HSE-INH-DAS-32-0019

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Hydrogenated Pyrolysis Gas (HPG) Hydrogenated C5-C8

Product Use: Product
Synonyms: Benzene Concentrate; BTX; Hexane, Light hydrotreated distillate
Product CAS No.: 68410-97-9

Company Identification:
RAS LAFFAN OLEFIN, Ltd.
1st Floor Salam Tower Al Corniche
P.O. Box 24646
Doha, Qatar

Product Information:
MSDS Requests: (+974) 484-7110
Responsible Party: Product Safety Group
Email:msds@cpchem.com

Chevron Phillips Chemicals International N.V.
Brusselsesteenweg 355
B-3090 Overijse
Belgium

24-Hour Emergency Telephone NumbersHEALTH:Chevron Phillips Emergency Information Center 866.442.9628 (North America) and 1.832.813.4984 (International)
TRANSPORTATION: North America: CHEMTREC 800.424.9300 or 703.527.3887
ASIA: +1.703.527.3887
EUROPE: BIG .32.14.584545 (phone) or .32.14.583516 (telefax)
SOUTH AMERICA SOS-Cotec Inside Brazil: 0800.111.767
Outside Brazil: 55.19.3467.1600

SECTION 2 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW
Colorless liquid. Mild odor.
NFPA RATINGS: **Health:** 2 **Flammability:** 3 **Reactivity:** 0

EU Classification:
Signal Word:
Danger
Risk Phrases:
R61: May cause harm to the unborn child.
R46: May cause heritable genetic damage.
R66: Repeated exposure may cause skin dryness or cracking.
R11: Highly flammable.
R45: May cause cancer.
R22: Harmful if swallowed.
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R36/38: Irritating to eyes and skin.
R48/23: Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R65: Harmful: may cause lung damage if swallowed.
Additional Hazards:
MAY CAUSE DAMAGE TO:
- - - - - AUDITORY SYSTEM
- - - - - BLOOD/BLOOD FORMING ORGANS
Safety Phrases:
S38: In case of insufficient ventilation, wear suitable respiratory equipment.
S2: Keep out of the reach of children.
S36/37: Wear suitable protective clothing and gloves.
S24/25: Avoid contact with skin and eyes.
S51: Use only in well-ventilated areas.
S9: Keep container in a well-ventilated place.
S62: If swallowed do not induce vomiting: seek medical advice immediately and show this container or label.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S53: Avoid exposure - obtain special instructions before use.
S16: Keep away from sources of ignition - No smoking.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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IMMEDIATE HEALTH EFFECTS:
Eye: Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision. Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin causes irritation. Prolonged or repeated skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: May be harmful if swallowed. This material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death.
Inhalation: Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty in breathing.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: Concentrations of this material above the recommended exposure limit may cause birth defects.
Cancer: Prolonged or repeated exposure to this material can cause cancer.
Genetic Toxicity: May cause heritable genetic damage based on animal data.

Target Organs: Repeated inhalation of this material at elevated concentrations may cause damage to the following organ(s) based on animal data: - Blood/Blood Forming Organs - Auditory System

See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	AMOUNT	EINECS / ELINCS	SYM	R-PHRASES
Hydrotreated light distillate	68410-97-9	100 % weight	270-093-2	T	R45, R65
Benzene **	71-43-2	< 70 % weight	200-753-7	F T	R48/23-25, R46, R36/38, R11, R45, R65
Toluene	108-88-3	< 25 % weight	203-625-9	F Xn	R63, R65, R38, R48/20, R11, R67
Mixed Xylenes	1330-20-7	< 7 % weight	215-535-7	Xn	R38, R10, R20/21
Ethylbenzene	100-41-4	< 5 % weight	202-849-4	F Xn	R20, R11
n-Hexane	110-54-3	< 4 % weight	203-777-6	F, Xn, N	R11, R67, R48/20, R51/53, R65, R62, R38
Cyclopentane	287-92-3	< 3 % weight	206-016-6	F	R52/53, R11

Occupational Exposure Limits:

Component	Limit	TWA	STEL	Ceiling / Peak	Notation
Benzene **	ACGIH	1 ppm	.5 ppm	NA	Skin (BEI) A1
Benzene **	CPCHEM	.5 ppm	2.5 ppm	NA	Skin
Benzene **	German MAK	1 ppm	NA	3	Skin, 1
Cyclopentane	ACGIH	600 ppm	NA	NA	NA
Ethylbenzene	ACGIH	100 ppm	125 ppm	NA	BEI A3
Ethylbenzene	German MAK	440 mg/m3	NA	1	Skin
Ethylbenzene	OSHA PEL	100 ppm	NA	NA	NA
Mixed Xylenes	ACGIH	100 ppm	150 ppm	NA	BEI A3
Toluene	ACGIH	20 ppm	NA	NA	Skin (BEI)
Toluene	German MAK	50 ppm	NA	4	Skin, C
Toluene	OSHA PEL	200 ppm	NA	300 ppm	NA
n-Hexane	ACGIH	50 ppm	NA	NA	Skin
n-Hexane	German MAK	180 mg/m3	NA	4	NA
n-Hexane	OSHA PEL	500 ppm	NA	NA	NA

** Due to possible carcinogenic effect, exposure should be reduced to the lowest feasible level.

SECTION 4 FIRST AID MEASURES

Eye: Flush eyes with running water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.
Skin: To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. Get medical attention if any symptoms develop.
Ingestion: If swallowed, do not induce vomiting. Give the person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.
FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Flammable liquid.
NFPA RATINGS: **Health:** 2 **Flammability:** 3 **Reactivity:** 0
FLAMMABLE PROPERTIES:
Flashpoint: -6.7°C (19.9°F) Estimated
Autoignition: 510°C (950°F) Estimated
Flammability (Explosive) Limits (% by volume in air): **Lower:** 1.2 **Upper:** 7.4

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form: Carbon Monoxide

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator. Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible sorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: U.S.A. regulations may require reporting spills of this material that could reach any surface waters. Report spills to local authorities and/or the National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL . REFER TO PRODUCT LABEL OR MANUFACTURERS TECHNICAL BULLETINS FOR THE PROPER USE AND HANDLING OF THIS MATERIAL .

Precautionary Measures: This material presents a fire hazard. Liquid quickly evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 15°F. Do not get in eyes. Do not breathe vapor or fumes.

General Handling Information: Avoid work practices that may release volatile components in the atmosphere. Local air pollution regulations should be consulted to determine if the release of volatile components is regulated or restricted in the area in which this material is used. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations, which have the potential of generating an accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids, National Fire Protection Association (NFPA 77), Recommended Practice on Static Electricity' (liquids, powders and dusts), and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents' (liquids).
General Storage Information: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, 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 containers should be completely drained, properly closed, and promptly returned to a drum reconditioner, or disposed of properly. DO NOT USE OR STORE near heat, sparks or open flames. USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, 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 containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:
Eye/Face Protection: Wear eye protection such as safety glasses, chemical goggles, or faceshields if engineering controls or work practices are not adequate to prevent eye contact.
Skin Protection: Wear impervious protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Users should determine acceptable performance characteristics of protective clothing. Consider physical requirements and other substances present when selecting protective clothing. Suggested materials for protective gloves include: Viton
Respiratory Protection: If exposure is anticipated to be greater than applicable exposure limits, wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material, such as: Air-Purifying Respirator for Organic Vapors

Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Limit	TWA	STEL	Ceiling / Peak	Notation
Benzene **	ACGIH	1 ppm	.5 ppm	NA	Skin (BEI) A1
Benzene **	CPCHEM	.5 ppm	2.5 ppm	NA	Skin
Benzene **	German MAK	1 ppm	NA	3	Skin, 1
Cyclopentane	ACGIH	600 ppm	NA	NA	NA
Ethylbenzene	ACGIH	100 ppm	125 ppm	NA	BEI A3
Ethylbenzene	German MAK	440 mg/m3	NA	1	Skin
Ethylbenzene	OSHA PEL	100 ppm	NA	NA	NA
Mixed Xylenes	ACGIH	100 ppm	150 ppm	NA	BEI A3
Toluene	ACGIH	20 ppm	NA	NA	Skin (BEI)
Toluene	German MAK	50 ppm	NA	4	Skin, C
Toluene	OSHA PEL	200 ppm	NA	300 ppm	NA
n-Hexane	ACGIH	50 ppm	NA	NA	Skin
n-Hexane	German MAK	180 mg/m3	NA	4	NA
n-Hexane	OSHA PEL	500 ppm	NA	NA	NA

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Colorless liquid. Mild odor.
Autoignition: 510°C (950°F) Estimated
Boiling Point: 66°C (150.8°F) - 232°C (449.6°F)
Evaporation Rate: NDA
Flammability (Explosive) Limits (% by volume in air): **Lower:** 1.2 **Upper:** 7.4
Flashpoint: -6.7°C (19.9°F) Estimated
Molecular Formula: Mixture
Molecular Weight: NDA
Melting Point: NDA
Octanol / Water Partition Coefficient: log-Kow: NDA
pH: NA
Pour Point: NDA
Solubility (in water): Negligible
Specific Gravity: 0.84 @ 15.6 °C (60°F)
Vapor Pressure: 3.3 psi @ 38 °C (100.4°F)
Vapor Density (AIR=1): NDA
Viscosity: 0.5 cSt Estimated @ 38 °C (100.4°F)
Percent Volatile: 100 % volume

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to Avoid: No Data Available
Incompatibility With Other Materials: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: Carbon Monoxide.
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS:

Acute Oral Toxicity: Benzene **: LD50 / rat / 810 mg/kg
Acute Dermal Toxicity: Mixed Xylenes: LD50 / rabbit / 3.2 g/kg
Acute Inhalation Toxicity: Ethylbenzene: LC50 / rat / 17.4 mg/l / 4 hour(s)

Eye Irritation: Benzene **:This material is irritating to the eyes.
Skin Irritation: Benzene **: This material is irritating to the skin.
Respiratory Tract Irritation: This material maybe irritating to the respiratory tract.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains BENZENE:
Repeated Dose Toxicity: 13 wks / inhalation / rat / Doses: 0, 10, 30, or 300ppm / 6 h/d, 5 d/wk / NOAEL = 10ppm, LOAEL = 30ppm (increase in mean thyroid weight); 103 wks / gavage / rat / Doses: 0, 25, 50, or100mg/kg for females, 0, 50, 100, or 200mg/kg for males / 5 d/wk / NOAEL < 25-50 mg/kg, LOAEL = 25-50 mg/kg (decreased white blood cell count); 103 wks / gavage / mouse / Doses: 0, 25, 50, or 100 mg/kg / NOAEL < 25 mg/kg, LOAEL = 25 mg/kg (decrease white blood cell counts)
Reproductive And Developmental Toxicity: GD 6-15 / inhalation / rat / Doses: 0, 10, 50, or 500ppm / daily, 7 h/d / NOAELteratogenicity = 50ppm, LOAEL = 500ppm (skeletal variants and evidence of lacking ossification in the rib cage, extremities, skull, pelvic girdle and vertebral column); GD 6-15 / inhalation / mouse / Doses: 0, 5, 10, or 20ppm / daily, 6 hrs/day / NOAEL teratogenicity = 20ppm; GD 6-15 / gavage / mouse / Doses: 0, 264, 440, or 880mg/kg / daily / NOAEL maternal tox. = 880 mg/kg , NOAEL teratogenicity = 880 mg/kg
Genetic Toxicity: Ames test - negative; Cytogenetic assay- positive; Mouse Lymphoma assay - positive; Sister Chromatid Exchange in CHO cells - negative; Micronucleus assay - positive
Carcinogenicity: 52 wks / gavage / rat / Doses: 0, 50, or 250mg/kg / daily, 4-5 d/wk / zymbal gland carcinomas, mammary gland carcinomas and leukemia; 103 wks / gavage / rat / Doses: 0, 50, 100, or 200mg/kg for males, 0, 25, 50 or 100 mg/kg for females / 5 d/wk / LOAEL = 25 mg/kg (zymbal gland carcinomas, squamous cell papillomas)
Other: Benzene is classified as a Group 1 carcinogen by IARC based on sufficient evidence of carcinogenicity in animals and sufficient evidence of carcinogenicity in humans.

This product contains TOLUENE:
Repeated Dose Toxicity: 15 wks / inhalation / rat / Doses: 0, 100, 625, 1250, 2500 or 3000 ppm/ 6.5 h/d, 5 d/wk / NOAEL = 625 ppm (changes in liver and kidney weights, decreased leukocyte count); 14 wks / inhalation / mice/ Doses: 0, 100, 625, 1250, 2500 or 3000 ppm/ 6.5 h/d, 5 d/wk / NOAEL = 100 ppm (increased organ weights, decreased body weights)
Reproductive and Developmental Toxicity: 2-generation/95 days/ inhalation/ rats / Doses: 0, 100, 500, or 2000ppm/ NOAEL = 2000ppm (max dose) -no effect on fertility, repro or lactation parameters; NOAEL for developmental effects = 400-750 ppm (skeletal malformations)
Genetic Toxicity: Ames test - negative; Sister Chromatid Exchange assay - negative; Mouse lymphoma assay - negative; Cytogenetic assay in vivo/in vitro - negative; Micronucleus test - negative
Carcinogenicity: 2 yrs / inhalation / rat & mouse / Doses: 0, 600, or 1200ppm / 6.5 h/day, 5 d/week / no evidence of carcinogenicity

This product contains N-HEXANE:
Repeated Dose Toxicity: 13 weeks / inhalation / rat / Doses: 0, 3000, 6500, or 10,000ppm / 6h/d, 5d/wk / LOAEL = 6500ppm (depression of body weight gain, lower brain weight and axonopathy in male rats)
Reproductive and Developmental Toxicity: 61 days / inhalation / rat / Doses: 0, 1000ppm / permanent testicular damage characterized by loss of germ-cell line
Genetic Toxicity: Ames test - negative; Mouse lymphoma Assay - positive; Sister Chromatid exchange assay - negative
Carcinogenicity: 24 weeks / inhalation / rat / Doses: 0, 3000ppm / 8h/d, 6days/week / rats developed papillary proliferation of non-ciliated bronchiolar cells

This product contains ETHYLBENZENE:
BIRTH DEFECTS AND REPRODUCTION: Not expected to be a teratogen or reproductive toxicant based on rats and rabbits studies. NOAEL is 500 ppm in a rat 2-generation reproductive neurotoxicity study. IMMUNOTOXICITY: NOAEL is 500 ppm in a rat splenic antibody formation study. There is no evidence that ethylbenzene is immunotoxic. HEARING: 200 ppm or higher concentration of vapor exposures were associated with structural and electrophysiological alterations in the auditory system of laboratory animals. GENETIC TOXICITY: Negative in the bacterial mutation test, Chinese Hamster Ovary (CHO) cell in vitro assay, sister chromatid exchange assay and an unscheduled DNA synthesis assay. Conflicting results for the mouse lymphoma cell assay. Increased micronuclei were reported in an in vitro Syrian hamster embryo cell assay; however, two in vivo micronuclei studies in mice were negative. In Syrian hamster embryo cells in vitro, cell transformation was observed at 7 days of incubation but not at 24 hours. CARCINOGENICITY: 103 wks / inhalation / rats and mice / 6h/d for 5d/wk / Doses: 75, 250, or 750 ppm / in rats exposed to 750 ppm, the incidence of kidney tubule hyperplasia and tumors was increased. In mice, the incidences of lung tumors in males and liver tumors in females exposed to 750 ppm increased as compared to control mice but were within the range of incidences observed historically in control mice. Ethylbezene is classified in group 2B (possibly carcinogenic to humans) by IARC.

This product contains MIXED XYLENES:
Repeated Dose Toxicity: 13 weeks / gavage / rat / Doses: 0, 62.5, 125, 250, 500, or1000mg/kg / daily, 5d/w / NOAEL = 1000mg/kg (for systemic effects including CNS effects) and NOAEL = 500mg/kg (reduced weight gain); 13 weeks / inhalation / rat / Doses: 0, 180, 460, or 810ppm / 6h/d, 5d/w / NOAEL > 810ppm
Reproductive and Developmental Toxicity: GD 7-16 / inhalation / rat / Doses: 0, 805, or 1610ppm / 6h/d / NOAEL = 1610ppm; GD 6-15 / oral (gavage) / mouse / Doses: 0, 780, 1960, or 2619mg/kg / 3 times/day / LOAEL = 1960mg/kg (maternal toxicity and increased incidences of resorptions and cleft palate), other test substance - paraxylene
Target Organs: 13 weeks / inhalation / rat / Doses: 0, 450, 900 or 1800ppm / 6h/d, 6d/wk / LOAEL = 900ppm (moderate to severe ototoxicity), other test substance - paraxylene
Genetic toxicity: Ames-negative; Mouse lymphoma assay - negative; Micronucleus assay - negative
Carcinogenicity: 103 weeks / gavage / rat / 0, 250, 500 mg/kg / 5d/w / NOAEL = 250 mg/kg / LOAEL = 500mg/kg (decreased body weight and decreased survival); 103 weeks / gavage / mouse / 0, 500, 100mg/kg / 5d/w / NOAEL = 1000mg/kg

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY:
This material is expected to be toxic to aquatic organisms.
Ethylbenzene - 96 hour(s) / LC50 / mysid shrimp (*Mysidopsis bahia*) / 2.6 mg/l
Benzene ** - 96 hour(s) / LC50 / striped bass (*Marone saxatilis*) / 5.3 mg/l
Benzene ** - 96 hour(s) / LC50 / rainbow trout (*Oncorhynchus mykiss*) / 5.3 - 9.1 mg/l
Benzene ** - 8 day(s) / EC50 / green algae (*Selenastrum capricornutum*) / 41 mg/l

ENVIRONMENTAL FATE:
This material is not expected to be readily biodegradable. This material is expected to be ultimately biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition). Consult the appropriate domestic or international mode-specific and quantity- specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

Shipping Descriptions per regulatory authority.

US DOT

UN1203, GASOLINE, 3, II , RQ (Benzene)

ICAO / IATA

UN1203, GASOLINE, 3, II

IMO / IMDG

UN1203, GASOLINE, 3, II, (-6.7°C) , RQ (Benzene)

RID / ADR

UN1203, GASOLINE, 3, II, ADR

SECTION 15 REGULATORY INFORMATION

SARA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	YES
2.	Delayed (Chronic) Health Effects:	YES
3.	Fire Hazard:	YES
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01= CA Prop 65	17 = FDA 178	33 = -
02 = LA RTK	18 = FDA 179	34 = -
03 = MA RTK	19 = FDA 180	35 = -
04 =MN Hazardous Substance	20 = FDA 181	36 = -
05 =NJ RTK	21 = FDA 182	37 = SARA Section 302
06 = PA RTK	22 = FDA 184	38 = SARA Section 313
07 = -	23 = FDA 186	39 = TSCA 12 (b)
08 = -	24 = FDA 189	40 = TSCA Section 4
09 = CWA Section 311	25 = IARC Group 1	41 = TSCA Section 5(a)
10 =DOT Marine Pollutant	26 = IARC Group 2A	42 = TSCA Section 8(a) CAIR
11 = FDA 172	27 = IARC Group 2B	43 = TSCA Section 8(a) PAIR
12 = FDA 173	28 = IARC Group 3	44 = TSCA Section 8(d)
13 = FDA 174	29 = IARC Group 4	45 = WHIMS - IDL
14 = FDA 175	30 = NTP Carcinogen	46 = Germany D TAL
15 = FDA 176	31 = OSHA Carcinogen	47 = Germany WKG
16 = FDA 177	32 = OSHA Highly Hazardous	48 = DEA List 1
		49 = DEA List 2

The following components of this material are found on the regulatory lists indicated.

Benzene **	1, 3, 4, 5, 6, 9, 25, 30, 31, 34, 36, 38, 45, 46
Toluene	1, 3, 4, 5, 6, 9, 36, 38, 45
Mixed Xylenes	1, 3, 4, 5, 6, 26, 28, 39, 40, 45
Ethylbenzene	1, 3, 4, 5, 6, 9, 26, 38, 45
n-Hexane	3, 4, 5, 6, 38, 45
Cyclopentane	3, 4, 5, 6, 45

CERCLA REPORTABLE QUANTITIES(RQ)/SARA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene **	10 lbs	None	16 lbs
Ethylbenzene	1000 lbs	None	19801 lbs
n-Hexane	5000 lbs	None	142857 lbs
Toluene	1000 lbs	None	5000 lbs

WHMIS CLASSIFICATION:
Class B, Division 2: Flammable Liquids
Class D, Division 2, Subdivision A: Very Toxic Material
Carcinogenicity
Mutagenicity
Chronic Toxic Effects
Teratogenicity and Embryotoxicity
Class D, Division 2, Subdivision B: Toxic Material
Chronic Toxic Effects
Skin or Eye Irritation

CHEMICAL INVENTORY LISTINGS:

AUSTRALIA	YES (AUS)
CANADA	YES (DSL)
CHINA	YES (IECSC)
EUROPEAN UNION	YES (EINECS)
JAPAN	YES (ENCS)
KOREA	YES (ECL)
PHILIPPINES	YES (PICCS)
UNITED STATES	YES (TSCA)

EU LABELING:
Signal Word:
Danger
Symbols:
T - Toxic F - Flammable N - Environment
Risk and Safety Phrases:
R61: May cause harm to the unborn child.
R46: May cause heritable genetic damage.
R66: Repeated exposure may cause skin dryness or cracking.
R11: Highly flammable.
R45: May cause cancer.
R22: Harmful if swallowed.
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R36/38: Irritating to eyes and skin.
R48/23: Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R65: Harmful: may cause lung damage if swallowed.
S38: In case of insufficient ventilation, wear suitable respiratory equipment.
S2: Keep out of the reach of children.
S36/37: Wear suitable protective clothing and gloves.
S24/25: Avoid contact with skin and eyes.
S51: Use only in well-ventilated areas.
S9: Keep container in a well-ventilated place.
S62: If swallowed do not induce vomiting: seek medical advice immediately and show this container or label.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S53: Avoid exposure - obtain special instructions before use.
S16: Keep away from sources of ignition - No smoking.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 3 Reactivity: 0 Special: NA

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA).

REVISION STATEMENT: This is a new RAS LAFFAN OLEFIN, Ltd MSDS please review all sections.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV	- Threshold Limit Value	TWA	- Time Weighted Average
STEL	- Short-term Exposure Limit	PEL	- Permissible Exposure Limit
ACGIH	- American Conference ofGovernment Industrial Hygienists	OSHA	- Occupational Safety & Health Administration
NIOSH	- National Institute for Occupational Safety & Health	NFPA	- National Fire Protection Agency
WHMIS	- Workplace Hazardous Materials Information System	IARC	- Intl. Agency for Research on Cancer
EINECS	- European Inventory ofexisting Commercial Chemical Substances	RCRA	- Resource Conservation Recovery Act
SARA	- Superfund Amendments and Reauthorization Act.	TSCA	- Toxic Substance Control Act
EC50	- Effective Concentration	LC50	- Lethal Concentration
LD50	- Lethal Dose	CAS	- Chemical Abstract Service
NDA	- No Data Available	NA	- Not Applicable
<=	- Less Than or Equal To	>=	- Greater Than or Equal To
CNS	- Central Nervous System	MAK	- Germany Maximum Concentration Values

This data sheet is prepared according to the latest adaptation of the EEC Guideline 67/548.
This data sheet is prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200).
This data sheet is prepared according to the ANSI MSDS Standard (Z400.1).
This data sheet was prepared by EHS Product Stewardship Group, Chevron Phillips Chemical Company LP, 10001 Six Pines Drive, The Woodlands, TX 77380.
This data sheet is prepared according to the Globally Harmonized System (GHS).

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.