

VALERO ENERGY CORPORATION -- HEXANE -- 6810-00-949-0257

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

Product ID:HEXANE
MSDS Date:04/27/2000
FSC:6810
NIIN:00-949-0257
Status Code:A
MSDS Number: CKTTR
=== Responsible Party ===
Company Name:VALERO ENERGY CORPORATION
Address:530 MCCULLOUGH AVE
City:SAN ANTONIO
State:TX
ZIP:78205
Country:US
Info Phone Num:512-246-2000
Emergency Phone Num:713-923-6641
Resp. Part
y Other MSDS Num.:404
Chemtrec Ind/Phone:(800)424-9300
CAGE:0CC42

=== Contractor Identification ===
Company Name:PHIBRO ENERGY USA,INC.
Address:500 DALLAS AVE.,SUITE 3200
Box:City:HOUSTON
State:TX
ZIP:77002
Country:US
Phone:713-646-5127
Contract Num:SP0450-99-M-C592
CAGE:TO125
Company Name:VALERO ENERGY CORPORATION
Address:530 MCCULLOUGH AVE
Box:City:SAN ANTONIO
State:TX
ZIP:78205
Country:US
Phone:512-246-2000
CAGE:0CC42
Company Name:WAITE R M CO
Address:2100 EMBARCADERO SUITE 203
Box:City:OAKLA

ND
State:CA
ZIP:94606
Country:US
Phone:510-535-1266
CAGE:0V485

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Composition/Information on Ingredients
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Ingred Name:N-HEXANE
CAS:110-54-3
RTECS #:MN9275000
= Wt:95.
OSHA PEL:1800 MG/M3;500 PPM
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:HEXANES (ALL ISOMERS) (MIXTURE)
Minimum % Wt:1.
Maximum % Wt:4.

Ingred Name:METHYLCYCLOPENTANE
CAS:96-37-7
RTECS #:GY4640000
Minimum % Wt:1.
Maximum % Wt:2.

Ingred Name:N-PENTANE
CAS:109-66-0
RTECS #:RZ9450000
Fraction by Wt: <
1-2%
OSHA PEL:2950 MG/M3;1000 PPM
ACGIH TLV:1770 MG/M3;600 PPM
ACGIH STEL:2210 MG/M3;750 PPM

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Hazards Identification
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LD50 LC50 Mixture:NO DATA PROVIDED FOR MIXTURE AS A WHOLE
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:TARGET ORGANS: RESPIRATORY SYSTEM,
SKIN. EYE: MAY CAUSE SEVERE IRRITATION. SKIN: PROLONGED OR REPEATED
CONTACT MAY CAUSE MODERA

TE IRRITATION, DERMATITIS, POSSIBLE

SECONDARY INFECTION & PERIPHERAL NERVE DAMAGE. HIGH PRESSURE SKIN INJECTIONS ARE SERIOUS MEDICAL EMERGENCIES. INHALATION: NASAL & RESPIRATORY TRACT IRRITATION, PERIPHERAL NERVE DAMAGE, & CENTRAL NERVOUS SYSTEM EFFECTS, RESPIRATORY ARREST & DEATH. INGESTION: MAY BE HARMFUL OR FATAL IF SWALLOWED. DO NOT INDUCE VOMITING! MAY CAUSE GI DISTURBANCES, CNS DEPRESSION. ASPIRATION INTO LUNGS CAN CAUSE SEVERE CHEMICAL PNEUMONITIS OR PULMONA

RY EDEMA/HEMORRHAGE, WHICH CAN BE FATAL.

Explanation of Carcinogenicity:PRODUCT LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN BY: NTP-NO; IARC-NO; OSHA-NO; OTHER-NO.

Effects of Overexposure:EYE: MAY CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION & CONJUNCTIVITIS. SKIN: PROLONGED OR REPEATED CONTACT MAY CAUSE MODERATE IRRITATION, DEFATTING (CRACKING), REDNESS, ITCHING, INFLAMMATION, DERMATITIS, POSSIBLE SECONDARY INFECTION & PERIPHERAL NERVE DAMAGE. HIGH PRES

SURE SKIN

INJECTIONS, WITHIN A FEW HOURS, TISSUES WILL BECOME SWOLLEN, DISCOLORED & EXTREMELY PAINFUL. INHALATION: NASAL & RESPIRATORY TRACT IRRITATION, CNS EFFECTS INCLUDING EXCITATION, EUPHORIA, HEADACHE, DIZZINESS, LOSS OF COORDINATION. INGESTION: CNS EFFECTS SIMILAR TO INHALATION, DIARRHEA, NAUSEA, VOMITING.

Medical Cond Aggravated by Exposure:PREEXISTING EYE, SKIN, HEART, CENTRAL NERVOUS SYSTEM AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

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

First Aid:EYE: FLUSH IMMEDIATELY WITH LOTS OF WATER FOR AT LEAST 15 MINUTES. LIDS SHOULD BE HELD AWAY FROM THE EYE. SEEK MEDICAL ADVICE IF PAIN OR REDNESS CONTINUES. SKIN: WASH THOROUGHLY WITH SOAP & WATER. REMOVE CONTAMINATED CLOTHING PROMPTLY. IF IRRITATION PERSIST OR SYMPTOMS DESCRIBED IN THE MSDS DEVELOP, SEEK MEDICAL ATTENTION. HIGH PRESSURE SKIN INJECTIONS ARE SERIOUS MEDICAL EMERGENCIES.

GET IMMEDIATE MEDICAL ATTENTION. SLIGHT INHALATION:

REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, ENSURE CLEAR AIRWAY & GIVE OXYGEN. INGESTION: DO NOT INDUCE VOMITING! GIVE VEGETABLE OIL OR CHARCOAL SLURRY. SEEK IMMEDIATE MEDICAL ATTENTION.

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

Flash Point:=-21.5C, -7.F

FLAMMABLE

Autoignition Temp:=-225.C, 437.F

Lower Limits:1.1%

Upper Limits:7.5%

Extinguishing Media:FLAMMABLE LIQUID. USE DRY CHEMICAL, FOAM OR CARB

ON

DIOXIDE TO EXTINGUISH THE FIRE. CONSULT FOAM MANUFACTURER FOR APPROPRIATE MEDIA, APPLICATION RATES AND WATER/FOAM RATIO.

Fire Fighting Procedures:WATER CAN BE USED TO COOL FIRE-EXPOSED CONTAINERS, STRUCTURES & TO PROTECT PERSONNEL. IF A LEAK OR SPILL HAS NOT IGNITED, VENTILATE AREA & USE WATERSPRAY TO DISPERSE GAS OR VAPOR & TO PROTECT PERSONNEL ATTEMPTING TO STOP A LEAK. USE WATER TO FLUSH SPILL AWAY FROM SOURCES OF IGNITION. DO NOT FLUSH DOWN PUBLIC SEWERS.

Unu

sual Fire/Explosion Hazard:DANGEROUS WHEN EXPOSED TO HEAT OR FLAME. VAPORS FORM FLAMMABLE OR EXPLOSIVE MIXTURES WITH AIR AT ROOM TEMPERATURE. VAPOR OR GAS MAY SPREAD TO DISTANT IGNITION SOURCES (PILOT LIGHTS, WELDING EQUIPMENT, ELECTRICAL EQUIPMENT, ETC.) & FLASH BACK. VAPORS MAY ACCUMULATE IN LOW AREAS. VAPORS MAY CONCENTRATE IN CONFINED AREAS.

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

Spill Release Procedures:IF FACILITY OR OPERATION HAS AN "OIL OR

HAZARDOUS SUBSTANCE CONTINGENCY PLAN", ACTIVATE ITS PROCEDURES. STAY UPWIND & AWAY FROM SPILL. WEAR APPROPRIATE PROTECTIVE EQUIPMENT INCLUDING RESPIRATORY PROTECTION AS CONDITIONS WARRANT. DO NOT ENTER OR STAY IN AREA UNLESS MONITORING INDICATES THAT IT IS SAFE TO DO SO. ISOLATE HAZARD AREA & RESTRICT ENTRY TO EMERGENCY CREW. EXTREMELY FLAMMABLE. (SEE OTHER)

Neutralizing Agent:NO DATA PROVIDED BY RESPONSIBLE PARTY.

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

Handling and Storage Precautions:STORE IN TIGHTLY CLOSED CONTAINERS IN COOL, DRY, ISOLATED & WELL VENTILATED AREA AWAY FROM HEAT, SOURCES OF IGNITION & INCOMPATIBLE MATERIALS. USE NON-SPARKING TOOLS & EXPLOSION PROOF EQUIPMENT. GROUND LINES, CONTAINERS, & OTHER EQUIPMENT USED DURING PRODUCT TRANSFER.

Other Precautions:TANKS, VESSELS OR OTHER CONFINED SPACES WHICH HAVE CONTAINED PRODUCT SHOULD BE FREED OF VAPORS BEFORE ENTERING. THE CONTAINER SHOULD BE C

HECKED TO ENSURE A SAFE ATMOSPHERE BEFORE ENTRY. EMPTY CONTAINERS MAY CONTAIN TOXIC, FLAMMABLE/COMBUSTIBLE OR EXPLOSIVE RESIDUES OR VAPORS. DO NOT CUT, GRIND, DRILL, WELD OR REUSE

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

Respiratory Protection: IF WORKPLACE EXPOSURE LIMIT FOR PRODUCT OR COMPONENTS ARE EXCEEDED, NIOSH EQUIPMENT SHOULD BE WORN. PROPER RESPIRATOR SELECTION SHOULD BE DETERMINED BY ADEQUATELY TRAINED PERSONNEL, BASED ON THE CONTAMINANTS, THE DEGREE OF POTENTIAL EXPOSURE AND PUBLISHED RESPIRATORY PROTECTION FACTORS. THIS EQUIPMENT SHOULD BE AVAILABLE FOR NONROUTINE AND EMERGENCY USE.

Ventilation: AVOID BREATHING MISTS & VAPOR. USE IN WELL-VENTILATED AREA. IN CONFINED SPACE, MECHANICAL VENTILATION MAY BE NECESSARY TO REDUCE VAPOR CONCENTRATIONS

Protective Gloves: SKIN CONTACT CAN BE MINIMIZED BY WEARING PROTECTIVE GLOVES SUCH AS NEOPRENE,

Eye Protection: EYE CONTACT CAN BE AVOIDED BY WEARING SAFETY GLASSES OR CHEMICAL SPLASH GOGGLES

Other Protective Equipment: WHERE NECESSARY, IMPERVIOUS CLOTHING AND BOOTS. A SOURCE OF CLEAN WATER SHOULD BE AVAILABLE IN THE WORK AREA FOR FLUSHING EYES AND SKIN.

Work Hygienic Practices: KEEP AWAY FROM EYES. KEEP AWAY FROM SKIN. LEATHER GOODS CONTAMINATED WITH THIS PRODUCT SHOULD BE DISCARDED.

Supplemental Safety and Health

NOTE TO PHYSICIAN: IN CASE OF INGESTION, GASTRIC LAVAGE WITH ACTIVATED CHARCOAL CAN BE USED PROMPTLY TO PREVENT ABSORPTION.

CONSIDERATION

SHOULD BE GIVEN TO THE USE OF AN INTRATRACHEAL TUBE, TO PREVENT ASPIRATION. IRREGULAR HEART BEAT MAY OCCUR, USE OF ADRENALIN IS NOT ADVISABLE.

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

HCC:F2

Boiling Pt: 68.3C, 155.F

Vapor Pres: 52 MM HG I@100F

Vapor Density: 3 (AIR=1)

Spec Gravity: 0.66@60F

Evaporation Rate & Reference: NOT AVAILABLE

Solubility in Water: NEGLIGIBLE(