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Safety Data Sheet

Petra LUBRICATING GREASE

1.- IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 PRODUCT IDENTIFIER

PRODUCT FORM: AEROSOL MIXTURE

TRADE NAME: PETRA LUBRICATING GREASE 16 OZ

PRODUCT CODE: 9003

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

PRODUCT DESIGNED TO LUBRICATE METAL PIECES WITHSTANDING HIGH TEMPERATURES.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

Petra Oil Company, Inc.
6100 West by Northwest Blvd.
Ste 190
Houston, Texas 77040
PH. NU. 888-738-7261

1.4 EMERGENCY PHONE NUMBER: CHEMTREC: (800) 424-9300

2.- HAZARDS IDENTIFICATION

2.1 CLASSIFICATION (GHS-US)

FLAMMABLE AEROSOL (CATEGORY 2)

ASPIRATION HAZARD (CATEGORY 1)

DERMAL IRRITATION (CATEGORY 2)

SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE (CATEGORY 3)

REPRODUCTIVE TOXICITY (CATEGORY 2)

SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE (CATEGORY 2)

HAZARDOUS TO THE AQUATIC ENVIRONMENT, CHRONIC HAZARD (CATEGORY 2)

2.2 LABEL ELEMENTS

PICTOGRAMS



SIGNAL WORD: **DANGER**



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HAZARD STATEMENTS

H222: EXTREMELY FLAMMABLE AEROSOL
H229: PRESSURIZED CONTAINER: MAY BURST IF HEATED
H304: MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS
H315: CAUSES SKIN IRRITATION
H336: MAY CAUSE DROWSINESS OR DIZZINESS
H361 SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD
H373: MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE
H411: TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

PRECAUTIONARY STATEMENTS

PREVENTION

P210: KEEP AWAY FROM HEAT, HOT SURFACES, SPARKS, OPEN FLAMES AND OTHER IGNITION SOURCES. NO SMOKING.
P211: DO NOT SPRAY ON AN OPEN FLAME OR OTHER IGNITION SOURCE.
P251: DO NOT PIERCE OR BURN, EVEN AFTER USE.
P264: WASH HANDS THOROUGHLY AFTER HANDLING
P280: WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE PROTECTION/FACE PROTECTION
P201: OBTAIN SPECIAL INSTRUCTIONS BEFORE USE
P202: DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD
P261: AVOID BREATHING DUST/FUME/ GAS/MIST/VAPOURS/SPRAY
P271: USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA
P102: KEEP OUT OF REACH OF CHILDREN
P103: READ LABEL BEFORE USE
P260: DO NOT BREATHE VAPOURS/SPRAY
P273: AVOID RELEASE TO THE ENVIRONMENT

RESPONSE

P301+310: IF SWALLOWED: IMMEDIATELY CALL A DOCTOR
P321 SPECIFIC TREATMENT: SEE SECTION 4.3 ON THIS SDS
P302+352: IF ON SKIN: WASH WITH PLENTY OF WATER
P332+313: IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ATTENTION
P362+364: TAKE OFF CONTAMINATED CLOTHING AND WASH IT BEFORE REUSE
P308+P313: IF EXPOSED: CALL A DOCTOR
P304+340: IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING
P314: GET MEDICAL ATTENTION IF YOU FEEL UNWELL.
P331: DO NOT INDUCE VOMITING
P391: COLLECT SPILLAGE

STORAGE

P410+P412 PROTECT FROM SUNLIGHT. DO NOT EXPOSE TO TEMPERATURES EXCEEDING 50 °C/122 °F
P405 STORE LOCKED UP
P403+P233 STORE IN A WELL VENTILATED PLACE. KEEP CONTAINER TIGHTLY CLOSED

DISPOSAL

P501 DISPOSE CONTENTS BY INCINERATION



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2.3 OTHER HAZARDS

CHRONIC HEALTH EFFECTS

REPEATED OR PROLONGED SKIN CONTACT MAY PRODUCE IRRITATION AND DERMATITIS. OVEREXPOSURE TO THIS MATERIAL OR ITS COMPONENTS MAY CAUSE DAMAGE TO LIVER, KIDNEY AND NERVOUSE SYSTEM.

OVER EXPOSURE TO SOLVENTS HAS BEEN ASSOCIATED TO PERMANENT DAMAGE TO BRAIN AND NERVOUS SYSTEM ACCORDING TO REPORTS.

DELIBERATED INGESTION OR INHALATION OF THIS PRODUCT CAN BE DANGEROUS OR FATAL.

PERSONS WITH PRE-EXISTING SKIN DISORDERS OR IMPAIRED PULMONARY, KIDNEY OR LIVER FUNCTION MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS PRODUCT. USE OF ALCOHOLIC BEVERAGES ENHANCES TOXIC EFFECTS.

2.4 UNKNOWN ACUTE TOXICITY

NO DATA AVAILABLE

3.- COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 SUBSTANCES

NOT APPLICABLE

3.2 MIXTURES

NAME	CAS NUMBER	%	CLASSIFICATION
HEXANE	110-54-3	40 – 70%	ASP TOX 1 H304 SKIN IRR 2 H315 STOT SE 3 H336 REPR 2 H361 STOT RE 2 H373 AQ CHR 2 H411
MINERAL OIL	8042-47-5	15 – 35%	ASP TOX 1 H304
ADDITIVES	MIXTURE	5 – 15 %	NOT CLASSIFIED
PROPANE-BUTANE	68476-86-8	5 – 45 %	

4.- FRIST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

EYE CONTACT: IMMEDIATELY WASH EYES WITH PLENTY WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

SKIN CONTACT: IMMEDIATELY WASH SKIN WITH PLENTY OF NEUTRAL SOAP AND WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. WASH CLOTHING SEPARATELY BEFORE REUSE OR DISCARD. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.



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INHALATION: REMOVE PERSON TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

INGESTION: DO NOT INDUCE VOMITING BECAUSE OF DANGER OF ASPIRATING LIQUID INTO LUNGS, CAUSING SERIOUS DAMAGE AND CHEMICAL PNEUMONITIS. IF SPONTANEOUS VOMITING OCCURS, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION AND MONITOR FOR BREATHING DIFFICULTY. GIVE AT LEAST 3- 4 GLASSES OF WATER. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSION PERSON.

KEEP AFFECTED PERSON WARM AND AT REST. GET IMMEDIATE MEDICAL ATTENTION

NEVER GIVE ANYTHING IN THE MOUTH TO AN UNCONSCIOUS PERSON.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

SKIN: MAY CAUSE MILD IRRITATION, REDNESS, PAIN, DRYING AND CRACKING OF THE SKIN. ABSORPTION THROUGH SKIN MAY CAUSE SYSTEMIC EFFECTS.

EYE CONTACT: VAPORS MAY IRRITATE THE EYES. SPLASHES MAY PRODUCE SEVERE IRRITATION WITH STINGING, TEARING, REDNESS AND PAIN. PROLONGED OR REPEATED EXPOSURE COULD CAUSE IRRITATION AND CONJUNCTIVITIS.

INHALATION: INHALATION OF VAPORS IRRITATES RESPIRATORY TRACT. TYPICAL SYMPTOMS WHEN PERMISSIBLE LIMITS ARE EXCEEDED ARE NOSE, THROAT AND LUNG IRRITATION, HEADACHE, DIZZINESS, MUSCLE INCOORDINATION, LOSS OF APPETITE AND NAUSEA. CAN HAVE NARCOTIC EFFECTS. EXPOSURE TO HIGHER CONCENTRATIONS CAN CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION, NARCOSIS, UNCONSCIOUSNESS, MUSCLE WEAKNESS, NUMBNESS OF EXTREMITIES AND EVEN DEATH DEPENDING ON THE CONCENTRATION AND DURATION OF EXPOSURE.

INGESTION: MAY PRODUCE ABDOMINAL PAIN, NAUSEA, VOMITING, MOUTH AND THROAT IRRITATION. ASPIRATION INTO LUNGS CAN PRODUCE SEVERE LUNG DAMAGE, CHEMICAL PNEUMONITIS AND IS A MEDICAL EMERGENCY.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

A) IN GENERAL, GASTRIC EMPTYING IS NOT INDICATED EXCEPT IN VERY SELECT CASES WHERE A HISTORY OF A RECENT LARGE INGESTION IS OBTAINED.

B) ACTIVATED CHARCOAL: ADMINISTER CHARCOAL AS A SLURRY (240 ML WATER/30 G CHARCOAL). USUAL DOSE: 25 TO 100 G IN ADULTS/ADOLESCENTS, 25 TO 50 G IN CHILDREN (1 TO 12 YEARS), AND 1 G/KG IN INFANTS LESS THAN 1 YEAR OLD.

C) IN SYMPTOMATIC PATIENTS (COUGHING, CHOKING, TACHYPNEA, ETC), MONITOR PULSE OXIMETRY AND BLOOD GASES TO ASSURE ADEQUATE VENTILATION AND OBTAIN A BASELINE CHEST X-RAY. DETERMINE VITAL SIGNS REGULARLY. ADMIT THE PATIENT FOR OBSERVATION.

D) ACUTE LUNG INJURY: MAINTAIN VENTILATION AND OXYGENATION AND EVALUATE WITH FREQUENT ARTERIAL BLOOD GAS OR PULSE OXIMETRY MONITORING. EARLY USE OF PEEP AND MECHANICAL VENTILATION MAY BE NEEDED.



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5.- FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA: ALCOHOL FOAM, CO₂, DRY CHEMICAL FOAM, WATER FOG.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

UNUSUAL FIRE AND EXPLOSION HAZARDS: AVOID BREATHING DUSTS AND FUMES FROM BURNING MATERIAL. VAPOR MAY FORM EXPLOSIVE MIXTURE WITH AIR. VAPOR CAN TRAVEL TO A SOURCE OF IGNITION AND FLASH BACK. "EMPTY" CONTAINERS RETAIN PRODUCT RESIDUE (LIQUID AND/OR VAPOR) AND CAN BE DANGEROUS. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. EMPTY DRUMS SHOULD BE COMPLETELY DRAINED, PROPERLY BUNGED AND PROMPTLY RETURNED TO A DRUM CONTAINER, OR PROPERLY DISPOSED OF.

HAZARD COMBUSTION PRODUCTS: EMITS TOXIC FUMES UNDER FIRE CONDITIONS. MAY PRODUCE CO_x, NO_x AND SO_x.

AUTO IGNITION TEMPERATURE: NOT DETERMINED.

EXPLOSION INFORMATION: KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT.

5.2 ADVICE FOR FIREFIGHTERS

PERSONAL PROTECTION: FIREFIGHTERS MUST WEAR NIOSH APPROVED POSITIVE PRESSURE BREATHING APPARATUS (SCBA) WITH FULL FACE MASK AND FULL PROTECTIVE EQUIPMENT.

SPECIAL FIREFIGHTING PROCEDURES: EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE. IF LEAK OR SPILL HAS NOT IGNITED, VENTILATE AREA AND USE WATER SPRAY TO DISPERSE GAS OR VAPOR AND TO PROTECT PERSONNEL ATTEMPTING TO STOP A LEAK. USE WATER SPRAY TO COOL ADJACENT STRUCTURES AND TO PROTECT PERSONNEL. SHUT OFF SOURCES OF FLOW IF POSSIBLE. STAY AWAY FROM STORAGE TANK ENDS. WITHDRAW IMMEDIATELY IN CASE OF RISING SOUND FROM VENTING SAFETY DEVICE OR ANY DISCOLORATION OF STORAGE TANK DUE TO FIRE. WATER RUNOFF CAN CAUSE ENVIRONMENTAL DAMAGE. DIKE AND COLLECT WATER USED TO FIGHT FIRE. WATER SPRAY MAY BE USED FOR COOLING CONTAINERS TO PREVENT POSSIBLE PRESSURE BUILD-UP AND AUTO-IGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT.

SPECIAL PROCEDURES: COOL CONTAINERS EXPOSED TO FIRE TO PREVENT EXPLOSIONS. RETAIN EXTINGUISHING WATER TO AVOID WATER POLLUTION.

6.- ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

6.1.1 FOR NON-EMERGENCY PERSONNEL

EVACUATE UNNECESSARY PERSONNEL

6.1.2 FOR EMERGENCY RESPONDERS

THE FOLLOWING STEPS SHOULD BE FOLLOWED IN CASE MATERIAL IS RELEASED OR SPILLED: PERSON NOT WEARING PROTECTIVE EQUIPMENT AND CLOTHING SHOULD BE RESTRICTED FROM



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CONTAMINATED AREAS UNTIL HAS BEEN COMPLETED.

1. DO NOT TOUCH THE SPILLED MATERIAL; STOP THE LEAK IF IT IS POSSIBLE TO DO SO WITHOUT RISK.
2. NOTIFY SAFETY PERSONNEL.
3. REMOVE ALL SOURCES OF HEAT AND IGNITION.
4. VENTILATE POTENTIALLY EXPLOSIVE ATMOSPHERES USING MAXIMALLY EXPLOSION-PROOF EQUIPMENT.
5. USE NONSPARKING TOOLS FOR CLEANUP.
6. WATER SPRAY MAY BE USED TO REDUCE VAPORS, BUT THE SPRAY MAY NOT PREVENT IGNITION IN CLOSED SPACES.

6.2 ENVIRONMENTAL PRECAUTIONS

PREVENT ENTRY TO SEWERS AND PUBLIC WATERS. NOTIFY AUTHORITIES IF LIQUID ENTERS SEWERS OR PUBLIC WATERS.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

FOR SMALL LIQUID SPILLS, TAKE UP WITH SAND OR OTHER NONCOMBUSTIBLE ABSORBENT MATERIAL AND PLACE INTO CLOSED CONTAINERS FOR LATER DISPOSAL.

FOR LARGE LIQUID SPILL, BUILD DIKES FAR AHEAD OF THE SPILL TO CONTAIN THE MATERIAL FOR LATER RECLAMATION OR DISPOSAL

6.4 REFERENCE TO OTHER SECTIONS

SEE HEADING 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.- HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

AVOID BREATHING VAPORS. AVOID CONTACT WITH EYES, SKIN OR CLOTHES. KEEP CONTAINERS CLOSED. USE ONLY WITH ADEQUATE VENTILATION. WASH HANDS AFTER USE. KEEP AWAY FROM HEAT, SPARKS OR FLAMES.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

VAPORS ARE HEAVIER THAN AIR AND WILL COLLECT IN LOW AREAS. KEEP CONTAINER CLOSED WHEN NOT IN USE. STORE IN TIGHTLY CLOSED AND PROPERLY LABELED CONTAINERS IN COOL, DRY ISOLATED, WELL-VENTILATED AREA AWAY FROM HEAT, SOURCES OF IGNITION AND INCOMPATIBLES.

THIS MATERIAL OR ITS VAPORS WHEN IN CONTACT WITH FLAMES, SPARKS, HEAT OR ELECTRIC ARCS CAN DECOMPOSE TO FORM CO_x , SO_x , HYDROGEN CHLORIDE GAS AND TRACES OF PHOSGENE. AVOID CONTAMINATION OF WATER SUPPLIES. HANDLING, STORAGE AND USE PROCEDURES MUST BE CAREFULLY MONITORED TO AVOID SPILL OR LEAKS.

EMPTY CONTAINERS MAY CONTAIN PRODUCT RESIDUE. DO NOT REUSE WITHOUT ADEQUATE PRECAUTIONS. DO NOT USE CUTTING OR WELDING TORCHES ON DRUMS THAT CONTAINED THIS PRODUCT UNLESS PROPERLY PURGE AND CLEANED. GROUND AND BOND CONTAINERS WHEN TRANSFERING MATERIAL. USE SPARK-PROOF TOOLS AND EXPLOSION PROOF EQUIPMENT TO REDUCE THE POSSIBILITY OF STATIC SPARK-INITIATED FIRE OR EXPLOSION.

DO NOT EAT, DRINK OR SMOKE IN AREAS OF USE OR STORE.

7.3 SPECIFIC END USES

FOLLOW LABEL DIRECTIONS



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8.- EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

EXPOSURE LIMITS

INGREDIENT	AEGL 1	AEGL 2	AEGL 3	TWA	STEL	NIOSH REL	OSHA PEL	IDLH
	60 MIN	60 MIN	60 MIN	8 H	15 MIN	TWA	TWA	
	PPM	PPM	PPM	PPM	PPM	10 H (PPM)	8 H (PPM)	PPM
HEXANE	4800	3300	3300	50, SKIN	N/D	50	500	1100
MINERAL OIL	N/D	N/D	N/D	N/D	N/D	5 (mg/m ³)	5 (mg/m ³)	2500
ADDITIVES	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
PROPANE-BUTANE	5500	N/D	N/D	1000	N/D	1000	1000	2000

8.2 EXPOSURE CONTROLS

VENTILATION: USE LOCAL EXHAUST OR DILUTION VENTILATION AS APPROPRIATE TO CONTROL EXPOSURES TO BELOW PERMISSIBLE LIMITS DURING THE USE OF THIS PRODUCT.

SKIN PROTECTION: WHERE THE CONTACT IS LIKELY, WEAR CHEMICAL RESISTANT GLOVES, A CHEMICAL SUIT AND RUBBER BOOTS. AVOID SKIN CONTACT WITH THIS MATERIAL.

EYE PROTECTION: DO NOT WEAR CONTACT LENSES. WEAR SAFETY GLASSES WITH SIDE SHIELDS OR

GOGGLES. HAVE EYE WASHING FACILITIES READILY AVAILBLE WHERE EYE CONTACT CAN OCCUR.

RESPIRATORY PROTECTION: A NIOSH APPROVED AIR PURIFYING RESPIRATOR WITH AN APPROPRIATE AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE APPROPRIATE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBONE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATOR IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOW, OR ANY CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

9.- PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	LIQUID
ODOR	STRONG SOLVENT
OLFATIVE THRESHOLD	N/D
PT-CO COLOR	PALE YELLOW
PH	N/D
MELTING POINT	N/D
EVAPORATION RATE	N/D
SPECIFIC GRAVITY	0.740 g/ml



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BOILING POINT	N/D
VISCOSITY @25°C	< 15 cps
FLASH POINT (CCC)	< 10 °C
FREEZING POINT	N/D
VAPOR PRESSURE (mmHg)	N/D
VAOR DENSITY	N/D
PARTITION COEFICCIENT	N/D
DESCOMPOSITION TEMPERATURE	N/D
WATER SOLUBILITY	NOT SOLUBLE
VOC's	80% min.

9.2 OTHER INFORMATION

NO ADDITIONAL INFORMATION AVAILABLE

10.- STABILITY AND REACTIVITY

10.1 REACTIVITY: NO ADDITIONAL INFORMATION AVAILABLE

10.2 CHEMICAL STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

10.3 HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

10.4 CONDITIONS TO AVOID: HEAT, SPARKS, OPEN FLAMES, HOT GLOWING SURFACES OR ELECTRICS ARCS.

10.5 INCOMPATIBILITY: AVOID CONTACT WITH STRONG OXIDIZING AGENTS.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: COMBUSTION MAY FORM: CARBON DIOXIDE, CARBON MONOXIDE, HYDROGEN CHLORIDE GAS, SO₂, POSSIBLE TRACES OF PHOSGENE.

11.- TOXICOLOGICAL INFORMATION

HEXANE

ORAL LD50 RAT (14-DAY-OLD) 24.0 MGL/KG BW

ORAL LD50 RAT ADULT 45 ML/KG

INHALATION LC50 RAT 48000 PPM/< 4 HR

ORAL LD50 RAT (YOUNG ADULT) 49.0 MG/KG BW

ORAL LD50 RAT (OLDER ADULT) 43.5 MG/KG

INHALATION LC50 MOUSE 48000 PPM/4 HR

ORAL LD50 RAT 28,710 MG/KG

MINERAL OIL

INFORMATION NOT AVAILABLE

ADDITIVES

INFORMATION NOT AVAILABLE

PROPANE-BUTANE

INHALATION LC50 RAT: 658 mg/L (4 HOURS)

IT HAS NOT BEEN REPORTED THAT EXPOSURE TO LOW CONCENTRATIONS CAN CAUSE AVERSE EFFECTS ON HUMANS. IT HAS ANESTHESIC EFFECTS ON HUMANS AND ANIMALS. SUBIT DEATH CAN



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OCURR WHEN LARGE CONCENTRATIONS ARE INHALED. SAFETY MARGIN BETWEEN ANESTHESIC AND LETHAL CONCENTRATION IS TOO LOW. CHRONIC EXPOURE HAS BEEN REPORTED TO CAUSE SOME CNS SYMPTOMS.

12.- ECOLOGICAL INFORMATION

12.1 TOXICITY

HEXANE

LC50 DAPHNIA MAGNA >50 MG/L/24 HR /CONDITIONS OF BIOASSAY NOT SPECIFIED/

LC50 GOLDFISH 4 MG/L/24 HR /CONDITIONS OF BIOASSAY NOT SPECIFIED/

MINERAL OIL

INFORMATION NOT AVAILABLE

ADDITIVES

INFORMATION NOT AVAILABLE

PROPANE-BUTANE

DATA NOT AVAILABLE

12.2 PERSISTENCE AND DEGRADABILITY

HEXANE

TERRESTRIAL FATE: BASED ON A CLASSIFICATION SCHEME, AN ESTIMATED KOC VALUE OF 150, DETERMINED FROM A STRUCTURE ESTIMATION METHOD, INDICATES THAT N-HEXANE IS EXPECTED TO HAVE HIGH MOBILITY IN SOIL. VOLATILIZATION OF N-HEXANE FROM MOIST SOIL SURFACES IS EXPECTED TO BE AN IMPORTANT FATE PROCESS(SRC) GIVEN AN ESTIMATED HENRY'S LAW CONSTANT OF 1.83 ATM-CU M/MOLE, DETERMINED FROM ITS VAPOR PRESSURE OF 153 MM HG AND WATER SOLUBILITY OF 9.5 MG/L. THE POTENTIAL FOR VOLATILIZATION OF N-HEXANE FROM DRY SOIL SURFACES MAY EXIST BASED UPON ITS VAPOR PRESSURE. SCREENING STUDIES HAVE SHOWN THAT N-HEXANE IS BIODEGRADABLE UNDER AEROBIC CONDITIONS, AND THESE STUDIES SUGGEST THAT THIS COMPOUND WILL BIODEGRADE IN SOIL; HOWEVER, VOLATILIZATION FROM SOIL IS EXPECTED TO BE THE DOMINANT ENVIRONMENTAL FATE PROCESS OF N-HEXANE.

AQUATIC FATE: BASED ON A CLASSIFICATION SCHEME AN ESTIMATED KOC VALUE OF 150(SRC), DETERMINED FROM A STRUCTURE ESTIMATION METHOD, INDICATES THAT N-HEXANE IS NOT EXPECTED TO ADSORB TO SUSPENDED SOLIDS AND SEDIMENT. VOLATILIZATION FROM WATER SURFACES IS EXPECTED BASED UPON AN ESTIMATED HENRY'S LAW CONSTANT OF 1.83 ATM-CU M/MOLE(SRC), DETERMINED FROM A VAPOR PRESSURE OF 153 MM HG AND WATER SOLUBILITY OF 9.5 MG/L. USING THIS HENRY'S LAW CONSTANT AND AN ESTIMATION METHOD, VOLATILIZATION HALF-LIVES FOR A MODEL RIVER AND MODEL LAKE ARE 1 HOUR AND 3 DAYS, RESPECTIVELY. ACCORDING TO A CLASSIFICATION SCHEME, AN ESTIMATED BCF OF 200, FROM A LOG KOW OF 3.90 AND A REGRESSION-DERIVED EQUATION, SUGGESTS THE POTENTIAL FOR BIOCONCENTRATION IN AQUATIC ORGANISMS IS HIGH. SCREENING STUDIES HAVE SHOWN THAT N-HEXANE IS BIODEGRADABLE UNDER AEROBIC CONDITIONS, AND THESE STUDIES SUGGEST THAT THIS COMPOUND WILL BIODEGRADE IN WATER; HOWEVER, VOLATILIZATION FROM WATER SURFACES IS EXPECTED TO BE THE DOMINANT ENVIRONMENTAL FATE PROCESS OF N-HEXANE.

ATMOSPHERIC FATE: ACCORDING TO A MODEL OF GAS/PARTICLE PARTITIONING OF SEMIVOLATILE ORGANIC COMPOUNDS IN THE ATMOSPHERE, N-HEXANE, WHICH HAS A VAPOR PRESSURE OF 153 MM



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HG AT 25 DEG C, IS EXPECTED TO EXIST SOLELY AS A VAPOR IN THE AMBIENT ATMOSPHERE. VAPOR-PHASE N-HEXANE IS DEGRADED IN THE ATMOSPHERE BY REACTION WITH PHOTOCHEMICALLY-PRODUCED HYDROXYL RADICALS; THE HALF-LIFE FOR THIS REACTION IN AIR IS ESTIMATED TO BE 3 DAYS, CALCULATED FROM ITS RATE CONSTANT OF 5.61×10^{-12} CU CM/MOLECULE-SEC AT 25 DEG C.

MINERAL OIL

INFORMATION NOT AVAILABLE

ADDITIVES

INFORMATION NOT AVAILABLE

PROPANE-BUTANE

TERRESTRIAL FATE: BASED ON A CLASSIFICATION SCHEME, AN ESTIMATED KOC VALUE OF 460, DETERMINED FROM A LOG KOW OF 2.36 AND A REGRESSION-DERIVED EQUATION, INDICATES THAT PROPANE IS EXPECTED TO HAVE MODERATE MOBILITY IN SOIL. VOLATILIZATION OF PROPANE FROM MOIST SOIL SURFACES IS EXPECTED TO BE AN IMPORTANT FATE PROCESS GIVEN AN ESTIMATED HENRY'S LAW CONSTANT OF 7.07×10^{-1} ATM-CU M/MOLE(SRC), DERIVED FROM ITS VAPOR PRESSURE, 7150 MM HG, AND WATER SOLUBILITY, 62.4 MG/L. PROPANE IS EXPECTED TO VOLATILIZE FROM DRY SOIL SURFACES BASED UPON ITS VAPOR PRESSURE. USING CELL SUSPENSIONS OF MICROORGANISMS ISOLATED FROM SOIL AND WATER, PROPANE WAS OXIDIZED TO ACETONE WITHIN 24 HOURS, SUGGESTING THAT BIODEGRADATION MAY BE AN IMPORTANT FATE PROCESS IN SOIL AND SEDIMENT.

AQUATIC FATE: BASED ON A CLASSIFICATION SCHEME, AN ESTIMATED KOC VALUE OF 460(SRC), DETERMINED FROM A LOG KOW OF 2.36 AND A REGRESSION-DERIVED EQUATION, INDICATES THAT PROPANE IS EXPECTED TO ADSORB TO SUSPENDED SOLIDS AND SEDIMENT. VOLATILIZATION FROM WATER SURFACES IS EXPECTED BASED UPON AN ESTIMATED HENRY'S LAW CONSTANT OF 7.07×10^{-1} ATM-CU M/MOLE DERIVED FROM ITS VAPOR PRESSURE, 7150 MM HG, AND WATER SOLUBILITY, 62.4 MG/L(5). USING THIS HENRY'S LAW CONSTANT AND AN ESTIMATION METHOD, VOLATILIZATION HALF-LIVES FOR A MODEL RIVER AND MODEL LAKE ARE 41 MINUTES AND 2.6 DAYS, RESPECTIVELY(SRC). ACCORDING TO A CLASSIFICATION SCHEME, AN ESTIMATED BCF OF 13.1(SRC), FROM ITS LOG KOW AND A REGRESSION-DERIVED EQUATION, SUGGESTS THE POTENTIAL FOR BIOCONCENTRATION IN AQUATIC ORGANISMS IS LOW. AFTER 192 HR, THE TRACE CONCIN OF PROPANE CONTAINED IN GASOLINE REMAINED UNCHANGED FOR BOTH A STERILE CONTROL AND A MIXED CULTURE SAMPLE COLLECTED FROM GROUND WATER CONTAMINATED WITH GASOLINE. THIS INDICATES THAT BIODEGRADATION MAY NOT BE AN IMPORTANT FATE PROCESS IN WATER.

ATMOSPHERIC FATE: ACCORDING TO A MODEL OF GAS/PARTICLE PARTITIONING OF SEMIVOLATILE ORGANIC COMPOUNDS IN THE ATMOSPHERE, PROPANE, WHICH HAS A VAPOR PRESSURE OF 7150 MM HG AT 25 DEG C, IS EXPECTED TO EXIST SOLELY AS A GAS IN THE AMBIENT ATMOSPHERE. GAS-PHASE PROPANE IS DEGRADED IN THE ATMOSPHERE BY REACTION WITH PHOTOCHEMICALLY-PRODUCED HYDROXYL RADICALS; THE HALF-LIFE FOR THIS REACTION IN AIR IS ESTIMATED TO BE 14 DAYS, CALCULATED FROM ITS RATE CONSTANT OF 1.15×10^{-12} CU CM/MOLECULE-SEC AT 25 DEG C. PROPANE DOES NOT CONTAIN CHROMOPHORES THAT ABSORB AT WAVELENGTHS >290 NM AND THEREFORE IS NOT EXPECTED TO BE SUSCEPTIBLE TO DIRECT PHOTOLYSIS BY SUNLIGHT.

12.3 BIOACCUMULATIVE POTENTIAL

SEE 12.2

12.4 MOBILITY IN SOIL



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HEXANE

USING A STRUCTURE ESTIMATION METHOD BASED ON MOLECULAR CONNECTIVITY INDICES, THE KOC FOR N-HEXANE CAN BE ESTIMATED TO BE 150(SRC). ACCORDING TO A CLASSIFICATION SCHEME, THIS ESTIMATED KOC VALUE SUGGESTS THAT N-HEXANE IS EXPECTED TO HAVE HIGH MOBILITY IN SOIL.

MINERAL OIL

INFORMATION NOT AVAILABLE

ADDITIVES

INFORMATION NOT AVAILABLE

PROPANE-BUTANE

THE KOC OF PROPANE IS ESTIMATED AS 460(SRC), USING A LOG KOW OF 2.36 AND A REGRESSION-DERIVED EQUATION. ACCORDING TO A CLASSIFICATION SCHEME, THIS ESTIMATED KOC VALUE SUGGESTS THAT PROPANE IS EXPECTED TO HAVE MODERATE MOBILITY IN SOIL.

13.- DISPOSAL CONSIDERATIONS

SPECIAL CARE MUST BE TAKEN WHEN THE CHEMICAL MATERIAL IS USED AND DISPOSED OFF, JUST AS ITS CONTAINERS TO PREVENT ENVIRONMENT POLLUTION. THE RESIDUES CAN BE ELIMINATED BY SPRAY INCINERATION:

FLUID BED, 450-980 °C WITH RESIDENCE TIME OF SECONDS FOR GASES AND LIQUIDS.

ROTATIVE OVEN, 820-1600 °C WITH RESIDENCE TIME OF SECONDS FOR GASES AND LIQUIDS.

LIQUID INJECTION, 650-1600 °C WITH RESIDENCE TIME OF 0.1-2 SECONDS.

14.- TRANSPORT INFORMATION

Secretaría de Comunicaciones y transportes (SCT) – NOM-002-SCT2/1994 (México)

Información general para la transportación de embarques.

Shipping name: Aerosol (Contains hexane) (Can be transported as Limited Quantity)

UN Number: 1950

Class/Division: 2.1

Packing Group: N/A

Label: see section 2.

Limited Quantity: 1000 ml por bote

CANT. LTDA.



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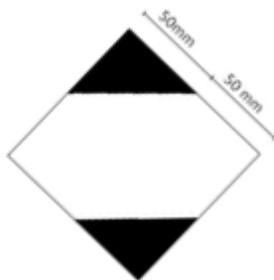


Fig. 1 Signal for containers with limited quantities.

According to NOM-011-SCT2/2012: 5.11 It is not necessary that containers/packages with hazardous substances or materials in limited quantities, have the Official Transport Name or UN number but must have the signal in Fig. 1. This signal must be clearly visible, legible and must be capable of withstanding weather exposure without suffering any degradation.

U.S. Department of Transportation (DOT) 49 – CFR 172 General Transportation Information for Bulk Shipments

Shipping name: Aerosol, flammable, n.o.s. (Limited Quantity can be used for aerosols not exceeding 1 L capacity)

UN/NA Number: UN 1950

Class/Division: 2.1

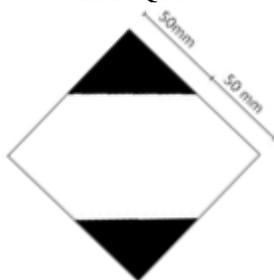
Packing Group: N/A

Label: see Section 2

Limited Quantity: 1000 ml per can

Special information (PHMSA): This product may be classified as LTD. QTY. when transported in quantities equal to or less than 1000 ml per container, but must have the signal LIMITED QUANTITY (LIMITED QUANTITY).

LTD. QTY.



Signal for containers with limited quantities

International Maritime Dangerous Goods (IMDG) CODE General Transportation Information for Shipments

Shipping name: Aerosol (This product may be classified as Limited Quantity).

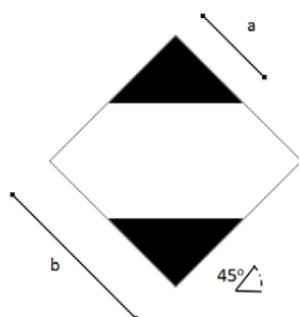


Petra LUBRICATING GREASE

UN/NA Number: UN 1950
 Class/Division: 2.1
 Packing Group: N/A
 Label: According to section 2.
 Limited Quantity: 1000 ml per can

It can be classified as LIMITED QUANTITY for maritime transportation according to IMDG CODE, 3.2 COLUMN 7. According to the 35 ammendment of the same code, the following signal must be used for limited quantities transportation.

LTD. QTY.



b = 100 mm
 a = 50 mm
 For packages not able to accommodate 100 mm mark, then
 b ≥ 50mm
 a = 1/2b
 Mark must be placed at a 45° angle
 Line must be black with minimum 2 mm thickness
 Top and bottom shaded areas must be black
 Center section may be white or same color as corrugate
 Text of other marks inside the diamond are not permitted

15.- REGULATORY INFORMATION

OCCUPATIONAL EXPOSURE LEVELS	HEXANE	MINERAL OIL	ADDITIVES	PROPANE-BUTANE
AUSTRALIA	TWA 20 ppm (72 mg/m ³), JUL2008	TWA 5 mg/m ³ , JUL2008	NOT AVAILABLE	Asphixiant, JUL2008
BELGIUM	TWA 20 ppm (72 mg/m ³), MAR2002	TWA 5 mg/m ³ , TWA STEL 10 mg/m ³ , MAR2002	NOT AVAILABLE	TWA 1000 ppm (mg/m ³), MAR2002
DENMARK	TWA 25 ppm (90 mg/m ³), OCT 2002	TWA 5 mg/m ³ , STEL 10 mg/m ³ , MAR2002	NOT AVAILABLE	TWA 1000 ppm (1800 mg/m ³), OCT 2002



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EU	TWA 72 mg/m ³ (20 ppm), FEB 2006		NOT AVAILABLE	NOT AVAILABLE
FINLAND	TWA 50 ppm (180 mg/m ³), TWA STEL 150 ppm (530 mg/m ³), JAN1999	TWA 5 mg/m ³ , JAN1999	NOT AVAILABLE	TWA 800 ppm (1100 mg/m ³), JAN1999
FRANCE	VME 50 ppm (170 mg/m ³), FEB2006		NOT AVAILABLE	NOT AVAILABLE
GERMANY	MAK 180 mg/m ³ (50 mL/m ³), 2005		NOT AVAILABLE	NOT AVAILABLE
HUNGARY	TWA 180 mg/m ³ , TWA STEL 720 mg/m ³ , Skin, SEP2000	ceiling concentration 5 mg/m ³ , Carcinogen, SEP2000	NOT AVAILABLE	NOT AVAILABLE
JAPAN	OEL 40 ppm (140 mg/m ³), skin, APR2007	OEL 3 mg/m ³ , group 1 carcinogen, APR2007	NOT AVAILABLE	NOT AVAILABLE
KOREA	TWA 50 ppm (180 mg/m ³), 2006	TWA 5 mg/m ³ , STEL 10 mg/m ³ , 2006	NOT AVAILABLE	NOT AVAILABLE
MEXICO	TWA 50 ppm (176 mg/m ³), 2004	TWA 5 mg/m ³ ; STEL 10 mg/m ³ , 2004	NOT AVAILABLE	asfixiante simple, 2004



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NETHERLANDS	MAC-TGG 90 mg/m ³ , 2003	MAC-TGG 5 mg/m ³ , 2003	NOT AVAILABLE	NOT AVAILABLE
NEW ZELAND	TWA 20 ppm (72 mg/m ³), JAN2002	TWA 5 mg/m ³ , STEL 10 ppm, JAN2002	NOT AVAILABLE	asfixiante simple, JAN2002
FILIPINES	TWA 500 ppm (1800 mg/m ³), JAN1993	TWA 5 mg/m ³ , JAN1993	NOT AVAILABLE	TWA 1000 ppm (1800 mg/m ³), JAN1993
POLAND	MAC(TWA) 100 mg/m ³ , MAC(STEL) 400 mg/me, JAN1999	MAC(TWA) 5 mg/m ³ , MAC(STEL) 10 mg/m ³ , JAN1999	NOT AVAILABLE	NOT AVAILABLE
RUSSIA	TWA 300 mg/m ³ , STEL 900 mg/m ³ , JUN2003	STEL 5 mg/m ³ , JUN2003	NOT AVAILABLE	NOT AVAILABLE
SWEDEN	TWA 25 ppm (90 mg/m ³); TWA STEL 50 ppm (180 mg/m ³), JUN2005	TWA 1 mg/m ³ ; TWA STEL 3 mg/m ³ , JUN2005	NOT AVAILABLE	NOT AVAILABLE



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SWITZERLAND	MAK- week 50 ppm (180 mg/m ³),KZG-week 400 ppm (1440 mg/m ³),Skin, DEC2006	MAK- semana 20 ppm (82 mg/m ³), KZG- semana 40 ppm (164 mg/m ³), SKIN, DEC2006	NOT AVAILABLE	NOT AVAILABLE
THAILAND	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
TURLEY	TWA 500 ppm (1800 mg/m ³), JAN1993	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
UNITED KINGDOM	TWA 20 ppm (72 mg/m ³), 2005	TWA 50 ppm (208 mg/m ³); STEL 100 ppm (SKIN), 2005	NOT AVAILABLE	NOT AVAILABLE

16. OTHER INFORMATION

NFPA CLASSIFICATION

HEALTH HAZARD: 2

FIRE: 4

REACTIVITY HAZARD: 0

ABBREVIATURES AND ACRONYMS

AEGL'S ACCUTE EXPOSURE GUIDELINE LIMITS

AEGL-1 IS THE AIRBORNE CONCENTRATION, EXPRESSED AS PARTS PER MILLION OR MILLIGRAMS PER CUBIC METER (PPM OR MG/M3) OF A SUBSTANCE ABOVE WHICH IT IS PREDICTED THAT THE GENERAL POPULATION, INCLUDING SUSCEPTIBLE INDIVIDUALS, COULD EXPERIENCE NOTABLE DISCOMFORT, IRRITATION, OR CERTAIN ASYMPTOMATIC NONSENSORY EFFECTS. HOWEVER, THE EFFECTS ARE NOT DISABLING AND ARE TRANSIENT AND REVERSIBLE UPON CESSATION OF EXPOSURE. **AEGL-2** IS THE AIRBORNE CONCENTRATION (EXPRESSED AS PPM OR MG/M3) OF A SUBSTANCE ABOVE WHICH IT IS PREDICTED THAT THE GENERAL POPULATION, INCLUDING SUSCEPTIBLE INDIVIDUALS, COULD EXPERIENCE IRREVERSIBLE OR OTHER SERIOUS, LONG-LASTING ADVERSE HEALTH EFFECTS OR AN IMPAIRED ABILITY TO ESCAPE.



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AEGL-3 IS THE AIRBORNE CONCENTRATION (EXPRESSED AS PPM OR MG/M³) OF A SUBSTANCE ABOVE WHICH IT IS PREDICTED THAT THE GENERAL POPULATION, INCLUDING SUSCEPTIBLE INDIVIDUALS, COULD EXPERIENCE LIFE-THREATENING HEALTH EFFECTS OR DEATH.

TWA TIME WEIGHED AVERAGE;

STEL SHORT TERM EXPOUSRE LIMIT;

NIOSH NATIONAL INSTITUTE FOR OCCUPATIONA SAFETY AND HEALTH

REL RECOMMENDED LÍMITE DE EXPOSICIÓN;

OSHA OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION

PEL PERMISSIBLE LÍMITE DE EXPOSICIÓN; LÍMITE DE EXPOSICIÓN PERMISIBLE

IDLH IMMEDIATE DOSE LETHAL TO HUMANS;

GHS GLOBAL HARMONIZING SYSTEM

N/D NOT DETERMINED

N/A NOT APPLICABLE

REFERENCES

NIOSH POCKET GUIDE

EUROPEAN CHEMICAL EDADNCY

WIRELESS INFORMATION SYSTEM FOR EMERGENCY RESPONDERS, NATIONAL LIBRARY OF MEDICINE

POISINDEX® Y MEDITEXT® (ESTAS BASES SE DEBEN CONSULTAR PARA ASISTENCIA EN CASO DE DIAGNÓSTICO O TRATMIENTO PARA CASOS ESPECÍFICOS)

CAMEO CHEMICALS DATABASE OF HAZARDOUS MATERIALS

OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION WEBPEDAD

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