SAFETY DATA SHEET

1. Identification of the dangerous substance/preparation and the identity of the manufacturer, importer, agent or marketer

Product name **Eastern Mediterranean Condensate**

Manufacturer: NOBLE ENERGY MEDITERRANEAN, Ltd.
Address: ACKERSTEIN TOWERS, BUILDING D
12 ABBA EBEN BOULEVARD
P.O BOX 12890
HERZELIA PITUACH, 4672530
Israel
General Information: 972-73-2424-260
e-mail: SDSGLOBAL@nobleeneergyinc.com
Emergency telephone: 1-760-476-3961
Access code 333053

2. Identification of the components of the substance/preparation

Substance or Preparation Preparation

Chemical name	Synonyms	CAS number	Percent
Natural gas condensates (petroleum)		64741-47-5	100
Hydrocarbons (aromatic and paraffinic)		8002-05-9	> 70
Toluene		108-88-3	< 15
Xylene		1330-20-7	< 12
n-Hexane		110-54-3	5 - 10
Benzene		71-43-2	0.5 - 5
Ethylbenzene		100-41-4	0 - 1
Methanol		67-56-1	0 - 1

Composition comments The full text for all R-phrases is displayed in section 16 of the SDS. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Natural gas condensate can contain minor amounts of sulfur, nitrogen, and oxygen containing organic compounds as well as trace amounts of heavy metals. Composition can vary depending on the source.
Methanol is introduced periodically to the pipeline transportation process to prevent the formation of hydrates. Therefore Methanol content is listed in the Composition / Information on Ingredients table above.

3. Dangers of the dangerous substance/preparation

Classification F+;R12, Carc. Cat. 1;R45, Muta. Cat. 2;R46, Xn;R65, N;R51/53

Physical hazards Extremely flammable.

Health hazards May cause cancer. May cause heritable genetic damage. Also harmful: may cause lung damage if swallowed. Occupational exposure to the substance or mixture may cause adverse health effects.

Environmental hazards Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards May cause cancer. May cause heritable genetic damage. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Main symptoms Causes skin and eye irritation. May cause drowsiness and dizziness. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

4. First aid instructions

First aid measures for different exposure routes

Inhalation If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Skin contact Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Ingestion	Call a physician or poison control center immediately. DO NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration.
Main symptoms	May cause genetic defects. Swallowing of the liquid, or vomiting as a result, may result in aspiration into the lungs. Causes skin and eye irritation. May cause cancer. Suspected of damaging the unborn child.
Personal protection for first-aid responders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Notes to physician	Treat symptomatically. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficulty breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.
Special first aid equipment	None known.

5. Firefighting procedure

Extinguishing media

Suitable extinguishing media	Foam. Dry chemical powder. Carbon dioxide (CO2). Water fog.
Extinguishing media which must not be used for safety reasons	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during fire fighting	The product is highly flammable, and explosive vapour/air mixtures may be formed even at normal room temperatures. Vapours may travel considerable distance to a source of ignition and flash back. Containers may explode when heated. Thermal decomposition or combustion may liberate toxic gases or fumes.
Special fire fighting procedures	Prevent buildup of vapours or gasses to explosive concentrations.
Protection of fire-fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
General fire hazards	Extremely flammable liquid and vapour.
Specific methods	Move container from fire area if it can be done without risk. Use water spray to keep fire-exposed containers cool.

6. Safety precautions

Personal precautions	Eliminate sources of ignition. Wear appropriate personal protective equipment (See Section 8).
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Methods for cleaning up	Eliminate sources of ignition. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spills: Use water spray to disperse vapours and dilute spill to a nonflammable mixture. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

7. Handling and storage

Handling

Technical measures	The product is extremely flammable, and explosive vapour/air mixtures may be formed even at normal room temperatures.
Local and general ventilation	Ensure adequate ventilation, especially in confined areas.
Safe handling advice	Avoid breathing mists or vapours. Wash thoroughly after handling. Use only with adequate ventilation.

Storage

Appropriate and safe storage conditions	Flammable liquid storage.
Suitable storage conditions	Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Special recommendations	Keep away from heat and sources of ignition.
Safe packaging materials	No specific recommendations.

8. Means of reducing exposure and personal protection

Engineering measures	Ensure adequate ventilation, especially in confined areas. Provide easy access to water supply and eye wash facilities.

Occupational exposure limits

Israel. OELs (Labor Inspection Regs. (Occup. & Bio. Monitoring of those Working with Hazardous Materials), Appendix 2, 1990, as amended)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
n-Hexane (CAS 110-54-3)	TWA	50 ppm
Toluene (CAS 108-88-3)	TWA	50 ppm
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
n-Hexane (CAS 110-54-3)	TWA	50 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

Biological limit values

Israel. BEIs (Work Safety Regulations (Environmental Monitoring and Biological Monitoring of Workers with Harmful Agents))

Components	Value	Determinant	Specimen	Sampling time
Benzene (CAS 71-43-2)	0.05 mg/g	t,t-Muconic acid	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	0.7 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedion, without hydrolysis	Urine	*
Toluene (CAS 108-88-3)	1.6 g/g	Hippuric acid	Creatinine in urine	*
Xylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

Israel. OELs (Work Safety Regulations (Environmental Monitoring and Biological Monitoring of Workers with Harmful Agents))

Components	Value	Specimen
Benzene (CAS 71-43-2)	0.25 ppm	Source of limit value(s): Israel
Toluene (CAS 108-88-3)	25 ppm	Source of limit value(s): Israel

Israel. OELs (Work Safety Regulations (Environmental Monitoring and Biological Monitoring of Workers with Harmful Agents))

Components	Value	Specimen
Xylene (CAS 1330-20-7)	50 ppm	Source of limit value(s): Israel

* - For sampling details, please see the source document.

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine	*
	25 µg/g	S-Phenyl - mercapturic acid		*
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedion, without hydrolysis	Urine	*
	0.4 mg/l	2,5-Hexanedi - on, without hydrolysis		*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Xylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Israel OELs: Skin designation

METHANOL (CAS 67-56-1)	Can be absorbed through the skin.
N-HEXANE (CAS 110-54-3)	Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Methanol (CAS 67-56-1)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.

Personal protective equipment

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister.
Hand protection	Chemical resistant gloves are recommended.
Eye protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Clear golden yellow liquid.
Physical state	Liquid.
Form	Liquid.

Colour	Yellow.
Odour	Gasoline.
Odour threshold	Not relevant.
pH	Not relevant.
Melting point/freezing point	-101 °C (-149.8 °F)
Initial boiling point and boiling range	-7 °C (19.4 °F)
Decomposition temperature	Not relevant.
Flash point	-23.9 °C (-11.0 °F) Pensky-Martens Closed Cup
Flammability	Not relevant.
Auto-ignition temperature	235 °C (455 °F)
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1
Flammability limit - upper (%)	7.5
Oxidizing properties	Not applicable.
Vapour pressure	2.3 kPa @ 68 °F (20°C)
Density	0.89 @ 68 °F (20°C) API Gravity 27.8
Solubility(ies)	
Solubility (water)	38 mg/l @ 68 °F (20°C) (Slightly Soluble)
Partition coefficient (n-octanol/water)	3.9
Other information	
Evaporation rate	14.7 (n-Butylacetate=1)
Explosive properties	Not explosive.
Vapour density	2.9 @ 68 °F (20°C) (Air=1)
Viscosity	2 cSt @ 104 °F (40°C) 3 cSt @ 77 °F (25°C)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Keep away from heat, sparks, and flame.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Incompatibility	Strong oxidising agents.
Hazardous decomposition products	No hazardous decomposition products are known.
Materials to avoid	The product is stable and non-reactive under normal conditions of use, storage and transport.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness or dizziness. Prolonged exposure may cause chronic effects.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Swallowing or vomiting of the liquid may result in aspiration into the lungs.
Toxicological data	Occupational exposure to the substance or mixture may cause adverse effects.
Acute toxicity	May be fatal if swallowed and enters airways.

Components	Species	Test results
Benzene (CAS 71-43-2)		
Acute		
Oral		
LD50	Mouse	4700 mg/kg
	Rat	3306 mg/kg
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
		17.8 ml/kg, 24 Hours
Inhalation		
LC50	Mouse	> 8000 ppm, 20 Minutes
	Rat	4000 ppm
Oral		
LD50	Rat	5.46 g/kg
Other		
LD50	Mouse	17.81 mm/kg
Methanol (CAS 67-56-1)		
Acute		
Inhalation		
LC50	Mouse	79.43 mg/l, 134 Minutes
	Rat	64000 ppm, 4 Hours
		> 115.9 mg/l, 4 Hours
		82.1 mg/l, 6 Hours
Oral		
LD50	Monkey	6000 mg/kg
	Rat	1187 - 2769 mg/kg
Other		
LD50	Mouse	6000 mg/kg
Natural gas condensates (petroleum) (CAS 64741-47-5)		
Acute		
Dermal		
LD50	Rabbit	> 1900 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 4970 mg/m3, 4 Hours
		> 4.96 mg/l, 4 Hours
Oral		
LD50	Rat	> 4800 mg/kg
n-Hexane (CAS 110-54-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	28710 mg/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	14.1 ml/kg
Inhalation		
LC50	Rat	49000 mg/m³, 4 Hours

Components	Species	Test results
Oral		
LD50	Rat	636 mg/kg
Xylene (CAS 1330-20-7)		
Acute		
Dermal		
LD50	Rabbit	12126 mg/kg, 24 Hours
		> 5000 ml/kg, 4 Hours
Inhalation		
LC50	Mouse	5300 ppm, 6 Hours
	Rat	5922 ppm, 4 Hours
Oral		
LD50	Mouse	5251 mg/kg
	Rat	3523 mg/kg
		10 ml/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitiser.

Skin sensitisation Not a skin sensitiser.

Germ cell mutagenicity May cause genetic defects.

Carcinogenicity May cause cancer.

ACGIH Carcinogens

Benzene (CAS 71-43-2)	A1 Confirmed human carcinogen.
Ethylbenzene (CAS 100-41-4)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Toluene (CAS 108-88-3)	A4 Not classifiable as a human carcinogen.
Xylene (CAS 1330-20-7)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Benzene (CAS 71-43-2)	1 Carcinogenic to humans.
Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
Hydrocarbons (aromatic and paraffinic) (CAS 8002-05-9)	3 Not classifiable as to carcinogenicity to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
Xylene (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure Causes damage to organs (Blood, Central nervous system) through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects May cause cancer. May cause genetic defects.

12. Environmental information

Ecotoxicity

Components		Species	Test results
Benzene (CAS 71-43-2)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	8.76 - 15.6 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5.3 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1 - 4 mg/l, 48 hours

Components		Species	Test results
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4 mg/l, 96 hours
Hydrocarbons (aromatic and paraffinic) (CAS 8002-05-9)			
Aquatic			
Fish	LC50	Cutthroat trout (Oncorhynchus clarki)	2.1 - 4.3 mg/l, 96 hours
Methanol (CAS 67-56-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5.89 - 7.81 mg/l, 96 hours
Xylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	8 mg/l, 96 Hours

Environmental effects Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability

Mobility in soil

Mobility in general The product is insoluble in water.

Other information Not available.

13. Dangerous substance disposal methods

Disposal instructions Do not discharge into drains, water courses or onto the ground. Discharge, treatment, or disposal may be subject to national, state, or local laws.

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Since emptied containers retain product residue, follow label warnings even after container is emptied.

Special precautions Dispose of in accordance with local regulations.

14. Transport information

International regulations

IATA

UN number UN1993

UN proper shipping name Flammable liquid, n.o.s. (Natural gas condensates (petroleum))

Transport hazard class(es)

Class 3

Subsidiary risk -

Packing group I

Environmental hazards Yes

ERG Code 3H

Special precautions for user Not available.

IMDG

UN number UN1993

UN proper shipping name FLAMMABLE LIQUID, N.O.S. (Natural gas condensates (petroleum))

Transport hazard class(es)

Class 3

Subsidiary risk -

Packing group I

Environmental hazards

Marine pollutant Yes

EmS F-E, S-E

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

Israel regulations

Israel. Harmful Chemicals (Hazardous Substances Law, 5753-1993, Annex 1, as amended)

Methanol (CAS 67-56-1)
Xylene (CAS 1330-20-7)

Israel. Toxic Chemicals (Hazardous Substances Law, 5753-1993, Annex 2, as amended)

Hydrocarbons (aromatic and paraffinic) (CAS 8002-05-9)

Labelling

Contains Benzene, Ethylbenzene, Hydrocarbons (aromatic and paraffinic), Methanol, Natural gas condensates (petroleum), Toluene, Xylene

Symbol(s)

Toxic

Extremely flammable

Dangerous for the environment

R-phrase(s)

R45 May cause cancer.
R46 May cause heritable genetic damage.
R12 Extremely flammable.
R65 Also harmful: may cause lung damage if swallowed.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S3 Keep in a cool place.
S9 Keep container in a well-ventilated place.
S16 Keep away from sources of ignition - No smoking.
S23 Do not breathe gas/fumes/vapour/spray.
S36/37 Wear suitable protective clothing and gloves.
S53 Avoid exposure - obtain special instructions before use.
S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.
S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

16. Other information

Training information Follow training instructions when handling this material.

Recommended use Fuel

Recommended restrictions Use in accordance with supplier's recommendations.

Further information Not applicable.

Bibliography

ECHA registered substances database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
Registry of Toxic Effects of Chemical Substances (RTECS)

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