM WITH THE VESSEL, CONTACT THE CLOSEST LIQUID AIR CORPORATION LOCATION IMMEDIATELY.

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

Disclaimer (provided with this information by the compiling agencies):

This information is formulated for use by elements of the Department of Defense. The United States of America in no manner whatsoever, expressly or implied, warrants this information to be accurate and disclaims all liability for its use. Any person utilizing this document should seek competent professional advice to verify and assume re

sponsibility for the suitability of this information to their particular situation.