Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

1 Identification

· **Product identifier**

· **Trade name: Natural Gas Liquids**
· **CAS Number:**
64741-48-6

· **Other means of identification:** NGL, Y-Grade

· **Recommended use and restriction on use**
· **Recommended use:** Raw materials.
· **Restrictions on use:** No relevant information available.

· **Details of the supplier of the Safety Data Sheet**
· **Manufacturer/Supplier:**
Williams, Inc.
One Williams Center
Tulsa, OK 74172
USA
855-945-5762 (Toll-Free)
ehs@williams.com

· **Emergency telephone number:**
CHEMTREC
1-800-424-9300 (US/Canada)
+01 703-527-3887 (International)

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flam. Gas 1	H220	Extremely flammable gas.
Press. Gas	H280	Contains gas under pressure; may explode if heated.
Skin Irrit. 2	H315	Causes skin irritation.
Carc. 1B	H350	May cause cancer.
Repr. 2	H361	Suspected of damaging fertility or the unborn child.
STOT SE 3	H336	May cause drowsiness or dizziness.
STOT RE 2	H373	May cause damage to the nervous system through prolonged or repeated exposure.
Asp. Tox. 1	H304	May be fatal if swallowed and enters airways.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:**

GHS02 GHS04 GHS07 GHS08

· **Signal word:** Danger
· **Hazard statements:**
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

(Cont'd. on page 2)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 1)

H315 Causes skin irritation.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H336 May cause drowsiness or dizziness.
H373 May cause damage to the nervous system through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.

· **Precautionary statements:**

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P260 Do not breathe mist/vapors/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 If swallowed: Immediately call a poison center/doctor.
P331 Do NOT induce vomiting.
P302+P352 If on skin: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P405 Store locked up.
P410+P403 Protect from sunlight. Store in a well-ventilated place.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
64741-48-6 Natural gas (petroleum), raw liq. mix

· **Components:**

74-98-6	Propane Flam. Gas 1, H220 Press. Gas, H280 Simple Asphyxiant	<40%
142-82-5	Heptane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336	<30%
106-97-8	butane Flam. Gas 1, H220 Press. Gas, H280 Simple Asphyxiant	<25%

(Cont'd. on page 3)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 2)

78-78-4	isopentane Flam. Liq. 1, H224 Asp. Tox. 1, H304 STOT SE 3, H336	<15%
75-28-5	isobutane Flam. Gas 1, H220 Press. Gas, H280 Simple Asphyxiant	<10%
74-84-0	Ethane Flam. Gas 1, H220 Press. Gas, H280 Simple Asphyxiant	<10%
111-65-9	octane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336	<10%
109-66-0	pentane Flam. Liq. 2, H225 Asp. Tox. 1, H304 STOT SE 3, H336	<10%
110-54-3	n-hexane Flam. Liq. 2, H225 Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336 Eye Irrit. 2B, H320	<8%
107-83-5	Isohexane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336	<6%
124-18-5	decane Flam. Liq. 3, H226 Asp. Tox. 1, H304	<5%
111-84-2	nonane Flam. Liq. 3, H226 Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H335	<5%
96-14-0	3-methylpentane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336	<5%
75-83-2	2,2-dimethylbutane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315; STOT SE 3, H336	<5%
71-43-2	benzene Flam. Liq. 2, H225 Muta. 1B, H340; Carc. 1A, H350; STOT RE 1, H372; Asp. Tox. 1, H304 Skin Irrit. 2, H315; Eye Irrit. 2A, H319	<0.1%

(Cont'd. on page 4)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 3)

7783-06-4	Hydrogen sulfide / Hydrogen sulphide Flam. Gas 1, H220 Press. Gas, H280 Acute Tox. 2, H330	<0.01%

· **Additional information:**
For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **After inhalation:**
Supply fresh air.
Provide oxygen treatment if affected person has difficulty breathing.
If experiencing respiratory symptoms: Call a poison center/doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately remove any clothing soiled by the product.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
· **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
A person vomiting while lying on their back should be turned onto their side.
· **Most important symptoms and effects, both acute and delayed:**
Breathing difficulty
Dizziness
Coughing
Gastric or intestinal disorders when ingested.
Irritant to skin and mucous membranes.
Nausea in case of ingestion.
Headache
Acne
Disorientation
· **Danger:**
Vapors may cause drowsiness and dizziness.
Condition may deteriorate with alcohol consumption.
May be fatal if swallowed and enters airways.
Suspected of damaging fertility or the unborn child.
May cause cancer.
· **Indication of any immediate medical attention and special treatment needed:**
If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

(Cont'd. on page 5)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 4)

· **Extinguishing media**
· **Suitable extinguishing agents:**
Foam
Gaseous extinguishing agents
Carbon dioxide
Water fog / haze
Fire-extinguishing powder
· **For safety reasons unsuitable extinguishing agents:**
Water stream.
Water spray
· **Special hazards arising from the substance or mixture**
Highly flammable liquid and vapor.
Danger of receptacles bursting because of high vapor pressure if heated.
Hazardous gases may be released if heated above the decomposition point.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information:** Eliminate all ignition sources if safe to do so.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Isolate area and prevent access.
Wear protective equipment. Keep unprotected persons away.
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
Ensure adequate ventilation.
Keep away from ignition sources.
Particular danger of slipping on leaked/spilled product.
· **Environmental precautions**
Do not allow to enter sewers/ surface or ground water.
Prevent from spreading (e.g. by damming-in or oil barriers).
Report spills to authorities as required.
· **Methods and material for containment and cleaning up**
Allow to evaporate.
Absorb liquid components with non-combustible liquid-binding material.
Use spark-proof equipment.
Send for recovery or disposal in suitable receptacles.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling**
· **Precautions for safe handling:**

(Cont'd. on page 6)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 5)

Prevent formation of aerosols.
Avoid splashes or spray in enclosed areas.
Use only in well ventilated areas.

· **Information about protection against explosions and fires:**
Highly flammable liquid and vapor.
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Flammable gas-air mixtures may be formed in empty containers/receptacles.

· **Conditions for safe storage, including any incompatibilities**

· **Requirements to be met by storerooms and receptacles:**
Avoid storage near extreme heat, ignition sources or open flame.
Store in cool, dry conditions in well sealed receptacles.

· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.

· **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
110-54-3 n-hexane	
PEL (USA)	Long-term value: 1800 mg/m³, 500 ppm
REL (USA)	Long-term value: 180 mg/m³, 50 ppm
TLV (USA)	Long-term value: 176 mg/m³, 50 ppm Skin; BEI
EL (Canada)	Long-term value: 20 ppm Skin
EV (Canada)	Long-term value: 176 mg/m³, 50 ppm
LMPE (Mexico)	Long-term value: 50 ppm PIEL, IBE
142-82-5 Heptane	
PEL (USA)	Long-term value: 2000 mg/m³, 500 ppm
REL (USA)	Long-term value: 350 mg/m³, 85 ppm Ceiling limit value: 1800* mg/m³, 440* ppm *15-min
TLV (USA)	Short-term value: 2050 mg/m³, 500 ppm Long-term value: 1640 mg/m³, 400 ppm
EL (Canada)	Short-term value: 500 ppm Long-term value: 400 ppm
EV (Canada)	Short-term value: 2045 mg/m³, 500 ppm Long-term value: 1635 mg/m³, 400 ppm
LMPE (Mexico)	Short-term value: 500 ppm Long-term value: 400 ppm

(Cont'd. on page 7)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 6)

106-97-8 butane	
REL (USA)	Long-term value: 1900 mg/m³, 800 ppm
TLV (USA)	Short-term value: 2370 mg/m³, 1000 ppm (EX)
EL (Canada)	Short-term value: 1000 ppm EX
EV (Canada)	Long-term value: 800 ppm revoked as of 01/01/18
LMPE (Mexico)	Long-term value: 1000 ppm
78-78-4 isopentane	
PEL (USA)	Long-term value: 2950 mg/m³, 1000 ppm
TLV (USA)	Long-term value: 2950 mg/m³, 1000 ppm
EL (Canada)	Long-term value: 1000 ppm
EV (Canada)	Short-term value: 2,210 mg/m³, 750 ppm Long-term value: 1,770 mg/m³, 600 ppm
LMPE (Mexico)	Long-term value: 600 ppm
75-28-5 isobutane	
TLV (USA)	Short-term value: 2370 mg/m³, 1000 ppm (EX)
EL (Canada)	Short-term value: 1000 ppm EX
EV (Canada)	Long-term value: 800 ppm revoked as of 01/01/18
LMPE (Mexico)	Long-term value: 1000 ppm
74-84-0 Ethane	
TLV (USA)	Refer to Appendix F in TLVs & BEIs book; (D, EX)
EL (Canada)	simple asphyxiant; EX
EV (Canada)	Long-term value: 1,000 ppm revoked as of 01/01/18
LMPE (Mexico)	Long-term value: 1000 ppm
111-65-9 octane	
PEL (USA)	Long-term value: 2350 mg/m³, 500 ppm n-Octane only
REL (USA)	Long-term value: 350 mg/m³, 75 ppm Ceiling limit value: 1800* mg/m³, 385* ppm *15 min
TLV (USA)	Long-term value: 1401 mg/m³, 300 ppm
EL (Canada)	Long-term value: 300 ppm
EV (Canada)	Short-term value: 1,750 mg/m³, 375 ppm Long-term value: 1,400 mg/m³, 300 ppm
LMPE (Mexico)	Long-term value: 300 ppm
74-98-6 Propane	
PEL (USA)	Long-term value: 1800 mg/m³, 1000 ppm

(Cont'd. on page 8)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 7)

REL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
TLV (USA)	refer to Appendix F inTLVs&BEIs book; D, EX
EL (Canada)	Simple asphyxiant; EX
EV (Canada)	Long-term value: 1,000 ppm revoked as of 01/01/18
LMPE (Mexico)	Long-term value: 1000 ppm
107-83-5 Isohexane	
REL (USA)	Long-term value: 350 mg/m³, 100 ppm Ceiling limit value: 1800* mg/m³, 510* ppm *15-min
TLV (USA)	Short-term value: 3500 mg/m³, 1000 ppm Long-term value: 1760 mg/m³, 500 ppm
EL (Canada)	Long-term value: 200 ppm
LMPE (Mexico)	Short-term value: 1000 ppm Long-term value: 500 ppm
111-84-2 nonane	
REL (USA)	Long-term value: 1050 mg/m³, 200 ppm
TLV (USA)	Long-term value: 1050 mg/m³, 200 ppm
EL (Canada)	Long-term value: 200 ppm
EV (Canada)	Long-term value: 1,050 mg/m³, 200 ppm
LMPE (Mexico)	Long-term value: 200 ppm
96-14-0 3-methylpentane	
REL (USA)	Long-term value: 350 mg/m³, 100 ppm Ceiling limit value: 1800* mg/m³, 510* ppm *15-min
TLV (USA)	Short-term value: 3500 mg/m³, 1000 ppm Long-term value: 1760 mg/m³, 500 ppm
EL (Canada)	Long-term value: 200 ppm
LMPE (Mexico)	Short-term value: 1000 ppm Long-term value: 500 ppm
75-83-2 2,2-dimethylbutane	
REL (USA)	Long-term value: 350 mg/m³, 100 ppm Ceiling limit value: 1800* mg/m³, 510* ppm *15-min
TLV (USA)	Short-term value: 3500 mg/m³, 1000 ppm Long-term value: 1760 mg/m³, 500 ppm
EL (Canada)	Long-term value: 200 ppm
LMPE (Mexico)	Short-term value: 1000 ppm Long-term value: 500 ppm
7783-06-4 Hydrogen sulfide / Hydrogen sulphide	
PEL (USA)	Ceiling limit value: 20; 50* ppm *10-min peak; once per 8-hr shift
REL (USA)	Ceiling limit value: 15* mg/m³, 10* ppm *10-min

(Cont'd. on page 9)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 8)

TLV (USA)	Short-term value: 7 mg/m³, 5 ppm Long-term value: 1.4 mg/m³, 1 ppm
EL (Canada)	Ceiling limit value: 10 ppm
EV (Canada)	Short-term value: 15 ppm Long-term value: 10 ppm
LMPE (Mexico)	Short-term value: 5 ppm Long-term value: 1 ppm

· **Ingredients with biological limit values:**

110-54-3 n-hexane

BEI (USA)	0.4 mg/L Medium: urine Time: end of shift at end of workweek Parameter: 2.5-Hexanedione without hydrolysis

· **Exposure controls**

· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

· **Engineering controls:** Provide adequate ventilation.

· **Breathing equipment:**

Self-contained respiratory protective device should be used in case of large spills or leaks.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product.

· **Eye protection:**

Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

· **Body protection:** Wear appropriate protective clothing.

· **Limitation and supervision of exposure into the environment**
No relevant information available.

· **Risk management measures** No relevant information available.

9 Physical and chemical properties

(Cont'd. on page 10)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 9)

· Information on basic physical and chemical properties

· **Appearance:**	
Form:	Liquefied gas
Color:	Colorless
· **Odor:**	Gasoline-like or natural gas odor. May contain hydrogen sulfide, which has a rotten egg odor.
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Melting point/Melting range:**	Not determined.
· **Boiling point/Boiling range:**	Not determined.
· **Flash point:**	-73 °C (-99.4 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Auto-ignition temperature:**	Not determined.
· **Decomposition temperature:**	Not determined.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/ vapor mixtures are possible.
· **Explosion limits**	
Lower:	Not determined.
Upper:	Not determined.
· **Oxidizing properties:**	Not determined.
· **Vapor pressure at 37.8 °C (100 °F):**	7757-10343 mmHg (150-200 psia)
· **Density at 20 °C (68 °F):**	0.5-0.7 g/cm³ (4.17-5.84 lbs/gal) (Estimated Range)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Relative vapor density at 20 °C (68 °F):**	> 1 (air = 1)
· **Evaporation rate:**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Other information**	No relevant information available.

10 Stability and reactivity

· **Reactivity:** No data available for self-reactivity.
· **Chemical stability:** Stable under normal temperatures and pressures.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions**

(Cont'd. on page 11)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 10)

Highly flammable liquid and vapor.
Reacts with oxidizing agents.
Used empty containers may contain product gases which form explosive mixtures with air.
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.
Hazardous gases may be released if heated above the decomposition point.

· **Conditions to avoid**
Excessive heat.
Keep ignition sources away - Do not smoke.

· **Incompatible materials** Oxidizers

· **Hazardous decomposition products**
Under fire conditions only:
Carbon monoxide and carbon dioxide

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**		
7783-06-4 Hydrogen sulfide / Hydrogen sulphide		
Inhalative	LC50/4h	444 ppm (rat)
	LC50/4h	621 mg/m3 (rat)
71-43-2 benzene		
Oral	LD50	4,894 mg/kg (rat)
Inhalative	LC50/4h	9,980 mg/l (mouse)

· **Primary irritant effect:**

· **On the skin:** Irritant to skin and mucous membranes.

· **On the eye:** Based on available data, the classification criteria are not met.

· **Sensitization:** Based on available data, the classification criteria are not met.

· **IARC (International Agency for Research on Cancer):**		
71-43-2	benzene	1

· **NTP (National Toxicology Program):**		
71-43-2	benzene	K

· **OSHA-Ca (Occupational Safety & Health Administration):**	
71-43-2	benzene

· **Probable route(s) of exposure:**
Ingestion.
Inhalation.
Eye contact.
Skin contact.

· **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

· **Carcinogenicity:** May cause cancer.

· **Reproductive toxicity:** Suspected of damaging fertility or the unborn child.

· **STOT-single exposure:** May cause drowsiness or dizziness.

· **STOT-repeated exposure:** Based on available data, the classification criteria are not met.

· **Aspiration hazard:** May be fatal if swallowed and enters airways.

(Cont'd. on page 12)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 11)

12 Ecological information

· **Toxicity**
· **Aquatic toxicity** Toxic to aquatic life with long lasting effects.
· **Persistence and degradability** No relevant information available.
· **Bioaccumulative potential:** No relevant information available.
· **Mobility in soil:** No relevant information available.
· **Additional ecological information**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Contact waste processors for recycling information.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· **Uncleaned packagings**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1965 or UN3295
· **UN proper shipping name**	
· **DOT, IATA**	Hydrocarbon gas mixture, liquefied, n.o.s. (Propane, Butane) or Hydrocarbons, liquid, n.o.s.
· **ADR, IMDG**	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (PROPANE, BUTANE) or HYDROCARBONS, LIQUID, N.O.S.
· **Transport hazard class(es)**	

(Cont'd. on page 13)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 12)

· **DOT**

· **Class**	2.1 or 3
· **Label**	2.1 or 3

· **ADR**

· **Class**	2.1 2F or 3 F1
· **Label**	2.1 or 3

· **IMDG, IATA**

· **Class**	2.1 or 3
· **Label**	2.1 or 3

· **Packing group**

· **DOT, ADR, IMDG, IATA** None (gas) or I (BP < 35 °C) or II (BP >35 °C)

· **Environmental hazards** Product contains environmentally hazardous substances: Heptane

· **Marine pollutant:**

Yes

· **Special precautions for user** Warning: Flammable liquids or gases

· **Danger code (Kemler):** 21 or 33

· **EMS Number:** F-D, S-

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

15 Regulatory information

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

· **United States (USA)**

· **SARA**

· **Section 302 (extremely hazardous substances):**

Substance is not listed.

(Cont'd. on page 14)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: October 16, 2018 Revision: October 16, 2018

Trade name: Natural Gas Liquids

(Cont'd. of page 13)

· **Section 355 (extremely hazardous substances):**

7783-06-4	Hydrogen sulfide / Hydrogen sulphide

· **Section 313 (Specific toxic chemical listings):**

110-54-3	n-hexane

· **TSCA (Toxic Substances Control Act)**

Substance is listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

71-43-2	benzene

· **Chemicals known to cause developmental toxicity for females:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity for males:**

110-54-3	n-hexane
71-43-2	benzene

· **Chemicals known to cause developmental toxicity:**

71-43-2	benzene

· **EPA (Environmental Protection Agency):**

110-54-3	n-hexane	II
7783-06-4	Hydrogen sulfide / Hydrogen sulphide	I

· **IARC (International Agency for Research on Cancer):**

71-43-2	benzene	1

· **Canadian Domestic Substances List (DSL) (Substances not listed.):**

Substance is listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistant, Bio-accumulable, Toxic
vPvB: very Persistent and very Bioaccumulative
OSHA: Occupational Safety & Health Administration
Flam. Gas 1: Flammable gases – Category 1
Press. Gas: Gases under pressure – Compressed gas
Press. Gas: Gases under pressure – Dissolved gas
Flam. Liq. 1: Flammable liquids – Category 1
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 2: Acute toxicity – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2

(Cont'd. on page 15)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

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Trade name: Natural Gas Liquids

(Cont'd. of page 14)

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1A: Carcinogenicity – Category 1A
Carc. 1B: Carcinogenicity – Category 1B
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
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Safety Data Sheets, Individual Manufacturers

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