

1. Identification

Product identifier	Natural Gas Liquid	
Other means of identification	Not available.	
Recommended use	Fuel	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	Noble Energy, Inc.	
Address	1001 Noble Energy Way Houston, TX 77070 US US	
Telephone	Non-emergency Telephone:	720-587-2085
E-mail	SDSGLOBAL@nobleenergyinc.com	
Emergency phone number	24 Hour Emergency: Access code	1-760-476-3962 333053

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 1
Health hazards	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1A
	Reproductive toxicity (fertility)	Category 2
	Aspiration hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Extremely flammable liquid and vapor. May be fatal if swallowed and enters airways. May cause cancer. Suspected of damaging fertility or the unborn child. Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.

Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapor. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response

If swallowed: Immediately call a poison center/doctor. Do not induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. Collect spillage.

Storage

Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Natural gas (petroleum), raw liq. mix	64741-48-6	100
Benzene	71-43-2	<1
Ethylbenzene	100-41-4	<1
Hexane	110-54-3	<1

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately!
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.
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.
Most important symptoms/effects, acute and delayed	May be fatal if swallowed and enters airways. May cause cancer. May cause genetic defects. Suspected of damaging fertility or the unborn child.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Foam. Dry chemical powder. Carbon dioxide (CO ₂). Water fog.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Container may explode in heat of fire.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Specific methods	Move container from fire area if it can be done without risk. Use water spray to keep fire-exposed containers cool.

6. Accidental release measures

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

7. Handling and storage

Precautions for safe handling	Keep away from heat, sparks and open flame. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Use only with adequate ventilation.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed and in a well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m ³
		100 ppm
Hexane (CAS 110-54-3)	PEL	1800 mg/m ³
		500 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Benzene (CAS 71-43-2)	Ceiling	25 ppm
	TWA	10 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
Hexane (CAS 110-54-3)	TWA	50 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	1 ppm
	TWA	0.1 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m ³
	TWA	125 ppm
Hexane (CAS 110-54-3)	TWA	435 mg/m ³
	TWA	100 ppm
Hexane (CAS 110-54-3)	TWA	180 mg/m ³
	TWA	50 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Sampling Time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenyl - mercapturic acid	*
	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine *
Ethylbenzene (CAS 100-41-4)	0.7 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine *
Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedion, without hydrolysis	Urine *

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

Exposure guidelines

US - California OELs: Skin designation

Benzene (CAS 71-43-2)

Can be absorbed through the skin.

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.

Hexane (CAS 110-54-3)

Can be absorbed through the skin.

Appropriate engineering controls

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

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Chemical resistant gloves are recommended.

Other

Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

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.

Thermal hazards

Not applicable.

General hygiene considerations

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

Colorless liquid.

Physical state

Liquid.

Form

Liquid.

Color

Colorless

Odor

Gasoline.

pH

Neutral

Melting point/freezing point

< -76 °F (< -60 °C)

Initial boiling point and boiling range

-4 °F (-20 °C) at 1 atmosphere

Flash point

-40.0 °F (-40.0 °C) Pensky-Martens Closed Cup

Evaporation rate

> 8

Flammability (solid, gas)

Not relevant.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

1.4 %

Flammability limit - upper (%)

7.6 %

Vapor pressure

240 kPa at 37.8°C

Vapor density

3.9 at 15°C

Relative density

0.62 - 0.88 g/cm³

Relative density temperature

59 °F (15 °C)

Solubility(ies)

Solubility (water)

0.1 - 1 %

Partition coefficient (n-octanol/water)

3 estimated

Auto-ignition temperature

536 °F (280 °C)

Decomposition temperature

Not relevant

Viscosity

0.4 - 0.9 cSt

Viscosity temperature

104 °F (40 °C)

Other information

Bulk density	2.5 - 5.8 lbs/gal
Flammability	(Gas/Liquid)
VOC (Weight %)	100 %

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.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, sparks, and flame.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information**Information on likely routes of exposure**

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Prolonged or frequent inhalation of vapors in high concentrations may cause permanent damage to the nervous system, including the brain.
Skin contact	Prolonged or repeated contact may dry skin and cause irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Swallowing or vomiting of the liquid may result in aspiration into the lungs. May cause cancer. May cause genetic defects. Suspected of damaging fertility or the unborn child.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Components	Species	Test Results
Benzene (CAS 71-43-2)		
Acute		
<i>Inhalation</i>		
LC50	Mouse	9980 ppm 9980 ppm, 7 Hours
	Rat	43767 mg/m ³ , 4 Hours 13700 ppm, 4 Hours 10000 ppm, 7 Hours
<i>Oral</i>		
LD50	Mouse	4700 mg/kg
	Rat	3306 mg/kg
Ethylbenzene (CAS 100-41-4)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	18156 mg/kg 17.8 ml/kg
<i>Inhalation</i>		
LC50	Mouse	> 8000 ppm, 20 Minutes 35.5 mg/l
	Rat	55000 mg/m ³ 4000 ppm 55 mg/l
<i>Oral</i>		
LD50	Rat	3500 mg/kg

Components	Species	Test Results
Hexane (CAS 110-54-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5 ml/kg
<i>Inhalation</i>		
LC50	Mouse	48000 ppm, 4 Hours
	Rat	73860 ppm, 4 Hours
		> 5000 ppm, 24 Hours
		> 31.86 mg/l
<i>Oral</i>		
LD50	Rat	24 ml/kg
Natural gas (petroleum), raw liq. mix (CAS 64741-48-6)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 1900 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 4980 mg/m3
		> 4980 mg/m3, 4 Hours
		> 4970 mg/m3, 4 Hours
		> 4.96 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	> 4800 mg/kg
Skin corrosion/irritation	Prolonged or repeated contact may dry skin and cause irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not classified.	
Skin sensitization	Not classified.	
Germ cell mutagenicity	Suspected of causing genetic defects.	
Carcinogenicity	May cause cancer.	
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.	
NTP Report on Carcinogens		
Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Benzene (CAS 71-43-2)	Cancer	
Reproductive toxicity	Suspected of damaging the unborn child. Suspected of damaging fertility.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Further information	Symptoms may be delayed.	

12. Ecological information

Ecotoxicity Not expected to be harmful to aquatic organisms.

Components	Species	Test Results
Benzene (CAS 71-43-2)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
		8.76 - 15.6 mg/l, 48 hours

Components		Species	Test Results
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5.3 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Crustacea	EC50	Daphnia	2.1 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)	32 - 88 mg/l, 96 hours
		Fathead minnow (Pimephales promelas)	12.1 mg/l, 96 hours
Hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours

Persistence and degradability Not established.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Natural Gas Liquid	3 estimated
Benzene (CAS 71-43-2)	2.13
Ethylbenzene (CAS 100-41-4)	3.15
Hexane (CAS 110-54-3)	3.9

Mobility in soil Not available.

Other adverse effects Not established.

13. Disposal considerations

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.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Benzene (CAS 71-43-2) U019

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.

14. Transport information

DOT

UN number	UN1075
UN proper shipping name	Petroleum gases, liquefied
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Not available.
Special provisions	T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1075
UN proper shipping name	Petroleum gases, liquefied
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Not available.

IMDG

UN number UN1075
UN proper shipping name PETROLEUM GASES, LIQUEFIED
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant No.
EmS F-D*, S-U
Special precautions for user Not available.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Benzene (CAS 71-43-2)	Cancer Central nervous system Blood Aspiration Skin Eye respiratory tract irritation Flammability
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CERCLA Hazardous Substance List (40 CFR 302.4)

Benzene (CAS 71-43-2)	LISTED
Ethylbenzene (CAS 100-41-4)	LISTED
Hexane (CAS 110-54-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Benzene	71-43-2	<1
Ethylbenzene	100-41-4	<1
Hexane	110-54-3	<1

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Benzene (CAS 71-43-2)
 Ethylbenzene (CAS 100-41-4)
 Hexane (CAS 110-54-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

WARNING: This product contains chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Hexane (CAS 110-54-3)

US. New Jersey Worker and Community Right-to-Know Act

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Hexane (CAS 110-54-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Hexane (CAS 110-54-3)

US. Rhode Island RTK

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)
Hexane (CAS 110-54-3)

US. California Proposition 65**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Benzene (CAS 71-43-2)
Ethylbenzene (CAS 100-41-4)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision
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Issue date	24-July-2014
Revision date	24-July-2014
Version #	02
NFPA ratings	

**References**

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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