Isohexane LNH

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1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name : Isohexane LNH

Product code Q1215

: Hydrocarbons, C6, isoalkanes < 5% n-hexane (Iso-Hexane) Synonyms

64742-49-0 CAS-No.

ENCS/ISHL number : (9)-1700

Manufacturer or supplier's details

Supplier's company name,

address and phone number SHELL EASTERN CHEMICALS (S)

A REGISTERED BUSINESS OF SHELL EASTERN

TRADING (PTE) LTD (UEN:198902087C)

9 North Buona Vista Drive, #07-01

The Metropolis Tower 1 Singapore 138588

Singapore

Telephone : +65 6384 8269 Telefax : +65 6384 8454

Contact for Safety Data

Sheet

Emergency telephone : +65 6542 9595 (Alert SGS)

number

Recommended use of the chemical and restrictions on use

Recommended use Industrial Solvent.

Restrictions on use This product must not be used in applications other than the

above without first seeking the advice of the supplier.

2. HAZARDS IDENTIFICATION

GHS classification of chemical product

Flammable liquids Category 2 Aspiration hazard Category 1 Skin irritation Category 2

Specific target organ toxicity -

single exposure

: Category 3 (Narcotic effects)

Short-term (acute) aquatic

hazard

: Category 2

Long-term (chronic) aquatic : Category 2

hazard

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GHS label elements

Hazard pictograms









Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

H225 Highly flammable liquid and vapour.

HEALTH HAZARDS:

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

ENVIRONMENTAL HAZARDS: H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge. P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash hands thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P273 Avoid release to the environment.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/

P370 + P378 In case of fire: Use appropriate media to extinguish.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P331 Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of water and soap. P332 + P313 If skin irritation occurs: Get medical advice/

attention.

P362 + P364 Take off contaminated clothing and wash it before reuse

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

P391 Collect spillage.

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Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P235 Keep cool. P405 Store locked up.

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

May form flammable/explosive vapour-air mixture. 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 airvapour mixtures can occur.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

3.1 Substances

Components

Substance name	CAS-No.	Classification	Concentration (% w/w)
Naphtha (Petroleum), Hydrotreated Light	64742-49-0	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 STOT SE3; H336 Aquatic Acute2; H401 Aquatic Chronic2; H411	100

For explanation of abbreviations see section 16.

Further information

Contains:

Chemical name	Identification number	Concentration (% w/w)	
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n-Hexane 110-54-3 > 0 - < 5

4. FIRST-AID MEASURES

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

conditions.

If inhaled : Remove to fresh air. If rapid recovery does not occur,

transport to nearest medical facility for additional treatment.

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 : Flush eye with copious quantities of water.

Remove contact lenses, if present and easy to do. Continue

rinsing.

If persistent irritation occurs, obtain medical attention.

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

: 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.

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.

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.

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Notes to physician : Call a doctor or poison control center for guidance.

Potential for chemical pneumonitis.

Treat symptomatically.

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 water in a jet.

Specific hazards during

firefighting

: Clear fire area of all non-emergency personnel. Hazardous combustion products may include:

A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

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

: Standard procedure for chemical fires.

Keep adjacent containers cool by spraying with water.

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).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Observe all relevant local and international regulations.

Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

: Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or

unprotected personnel.

Do not breathe fumes, vapour.

Do not operate electrical equipment.

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all

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> possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Monitor area with combustible gas indicator.

Methods and materials for containment and cleaning up 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.

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

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require

specialist advice.

Additional advice

: For guidance on selection of personal protective equipment

see Section 8 of this Safety Data Sheet.

For guidance on disposal of spilled material see Section 13 of

this Safety Data Sheet.

7. HANDLING AND STORAGE

Handling

Technical measures : 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.

Ensure that all local regulations regarding handling and

storage facilities are followed.

Avoid inhaling vapour and/or mists. Advice on safe handling

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

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vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

The vapour is heavier than air, spreads along the ground and

distant ignition is possible.

Facial protective equipment : Wear goggles for use against liquids and gas.

> If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide

adequate eye protection.

: Wash hands before eating, drinking, smoking and using the Hygiene measures

toilet.

Launder contaminated clothing before re-use.

Do not ingest. If swallowed, then seek immediate medical

assistance.

Describe contact avoidance.

etc

Product Transfer

Strong oxidising agents.

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.

Refer to guidance under Handling section.

Storage

: Refer to section 15 for any additional specific legislation Conditions for safe storage

covering the packaging and storage of this product.

Other data : Storage Temperature:

Ambient.

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.

Must be stored in a diked (bunded) well- ventilated area, away

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from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not

harmful or toxic to man or to the environment.

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.

Packaging material : Suitable material: For containers, or container linings use mild

steel, stainless steel., For container paints, use epoxy paint,

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or

near containers.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold limit value and permissible exposure limits for each component in the work environment

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Isohexanes	Not Assigned	TWA	900 mg/m3	OEL based on European Hydrocarbon Solvents Producers (CEFIC- HSPA) methodology.

Biological occupational exposure limits

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	Component	CAS-No.	Target	Biological	Sampling	Permissible	Basis
			substance	specimen	time	concentratio	
						n	
	n-Hexane	110-54-3	2,5-	Urine	End of	3.mg/g	JSOH
			Hexanedion		shift at	creatinine	
			e - after acid		weekend		
			hydrolysis				
	n-Hexane		2,5-	Urine	End of	0.3.mg/g	JSOH
			Hexanedion		shift at	creatinine	
			e - without		weekend		
			acid				
			hydrolysis				

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.dquv.de/inhalt/index.jsp

L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Standard concentration values and application methods for chemical substances were determined to prevent health problems among workers (mhlw.go.jp)

Engineering measures

: 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.

Firewater monitors and deluge systems are recommended. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated. 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:

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

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> 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 for subsequent recycle.

Personal protective equipment

Protective measures

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

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 unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an

appropriate combination of mask and filter.

If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type AX boiling point ≤65°C (149°F)].

Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Viton. Incidental contact/Splash protection: Nitrile rubber. PVC. 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 shortterm/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.

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Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. 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. 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.

Eye and face protection : Wear goggles for use against liquids and gas.

goggles may not be required and safety glasses may provide

adequate eye protection.

Skin and body protection : Chemical resistant gloves/gauntlets, boots, and apron.

Protective clothing approved to EU Standard EN14605.

Thermal hazards : Not applicable

Hygiene measures : Wash hands before eating, drinking, smoking and using the

toilet.

Launder contaminated clothing before re-use.

Do not ingest. If swallowed, then seek immediate medical

assistance.

Environmental exposure controls

General advice : Local guidelines on emission limits for volatile substances

must be observed for the discharge of exhaust air containing

vapour.

Minimise release to the environment. An environmental assessment must be made to ensure compliance with local

environmental legislation.

Information on accidental release measures are to be found in

section 6.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Colour : colourless
Odour : Paraffinic

Odour Threshold : Data not available pH : Not applicable

Pour point : Typical -150 °C / -238 °F

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Melting point/freezing point Data not available

Boiling point, initial boiling

point and boiling range

: Typical 57 - 63 °C / 135 - 145 °F

Flash point : Typical -33 °C / -27 °F

Method: IP 170

Evaporation rate : 9.4

Method: ASTM D 3539, nBuAc=1

1.2

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 : 7.4 %(V)

Lower explosion limit : 1 %(V)

Vapour pressure : 11 kPa (0 °C / 32 °F)

25 kPa (20 °C / 68 °F)

74 kPa (50 °C / 122 °F)

Relative vapour density : Data not available

Density and / or relative density

Relative density : Data not available

Density : Typical 665 kg/m3 (15 °C / 59 °F)

Method: ASTM D4052

Solubility(ies)

Water solubility : negligible

Solubility in other solvents : Data not available

Partition coefficient: n-

octanol/water

: log Pow: 4

Auto-ignition point : 405 °C / 761 °F

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Decomposition temperature : Data not available

Viscosity

Viscosity (Dynamic) : Data not available

Viscosity, kinematic : Typical 0.44 mm2/s (25 °C / 77 °F)

Method: ASTM D445

Particle characteristics

Particle size : Data not available

Explosive properties : Not classified

Oxidizing properties : Not applicable

Surface tension : Typical 17.2 mN/m

Conductivity : 0.1 pS/m at 20 °C / 68 °F

Method: ASTM D-4308 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 semi-conductive, 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 : 86 g/mol

10. STABILITY AND REACTIVITY

Reactivity : The product does not pose any further reactivity hazards in

addition to those listed in the following sub-paragraph.

Chemical stability : No hazardous reaction is expected when handled and stored

according to provisions Stable under normal conditions of use.

Possibility of hazardous

reactions

: Reacts with strong oxidising agents.

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.

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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.

11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data obtained from similar

substances.

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

Components:

Naphtha (Petroleum), Hydrotreated Light:

Acute oral toxicity : LD 50 Rat: > 5,000 mg/kg

Remarks: Low toxicity

Based on available data, the classification criteria are not met.

Acute inhalation toxicity : LC 50 Rat: > 20 mg/l

Remarks: Low toxicity by inhalation.

Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD 50 Rabbit: 2,000 mg/kg

Remarks: Low toxicity

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Components:

Naphtha (Petroleum), Hydrotreated Light:

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Components:

Naphtha (Petroleum), Hydrotreated Light:

Remarks: Not irritating to eye.

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Respiratory or skin sensitisation

Components:

Naphtha (Petroleum), Hydrotreated Light:

Remarks: Not a sensitiser.

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Components:

Naphtha (Petroleum), Hydrotreated Light:

: Remarks: Not mutagenic.

Germ cell mutagenicity-Assessment

This product does not meet the criteria for classification in

categories 1A/1B.

Carcinogenicity

Components:

Naphtha (Petroleum), Hydrotreated Light:

Remarks: Tumours produced in animals are not considered relevant to humans., Not a carcinogen., Based on available data, the classification criteria are not met.

Carcinogenicity -

: This product does not meet the criteria for classification in

Assessment categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification		
Naphtha (Petroleum), Hydrotreated Light	No carcinogenicity classification.		
n-Hexane	No carcinogenicity classification.		

Material	Other Carcinogenicity Classification	
Naphtha (Petroleum), Hydrotreated Light	IARC: Group 3: Not classifiable as to its carcinogenicity to humans	

Reproductive toxicity

Components:

Naphtha (Petroleum), Hydrotreated Light:

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.

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STOT - single exposure

Components:

Naphtha (Petroleum), Hydrotreated Light:

Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Components:

Naphtha (Petroleum), Hydrotreated Light:

Remarks: Based on available data, the classification criteria are not met.

Aspiration toxicity

Components:

Naphtha (Petroleum), Hydrotreated Light:

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

Further information

Components:

Naphtha (Petroleum), Hydrotreated Light:

Remarks: Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

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.

Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for

individual component(s).

Ecotoxicity

Components:

Naphtha (Petroleum), Hydrotreated Light:

Toxicity to fish (Acute : Remarks: Data not available

toxicity)

Toxicity to crustacean (Acute : Remarks: LL/EL/IL50 > 1 <= 10 mg/l

toxicity)

Toxicity to algae/aquatic : Remarks: Toxic

plants (Acute toxicity) LC/EC/IC50 >10 - <=100 mg/l

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v to microorganisms : Remarks: Data not available

Toxicity to microorganisms

(Acute toxicity)

Toxicity to fish (Chronic

toxicity)

Toxicity to

crustacean(Chronic toxicity)

: Remarks: Data not available

: Remarks: Data not available

Persistence and degradability

Components:

Naphtha (Petroleum), Hydrotreated Light:

Biodegradability : Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

Bioaccumulation

Product:

Partition coefficient: n-

: log Pow: 4

octanol/water

Components:

Naphtha (Petroleum), Hydrotreated Light:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

Mobility in soil

Components:

Naphtha (Petroleum), Hydrotreated Light:

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), Hydrotreated Light:

Results of PBT and vPvB

assessment

: The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not

considered to be PBT or vPvB.

Additional ecological

information

: Does not have ozone depletion potential.

Hazardous to the ozone layer

Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal methods

Chemicals (residual waste) : 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 product should not be allowed to contaminate soil or

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> ground water, or be disposed of into the environment. 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. This will result in soil and groundwater contamination.

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.

Waste, spills or used product is dangerous waste.

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.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated containers and 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.

Comply with any local recovery or waste disposal regulations.

14. TRANSPORT INFORMATION

Regulatory information when there are domestic regulations

Refer to section 15 for specific national regulation.

International Regulations

ADR

UN number : 1208 Product Name (Proper : HEXANES

shipping name)

Class (Hazard class in : 3

transportation)

: 11 Packing group : 3 Hazard Identification Number : 33 Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 1208

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: HEXANES

: 3

Product Name (Proper

shipping name)

Class (Hazard class in

transportation)

Packing group : II
Labels : 3

IMDG-Code

UN number : UN 1208
Product Name (Proper : HEXANES

shipping name)

Class (Hazard class in : 3

transportation)

Packing group : II
Labels : 3
Marine pollutant : yes

Maritime transport in bulk according to IMO instruments

Pollution category : Y Ship type : 2

Product name : Hexane (all isomers)

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.

Additional Information: This product may be transported under nitrogen blanketing.

Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a

confined space entry.

Transport in bulk according to Annex II of Marpol and the IBC

Code

15. REGULATORY INFORMATION

Related Regulations

Fire Service Law

Group 4Group 4, Type 1 petroleums, Water insoluble liquid, (200 litre), Hazardous rank II

Chemical Substance Control Law

Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacture

Not applicable

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Harmful Substances Required Permission for Manufacture

Notification required

Harmful Substances Required Permission for Manufacture

Not applicable

Substances Prevented From Impairment of Health

Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity

Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity

Not applicable

Substances Subject to be Notified Names

Not applicable

Substances Subject to be Indicated Names

Not applicable

Ordinance on Prevention of Hazards Due to Specified Chemical Substances

Not applicable

Ordinance on Prevention of Lead Poisoning

Not applicable

Ordinance on Prevention of Tetraalkyl Lead Poisoning

Not applicable

Ordinance on Prevention of Organic Solvent Poisoning

Ordinance on Prevention of Organic Solvent Poisoning

Not applicable

Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)

Inflammable Substance

Poisonous and Deleterious Substances Control Law

Not applicable

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Class I Designated Chemical Substances

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Not applicable

Explosive Control Law

Not applicable

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Vessel Safety Law

Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law

Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

Marine Pollution and Sea Disaster Prevention etc Law

Marine pollutant

Marine Pollution and Sea Disaster Prevention etc Law

Bulk transportation : (Oil.)

Waste Disposal and Public Cleansing Law

Specially Controlled Industrial Waste

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

AIIC : Listed

DSL : Listed

IECSC : Listed

KECI : Listed

NZIoC : Listed

PICCS : Listed

TSCA : Listed

TCSI : Listed

ENCS : Listed

16. OTHER INFORMATION

Full text of H-Statements

H225 Highly flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute Short-term (acute) aquatic hazard Aquatic Chronic Long-term (chronic) aquatic hazard

Asp. Tox. Aspiration hazard Flam. Liq. Flammable liquids Skin Irrit. Skin irritation

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STOT SE Specific target organ toxicity - single exposure

Abbreviations and Acronyms

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

Further information

Training advice : Provide adequate information, instruction and training for

operators.

Other information : 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).

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

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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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