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SECTION 1. IDENTIFICATION

Product name : NGL- Propane - HD5 - NonOdorized

Product code : X3504

Manufacturer or supplier's details

Company : Shell Chemical LP

PO Box 576

HOUSTON TX 77001

USA

SDS Request : 1-800-240-6737 Customer Service : 1-855-697-4355

Emergency telephone number

Chemtrec Domestic (24 hr) : 1-800-424-9300 Chemtrec International (24 : 1-703-527-3887

hr)

Recommended use of the chemical and restrictions on use

Recommended use : Used as a domestic, commercial, industrial and automotive

fuel, a feedstock in chemical processes.

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 sup-

plier.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable gases : Category 1

Gases under pressure : Liquefied gas

GHS label elements

Hazard pictograms :





Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

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HEALTH HAZARDS:

Not classified as a health hazard under GHS criteria.

ENVIRONMENTAL HAZARDS:

Not classified as an environmental hazard under GHS criteria.

Precautionary statements

Prevention:

P102 Keep out of reach of children.

P210 Keep away from heat/sparks/open flames/hot surfaces.

No smoking.

P243 Take precautionary measures against static discharge.

Response:

P377 Leaking gas fire: Do not extinguish, unless leak can be

stopped safely.

P381 Eliminate all ignition sources if safe to do so.

Storage:

P410 + P403 Protect from sunlight. Store in a well-ventilated

place.

Disposal:

No precautionary phrases.

Other hazards which do not result in classification

Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.

High gas concentrations will displace available air; unconsciousness and death may occur suddenly from lack of oxygen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
propane	propane (Re-	74-98-6	> 90
	frigerated liq-		
	uid)		
propylene	propene	115-07-1	< 5
Hydrocarbons, C>3	Hydrocarbons,	68476-44-8	< 2.5
	C>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 unless 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

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Cardio-Pulmonary Resuscitation as required and transport to

the nearest medical facility.

In case of skin contact : Remove contaminated clothing. Flush exposed area with wa-

ter and follow by washing with soap if available.

If persistent irritation occurs, obtain medical attention.

In the event of frostbite, slowly warm the exposed area by

rinsing with warm water.

Transport to the nearest medical facility for additional treat-

ment.

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. In the event of frostbite, slowly warm the exposed area by

rinsing with warm water.

Transport to the nearest medical facility for additional treat-

ment.

If swallowed : In the unlikely event of ingestion, obtain medical attention

immediately.

Most important symptoms and effects, both acute and

delayed

Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-

headedness, headache and nausea.

Rapid release of gases which are liquids under pressure may cause frost burns of exposed tissues (skin, eye) due to evapo-

rative cooling.

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.

Indication of any immediate medical attention and special

treatment needed

IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!

Artificial respiration and/or oxygen may be necessary. Call a doctor or poison control center for guidance.

Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Shut off supply. If not possible and no risk to surroundings, let

the fire burn itself out.

Dry chemical

Carbon dioxide (CO2)

Keep containers and surroundings cool with water spray. Large fires should only be fought by properly trained fire fight-

ers.

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.

Specific hazards during fire- : Hazardous combustion products may include:

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fighting Carbon monoxide may be evolved if incomplete combustion

occurs.

Unidentified organic and inorganic compounds.

Sustained fire attack on vessels may result in a Boiling Liquid

Expanding Vapor Explosion (BLEVE).

Contents are under pressure and can explode when exposed

to heat or flames.

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

distant ignition is possible.

Further information : Clear fire area of all non-emergency personnel.

Keep adjacent containers cool by spraying with water. If possible remove containers from the danger zone.

If the fire cannot be extinguished the only course of action is

to evacuate immediately.

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

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas 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 meter. Vapour may form an explosive mixture with air.

Test atmosphere for flammable gas concentrations to ensure safe working conditions before personnel are allowed to enter the area.

Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Vapour may form an explosive mixture with air.

Environmental precautions : Use appropriate containment to avoid environmental contami-

nation.

Risk of explosion. Inform the emergency services if product

enters surface water drains.

Methods and materials for containment and cleaning up

Allow to evaporate.

Attempt to disperse the gas or to direct its flow to a safe loca-

tion, for example by using fog sprays.

Evacuate the area of all non-essential personnel.

Ventilate contaminated area thoroughly. Avoid contact with skin, eyes and clothing.

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Additional advice

: For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.

For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

Local authorities should be advised if significant spillages cannot be contained.

U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Center at (800) 424-8802.

Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills into surface waters must be reported to the National Response Center at (800) 424-8802.

This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA.

SECTION 7. HANDLING AND STORAGE

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

Chapter 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.

Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.

Take precautionary measures against static discharges.

Advice on safe handling This product can create a low temperature exposure hazard when released as a liquid.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Avoid prolonged or repeated contact with skin.

Electrostatic charges may be generated during pumping. Elec-

trostatic discharge may cause fire.

Earth all equipment.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

This product is intended for use in closed systems only. Ensure that all local regulations regarding handling and stor-

age facilities are followed.

Avoidance of contact Strong oxidising agents.

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Product Transfer : Do not use compressed air for filling discharge or handling.

Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Delivery lines may become cold enough to present a cold burns haz-

ard.

Further information on stor-

age stability

Store only in purpose-designed, appropriately labelled pres-

sure vessels or cylinders.

Must be stored in a well-ventilated area, away from sunlight,

ignition sources and other sources of heat.

Do not store near cylinders containing compressed oxygen or

other strong oxidizers.

Refer to section 15 for any additional specific legislation cov-

ering the packaging and storage of this product.

Packaging material : Suitable material: For containers and container linings, use

materials specifically approved for use with this product., Examples of suitable materials are: PA-11, PEEK, PVDF, PTFE, GRE (Epoxy), GRVE (vinyl ester), Viton (FKM), type F and

GB, Neoprene (CR).

Unsuitable material: Some forms of cast iron., Examples of materials to avoid are: ABS, polymethyl methacrylate (PMMA), polyethylene (PE / HDPE), polypropylene (PP), PVC, natural rubber (NR), Nitrile (NBR) ethylene propylene rubber (EPDM), Butyl (IIR), Hypalon (CSM), polystyrene, polyvinyl chloride (PVC), polyisobutylene., For containers and container linings, aluminium should not be used if there is a

risk of caustic contamination of the product.

Container Advice : Containers, even those that have been emptied, can contain

explosive vapours. Do not cut, drill, grind, weld or perform

similar operations on or near containers.

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
propane	74-98-6	TWA	1,000 ppm 1,800 mg/m3	OSHA Z-1
propylene	115-07-1	TWA	500 ppm	ACGIH

Biological occupational exposure limits

No biological limit allocated.

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.

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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.

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.

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 unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined

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space) use appropriate positive pressure breathing appa-

ratus.

Where air-filtering respirators are suitable, select an appro-

priate combination of mask and filter.

Select a filter suitable for organic gases and vapours [Type

AX boiling point ≤65°C (149°F)].

Hand protection Remarks

Eye protection

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. 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. Neoprene rubber. Nitrile rubber. If contact with liquefied product is possible or anticipated, gloves should be thermally insulated to prevent cold burns.

: Wear goggles for use against liquids and gas, combined with

face shield with chin guard.

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

apron.

Protective measures : Personal protective equipment (PPE) should meet recom-

mended national standards. Check with PPE suppliers.

Thermal hazards : When handling cold material that can cause frost burns, wear

heat resistant gloves, safety hat and visor, cold resistant overalls (with cuffs over gloves and legs over boots) and heavy

duty boots e.g. leather for cold resistance.

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 : compressed liquefied gas

Colour : colourless

Odour : odourless

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Odour Threshold : Data not available

pH : Not applicable

Freezing point : $< -188 \, ^{\circ}\text{C} / < -306 \, ^{\circ}\text{F}$

Initial boiling point and boiling

range

: ca. -42 °C / -44 °F

Flash point : ca. -104 $^{\circ}$ C / -155 $^{\circ}$ F

Method: Tag closed cup

Evaporation rate : Data not available

Flammability (solid, gas) : Extremely flammable.

Upper explosion limit / upper

flammability limit

10 %(V)

Lower explosion limit / Lower :

flammability limit

Typical 1.9 %(V)

Vapour pressure : > 53.3 kPa (-56 °C / -69 °F)

Relative vapour density : 1.05

(Air = 1.0)

Relative density : 0.493 (25 °C / 77 °F)

Density : 493 kg/m3 (25 °C / 77 °F)

Solubility(ies)

Water solubility : slight

Solubility in other solvents : Data not available

Partition coefficient: n-

octanol/water

log Pow: 2.3

Auto-ignition temperature : Typical 287 - 537 °C / 549 - 999 °F

Decomposition temperature : Data not available

Viscosity

Viscosity, kinematic : Not applicable

Explosive properties : Classification Code: Not classified

Oxidizing properties : Not applicable

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Surface tension : Data not available

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 antistatic additives can greatly influence the conductivity of a liq-

uid

Molecular weight : Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No, product will not become self-reactive.

Chemical stability : Stable.

Possibility of hazardous reac-

tions

No hazardous reaction is expected when handled and stored

according to provisions

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.

Prevent vapour accumulation.

In certain circumstances product can ignite due to static elec-

tricity.

Incompatible materials : Strong oxidising agents.

Hazardous decomposition

products

Hazardous decomposition products are not expected to form

during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on product testing.

Information on likely routes of exposure

Inhalation is the primary route of exposure although exposure may occur through skin or eye contact.

Acute toxicity

Product:

Acute oral toxicity : Remarks: Not applicable

Acute inhalation toxicity : LC 50 (Rat): > 20000 ppmV

Exposure time: 4 h Remarks: Low toxicity:

Acute dermal toxicity : Remarks: Not applicable

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Acute toxicity (other routes of

administration)

Remarks: Inhalation of vapours or mists may cause irritation

to the respiratory system.

Skin corrosion/irritation

Product:

Remarks: Not irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Essentially non-irritating to eyes.

Respiratory or skin sensitisation

Product:

Remarks: Not a sensitiser.

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

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic, Based on available data, the classi-

fication criteria are not met.

Carcinogenicity

Product:

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:

:

Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are

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not met.

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.

STOT - repeated exposure

Product:

Remarks: Low systemic toxicity on repeated exposure.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Rapid release of gases which are liquids under pressure may cause frost burns of exposed tissues (skin, eye) due to evaporative cooling., High gas concentrations will displace available air; unconsciousness and death may occur suddenly from lack of oxygen., 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.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically

for this product.

Information given is based on a knowledge of the components

and the ecotoxicology of similar products.

Ecotoxicity

Product:

Toxicity to fish (Acute toxici-

ty)

Remarks: LL/EL/IL50 > 100 mg/l

Practically non toxic:

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

Toxicity to daphnia and other :

aquatic invertebrates (Acute

toxicity)

Remarks: LL/EL/IL50 > 100 mg/l

Practically non toxic:

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

Toxicity to algae (Acute tox-

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icity) Remarks: LL/EL/IL50 > 100 mg/l

Practically non toxic:

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

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

Toxicity to microorganisms

(Acute toxicity)

Remarks: LL/EL/IL50 > 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.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Mobility in soil

Product:

Mobility : Remarks: Evaporates extremely rapidly from water or soil

surfaces.

Disperses rapidly in air.

Other adverse effects

Product:

Additional ecological infor-

mation

In view of the high rate of loss from solution, the product is

unlikely to pose a significant hazard to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : 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 meth-

ods 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

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collector or contractor should be established beforehand. Do not dispose into the environment, in drains or in water

courses

Given the nature and uses of this product, the need for disposal seldom arises. If necessary, dispose by controlled combustion in purpose-designed equipment. If this is not possible,

contact the supplier.

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 pollute the soil, water or environment with the waste

container.

Return part-used or empty cylinders to the supplier. For tanks seek specialist advice from suppliers.

Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

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 na-

tional requirements and must be complied with.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

UN/ID/NA number : UN 1075

Proper shipping name : PETROLEUM GASES, LIQUEFIED

Class : 2.1

Packing group : Not Assigned

Labels : 2.1
ERG Code : 115
Marine pollutant : no

Remarks : NOT-ODORIZED

International Regulations

IATA-DGR

UN/ID No. : UN 1075

Proper shipping name : PETROLEUM GASES, LIQUEFIED

Class : 2.1

Packing group : Not Assigned

Labels : 2.1

IMDG-Code

UN number : UN 1075

Proper shipping name : PETROLEUM GASES, LIQUEFIED

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Class : 2.1

Packing group : Not Assigned

Labels : 2.1 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 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

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ	
		(lbs)	(lbs)	
propane	74-98-6	100	100	

^{*:} The components with RQs are given for information., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)

Gases under pressure

SARA 313 : The following components are subject to reporting levels es-

tablished by SARA Title III, Section 313:

propylene 115-07-1 >= 1 - < 5 %

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

US State Regulations

Pennsylvania Right To Know

propane 74-98-6

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propylene 115-07-1

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

California List of Hazardous Substances

propylene 115-07-1

Other regulations:

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

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

PICCS : All components listed.

EINECS : All components listed.

DSL : All components listed.

IECSC : All components listed.

AIIC : All components listed.

ENCS : All components listed.

TSCA : All components listed.

KECI : All components listed.

NZIoC : All components listed.

CH INV : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reac- 1, 4, 0

tivity)

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Lim-

its for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average OSHA Z-1 / TWA : 8-hour time weighted average

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this docu-

ment can be looked up in reference literature (e.g. scientific

dictionaries) and/or websites.

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

NGL- Propane - HD5 - NonOdorized

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> ACGIH = American Conference of Governmental Industrial **Hvaienists**

ADR = European Agreement concerning the International

Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut fur Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial

Chemical Substances

EL50 = Effective Loading fifty

ENCS = Japanese Existing and New Chemical Substances Inventory

EWC = European Waste Code

GHS = Globally Harmonised System of Classification and Labelling of Chemicals

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IC50 = Inhibitory Concentration fifty

IL50 = Inhibitory Level fifty

IMDG = International Maritime Dangerous Goods

INV = Chinese Chemicals Inventory

IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables

KECI = Korea Existing Chemicals Inventory

LC50 = Lethal Concentration fifty

LD50 = Lethal Dose fifty per cent.

LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading

LL50 = Lethal Loading fifty

MARPOL = International Convention for the Prevention of Pollution From Ships

NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level

OE_HPV = Occupational Exposure - High Production Volume

PBT = Persistent, Bioaccumulative and Toxic

PICCS = Philippine Inventory of Chemicals and Chemical Substances

PNEC = Predicted No Effect Concentration

REACH = Registration Evaluation And Authorisation Of Chemicals

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

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RID = Regulations Relating to International Carriage of Dan-

gerous Goods by Rail

SKIN_DES = Skin Designation STEL = Short term exposure limit TRA = Targeted Risk Assessment

TSCA = US Toxic Substances Control Act

TWA = Time-Weighted Average

vPvB = very Persistent and very Bioaccumulative

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Due to a change in detail in Section 15, this document has been released as a significant change.

Revision Date : 06/08/2018

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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