SAFETY DATA SHEET
According to the Hazardous Products Regulations
Refinery Heavy Reformate

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SECTION 1. IDENTIFICATION

Product name : Refinery Heavy Reformate

Product code : Q7757

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Chemicals Canada**
PO Box 4280 STN C
CALGARY AB T2T 5Z5
Canada

Telephone : 1-855-697-4355

Telefax : 1-866-213-7508

Emergency telephone number

CHEMTREC (24 hr) : 1-800-424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Chemical intermediate.

Restrictions on use :
This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.
This product is not to be used as a solvent or cleaning agent; for lighting or brightening fires; as a skin cleanser.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Aspiration hazard : Category 1

Acute toxicity (Dermal) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2A

Acute toxicity (Inhalation)	:	Category 4
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system)
Specific target organ toxicity - single exposure	:	Category 3 (Narcotic effects)
Specific target organ toxicity - repeated exposure	:	Category 2 (Auditory system)
Long-term (chronic) aquatic hazard	:	Category 2

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
PHYSICAL HAZARDS:
H226 Flammable liquid and vapour.
HEALTH HAZARDS:
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
ENVIRONMENTAL HAZARDS:
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :
Prevention:
P201 Obtain special instructions before use.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:
P501 Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

Other hazards which do not result in classification
Moderately irritating to eyes.
Slightly irritating to respiratory system.
Liquid evaporates quickly and can ignite leading to a flash fire, or an explosion in a confined space.
This material is a static accumulator.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.
This product is intended for use in closed systems only.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Substance name : Refinery Heavy Reformate

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Naphtha (Petroleum), Heavy Catalytic Reformed	64741-68-0	>= 60 - <= 100

Further information

Contains:

Chemical name	Identification number	Concentration (% w/w)
Xylene, mixed isomers	1330-20-7	>= 15 - <= 40
Isohexanes	73513-42-5	<= 0.1
Ethylbenzene	100-41-4	<= 6.2
1,3,5-Trimethyl benzene	108-67-8	<= 4.8
1,2,4-Trimethylbenzene	95-63-6	<= 15.9
1,2,3-Trimethyl benzene	526-73-8	<= 3.3

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : Call emergency number for your location / facility.
Remove to fresh air. Do not attempt to rescue the victim un-

less proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardio-Pulmonary Resuscitation as required and transport to the nearest medical facility.

In case of skin contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
Transport to the nearest medical facility for additional treatment.

If swallowed : Call emergency number for your location / facility.
If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

Most important symptoms and effects, both acute and delayed : Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
Ingestion may result in nausea, vomiting and/or diarrhoea.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.
Auditory system effects may include temporary hearing loss and/or ringing in the ears.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the

incident, injury and surroundings.

Notes to physician : Call a doctor or poison control center for guidance.
Potential for chemical pneumonitis.
Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire.
Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards during fire-fighting : Carbon monoxide may be evolved if incomplete combustion occurs.
Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Unidentified organic and inorganic compounds.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Will float and can be reignited on surface water.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : If the fire cannot be extinguished the only course of action is to evacuate immediately.
Keep adjacent containers cool by spraying with water.
If possible remove containers from the danger zone.
Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Do not breathe fumes, vapour.
Do not operate electrical equipment.
Shut off leaks, if possible without personal risks.
Remove all possible sources of ignition in the surrounding

area.
Evacuate all personnel.
Attempt to disperse the vapour or to direct its flow to a safe location, for example by using fog sprays.
Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths.

Environmental precautions : Take measures to minimise the effects on groundwater.
Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

Methods and materials for containment and cleaning up : Take precautionary measures against static discharges.
For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely
For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Observe all relevant local and international regulations.
Avoid contact with skin, eyes and clothing.
Evacuate the area of all non-essential personnel.
Ventilate contaminated area thoroughly.
If contamination of site occurs remediation may require specialist advice.
Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Additional advice : For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.
Local authorities should be advised if significant spillages cannot be contained.
Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

SECTION 7. HANDLING AND STORAGE

General Precautions	:	Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Air-dry contaminated clothing in a well-ventilated area before laundering. Prevent spillages. Do not use as a cleaning solvent or other non-motor fuel uses. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse.
Advice on safe handling	:	Ensure that all local regulations regarding handling and storage facilities are followed. When using do not eat or drink. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Never siphon by mouth. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Avoid exposure. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Avoidance of contact	:	Strong oxidising agents.
Product Transfer	:	Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Storage

Other data	:	Tank storage: Tanks must be specifically designed for use with this product. Bulk storage tanks should be diked (bunded). Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions. Keep in a cool place. Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.
Packaging material	:	Suitable material: For containers, or container linings use mild steel, stainless steel., Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM), which have been specifically tested for compatibility with this product., For container linings, use amine-adduct cured epoxy paint., For seals and gaskets use: graphite, PTFE, Viton A, Viton B. Unsuitable material: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), polyisobutylene., However, some may be suitable for glove materials.
Container Advice	:	Do not cut, drill, grind, weld or perform similar operations on or near containers. Containers, even those that have been emptied, can contain explosive vapours.
Specific use(s)	:	Not applicable. See additional references that provide safe handling practices for liquids that are determined to be static accumulators: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity). IEC/TS 60079-32-1: Electrostatic hazards, guidance

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Naphtha (Petroleum), Heavy Catalytic Reformed	64741-68-0	TWA	525 mg/m3	CA ON OEL
Xylene, mixed isomers	1330-20-7	TWAEV	100 ppm 434 mg/m3	CA QC OEL
		STEV	150 ppm 651 mg/m3	CA QC OEL
		TWA	20 ppm	ACGIH
Isohexanes	73513-42-5	TWA	500 ppm	ACGIH
		STEL	1,000 ppm	ACGIH
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL
		ST	125 ppm 545 mg/m3	NIOSH REL
		TWA	100 ppm 435 mg/m3	OSHA Z-1
1,3,5-Trimethyl benzene	108-67-8	TWA	25 ppm 123 mg/m3	CA AB OEL
		TWAEV	25 ppm	CA QC OEL
		TWA	25 ppm	CA BC OEL
		TWA	10 ppm	ACGIH
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 123 mg/m3	CA AB OEL
		TWAEV	25 ppm 123 mg/m3	CA QC OEL
		TWA	25 ppm	CA BC OEL
		TWA	25 ppm	ACGIH
		TWA	10 ppm	ACGIH
1,2,3-Trimethyl benzene	526-73-8	TWA	25 ppm 123 mg/m3	CA AB OEL
		TWAEV	25 ppm	CA QC OEL
		TWA	25 ppm	CA BC OEL
		TWA	10 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Xylene, mixed isomers	1330-20-7	Methylhippuric acids	Urine	End of shift (As soon as possible	1.5 g/g creatinine	ACGIH BEI

				after exposure ceases)		
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl gly-oxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp
L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Eye washes and showers for emergency use.
Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when there is potential for inhalation; clear up spills immediately and dispose of wastes safely.Ensure safe systems of work or equivalent arrangements are in place to

manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.
Prevent unauthorised persons entering the zone.
Firewater monitors and deluge systems are recommended.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.
Do not ingest. If swallowed, then seek immediate medical assistance.

Personal protective equipment

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
All respiratory protection equipment and use must be in accordance with local regulations.

Select a filter suitable for the combination of organic gases and vapours and particles [Type A/Type P boiling point >65°C (149°F)].

Hand protection

Remarks	:	Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Select gloves tested to a relevant standard (e.g. Europe EN374, US F739). When prolonged or frequent repeated contact occurs, Nitrile gloves may be suitable. (Breakthrough time of > 240 minutes.) For incidental contact/splash protection Neoprene, PVC gloves may be suitable.
Eye protection	:	Chemical splash goggles (gas-tight monogoggles) and face shield.
Skin and body protection	:	Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.
Protective measures	:	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Hygiene measures	:	Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Environmental exposure controls

General advice	:	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Information on accidental release measures are to be found in section 6.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid.
Colour	:	colourless
Odour	:	Paraffinic
Odour Threshold	:	Data not available
pH	:	Not applicable
Melting point/freezing point	:	Data not available
Boiling point/boiling range	:	Typical 162 - 192 °C / 324 - 378 °F
Flash point	:	Typical 42 °C / 108 °F Method: Abel
Evaporation rate	:	0.16 Method: ASTM D 3539, nBuAc=1 80 Method: DIN 53170, di-ethyl ether=1
Flammability Flammability (solid, gas)	:	Not applicable
Lower explosion limit and upper explosion limit / flammability limit		
Upper explosion limit	:	6.5 %(V)
Lower explosion limit	:	1 %(V)
Vapour pressure	:	370 Pa (20 °C / 68 °F)
Relative vapour density	:	no data available
Relative density	:	0.88
Density	:	Typical 783 kg/m3 (15 °C / 59 °F)Method: ASTM D4052
Solubility(ies) Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	log Pow: 2 - 7
Auto-ignition temperature	:	> 220 °C / 428 °F
Decomposition temperature	:	Data not available

Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	Typical 1.08 mm2/s (25 °C / 77 °F)
Explosive properties	:	Classification Code: Not classified
Oxidizing properties	:	Not applicable
Surface tension	:	Typical 26.4 mN/m, 20 °C / 68 °F, ASTM D-971
Conductivity	:	Low conductivity: < 100 pS/m, The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semiconductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid
Molecular weight	:	140 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	May oxidise in the presence of air.
Chemical stability	:	Stable under normal conditions of use.
Possibility of hazardous reactions	:	May oxidise in the presence of air.
Conditions to avoid	:	Avoid heat, sparks, open flames and other ignition sources. In certain circumstances product can ignite due to static electricity.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on product data, a knowledge of the components and the toxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure
Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 Oral (Rat): > 300 - 2,000 mg/kg
Remarks: Harmful if swallowed.

Acute inhalation toxicity : LC 50 (Rat): Exposure time: 4 h
Remarks: Harmful if inhaled.
LC50 > 10,0 - <= 20,0 mg/l

Acute dermal toxicity : LD50 Dermal (Rabbit): Remarks: Harmful in contact with skin.
LD50 >1000 - <=2000 mg/kg

Acute toxicity (other routes of administration) :
Remarks: Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Remarks: Low toxicity
Based on available data, the classification criteria are not met.

Acute inhalation toxicity : Remarks: Low toxicity by inhalation.
LC50 greater than near-saturated vapour concentration.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Remarks: Low toxicity

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Remarks: Causes skin irritation.
Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: Causes serious eye irritation.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Remarks: Not irritating to eye.

Respiratory or skin sensitisation

Product:

Remarks: Not a sensitiser.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Remarks: Not a sensitiser.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

Genotoxicity in vivo	:	Remarks: Not mutagenic.
Germ cell mutagenicity - Assessment	:	This product does not meet the criteria for classification in categories 1A/1B.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:

Genotoxicity in vivo	:	Remarks: Not mutagenic.

Carcinogenicity

Product:

Remarks: An increased tumour incidence has been observed in experimental animals; the significance of this finding to man is unknown.

Carcinogenicity - Assessment	:	This product does not meet the criteria for classification in categories 1A/1B.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Remarks: Not a carcinogen.
Based on available data, the classification criteria are not met.

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

Effects on fertility : Remarks: Not a developmental toxicant.
Does not impair fertility.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:

Effects on fertility : Remarks: Does not impair fertility.
Not a developmental toxicant.
Causes foetotoxicity in animals at doses which are maternally toxic.

STOT - single exposure

Product:

Remarks: High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

Remarks: Inhalation of vapours or mists may cause irritation to the respiratory system.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:

Remarks: May cause respiratory irritation.
May cause drowsiness and dizziness.

STOT - repeated exposure

Product:

Remarks: Prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss.
Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Remarks: Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss.
Kidney: caused kidney effects in male rats which are not considered relevant to humans

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Further information

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment	:	Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to crustacean (Acute toxicity)	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to algae/aquatic plants (Acute toxicity)	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to fish (Chronic tox-	:	Remarks: Data not available

icity)

Toxicity to crustacean (Chronic toxicity)	:	Remarks: NOEC/NOEL > 1.0 - <= 10 mg/l
Toxicity to microorganisms (Acute toxicity)	:	Remarks: LL/EL/IL50 >10 <= 100 mg/l Harmful

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:

Toxicity to fish (Acute toxicity)	:	Remarks: LC/EC/IC50 >1 - <=10 mg/l Toxic
Toxicity to crustacean (Acute toxicity)	:	Remarks: LC/EC/IC50 >1 - <=10 mg/l Toxic
Toxicity to algae/aquatic plants (Acute toxicity)	:	Remarks: LC/EC/IC50 >1 - <=10 mg/l Toxic
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to crustacean(Chronic toxicity)	:	Remarks: Data not available
Toxicity to bacteria	:	Remarks: LC/EC/IC50 > 100 mg/l Practically non toxic: Based on available data, the classification criteria are not met.

Persistence and degradability

Product:

Biodegradability	:	Remarks: Inherently biodegradable. Oxidises rapidly by photo-chemical reactions in air.

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:

Biodegradability	:	Remarks: Oxidises rapidly by photo-chemical reactions in air. Readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Contains components with the potential to bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 2 - 7

Components:

Naphtha (Petroleum), Heavy Catalytic Reformed:
Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:
Mobility : Remarks: If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.
Floats on water.
Evaporates within a day from water or soil surfaces.

Components:
Naphtha (Petroleum), Heavy Catalytic Reformed:
Mobility : Remarks: Floats on water.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Other adverse effects

Components:
Naphtha (Petroleum), Heavy Catalytic Reformed:
Additional ecological information : Does not have ozone depletion potential.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Do not dispose into the environment, in drains or in water courses.
Do not dispose of tank water bottoms by allowing them to drain into the ground.

Contaminated packaging : Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not puncture, cut, or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.
Do not pollute the soil, water or environment with the waste

container.

Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Classification of waste is always the responsibility of the end user.

SECTION 14. TRANSPORT INFORMATION

TDG

UN number	:	1268
Proper shipping name	:	PETROLEUM DISTILLATES, N.O.S.
Class	:	3
Packing group	:	III
Labels	:	3
Marine pollutant	:	no

International Regulations

IATA-DGR

UN/ID No.	:	UN 1268
Proper shipping name	:	Petroleum distillates, n.o.s.
Class	:	3
Packing group	:	III
Labels	:	3

IMDG-Code

UN number	:	UN 1268
Proper shipping name	:	PETROLEUM DISTILLATES, N.O.S. (Petroleum naphtha)
Class	:	3
Packing group	:	III
Labels	:	3
Marine pollutant	:	yes

Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

The components of this product are reported in the following inventories:

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

This product is intended for use in closed systems only.
A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

Revision Date : 2024-09-26

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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