

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 08/05/2015

Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : 11 Components in Propane
Product code : SG-2012-02837

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Test gas/Calibration gas.

1.3. Details of the supplier of the safety data sheet

Air Liquide
2700 Post Oak Boulevard
Houston, TX 77056 - USA
T 1-800-819-1704
www.us.airliquide.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Gas 1	H220
Liquefied gas	H280
Acute Tox. 3 (Inhalation:gas)	H331
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Repr. 2	H361
STOT SE 3	H335
STOT SE 3	H336
STOT RE 2	H373

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02



GHS04



GHS06



GHS08



GHS07

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs (central nervous system) through prolonged or repeated exposure
CGA-HG04 - May form explosive mixtures with air

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P260 - Do not breathe gas
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, face protection, protective gloves, protective clothing
P284 - Wear respiratory protection. Consult respiratory device supplier's product information for the selection of the appropriate device.
P302+P352 - If on skin: Wash with plenty of water

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P307+P311 - If exposed: Call a poison center/doctor
P362 - 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
P403 - Store in a well-ventilated place
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG06 - Close valve after each use and when empty
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG14 - Approach suspected leak area with caution
CGA-PG18 - When returning cylinder, install leak tight valve outlet cap or plug
CGA-PG21 - Open valve slowly

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS-US classification
Propane	(CAS No) 74-98-6	24	Flam. Gas 1, H220 Liquefied gas, H280
n-Butane	(CAS No) 106-97-8	15	Flam. Gas 1, H220 Liquefied gas, H280
n-Pentane	(CAS No) 109-66-0	12	Flam. Liq. 2, H225 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
n-Hexane	(CAS No) 110-54-3	9	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
n-Heptane	(CAS No) 142-82-5	7	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Octane	(CAS No) 111-65-9	6	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
N-NONANE	(CAS No) 111-84-2	5	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336
UNDECANE	(CAS No) 1120-21-4	5	Flam. Liq. 4, H227 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
N-DECANE	(CAS No) 124-18-5	5	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Asp. Tox. 1, H304
TETRADECANE	(CAS No) 629-59-4	4	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
TRIDECANE	(CAS No) 629-50-5	4	Acute Tox. 1 (Inhalation), H330 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
DODECANE	(CAS No) 112-40-3	4	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Asp. Tox. 1, H304

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- | | |
|---------------------------------------|--|
| First-aid measures after inhalation | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply artificial respiration with bag or mask if breathing stopped. Get immediate medical advice/attention. |
| First-aid measures after skin contact | : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. |
| First-aid measures after eye contact | : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation occurs, seek medical attention. |
| First-aid measures after ingestion | : Ingestion is not considered a potential route of exposure. |

4.2. Most important symptoms and effects, both acute and delayed

- | | |
|--------------------------------------|--|
| Symptoms/injuries after inhalation | : May cause drowsiness or dizziness. May cause respiratory irritation. Toxic if inhaled. |
| Symptoms/injuries after skin contact | : Causes skin irritation. |
| Symptoms/injuries after eye contact | : Causes serious eye irritation. |
| Symptoms/injuries after ingestion | : Ingestion is not considered a potential route of exposure. |

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/injuries upon intravenous administration	: Not known.
Chronic symptoms	: Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs (central nervous system) through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: This product is flammable.
Explosion hazard	: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form flammable/explosive vapor-air mixture.
Reactivity	: None known.

5.3. Advice for firefighters

Firefighting instructions	: In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
Protection during firefighting	: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Ensure adequate ventilation.
------------------	--------------------------------

6.1.1. For non-emergency personnel

Protective equipment	: Wear protective equipment consistent with the site emergency plan.
Emergency procedures	: Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

6.1.2. For emergency responders

Protective equipment	: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emergency procedures	: Evacuate and limit access. Ventilate area. Remove ignition sources. Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering atmospheres of unknown contaminant concentration until proven to be safe.

6.2. Environmental precautions

Try to stop release if safe to do so.

6.3. Methods and material for containment and cleaning up

For containment	: Try to stop release if safe to do so.
Methods for cleaning up	: Dispose of this material and its container in accordance with local regulations.

6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Handle empty containers with care because residual vapors are flammable. In use, may form flammable vapor-air mixture.
Precautions for safe handling	: Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools.
Hygiene measures	: Do not eat, drink or smoke when using this product.

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store in well ventilated area. Store locked up.
Incompatible products	: None known.
Incompatible materials	: Oxidizing materials. Air.

7.3. Specific end use(s)

See Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

11 Components in Propane		
ACGIH	Not applicable	
OSHA	Not applicable	
n-Heptane (142-82-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
TETRADECANE (629-59-4)		
ACGIH	Not applicable	
OSHA	Not applicable	
TRIDECANE (629-50-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
n-Butane (106-97-8)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
OSHA	Not applicable	
Propane (74-98-6)		
ACGIH	ACGIH TWA (ppm)	1000 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	1800 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
n-Pentane (109-66-0)		
ACGIH	ACGIH TWA (ppm)	600 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	2950 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
n-Hexane (110-54-3)		
ACGIH	ACGIH TWA (ppm)	50 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	1800 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	500 ppm
Octane (111-65-9)		
ACGIH	ACGIH TWA (ppm)	300 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	2350 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	500 ppm
N-NONANE (111-84-2)		
ACGIH	Not applicable	

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

N-NONANE (111-84-2)	
OSHA	Not applicable
DODECANE (112-40-3)	
ACGIH	Not applicable
OSHA	Not applicable
UNDECANE (1120-21-4)	
ACGIH	Not applicable
OSHA	Not applicable
N-DECANE (124-18-5)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls	: Ensure exposure is below occupational exposure limits. Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Consider work permit system e.g. for maintenance activities. Alarm detectors should be used when toxic gases may be released.
Hand protection	: Wear working gloves when handling gas containers. 29 CFR 1910.138: Hand Protection.
Eye protection	: Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.
Skin and body protection	: Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing.
Respiratory protection	: Wear a respirator when performing non-routine tasks not limited to line breaking or sampling. Wear a respirator during routine operations if determined to be necessary during a process-specific review. Consult respirator suppliers' product information or their representatives for the selection of the appropriate respirator.
Thermal hazard protection	: None necessary during normal and routine operations.
Environmental exposure controls	: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.
Other information	: Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Clear, colorless gas.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: See Section 2.1 and 2.2
Explosion limits	: No data available
Explosive properties	: Without adequate ventilation formation of explosive mixtures may be possible.
Oxidizing properties	: None.
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Molecular mass	: Not applicable for gas-mixtures.
Relative gas density	: Heavier than air
Solubility	: No data available

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

Additional information	: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
------------------------	--

SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can form explosive mixture with air.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Oxidizing materials. Air.

10.6. Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation:gas: Toxic if inhaled.

11 Components in Propane	
ATE US (gases)	1114.134 ppmV/4h
n-Heptane (142-82-5)	
LC50 inhalation rat (ppm)	25126 ppm/4h
TRIDECANE (629-50-5)	
LC50 inhalation rat (ppm)	50.2 ppm/4h
ATE US (gases)	50.200 ppmV/4h
ATE US (vapors)	0.050 mg/l/4h
ATE US (dust, mist)	0.005 mg/l/4h
n-Butane (106-97-8)	
LC50 inhalation rat (mg/l)	658 g/m ³ (Exposure time: 4 h)
LC50 inhalation rat (ppm)	276789.28 ppm/4h
Propane (74-98-6)	
LC50 inhalation rat (mg/l)	658 mg/l/4h
LC50 inhalation rat (ppm)	282800 ppm/4h
n-Pentane (109-66-0)	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	364 g/m ³ (Exposure time: 4 h)
LC50 inhalation rat (ppm)	123317.17 ppm/4h
ATE US (dermal)	3000.000 mg/kg body weight
ATE US (gases)	123317.170 ppmV/4h
ATE US (vapors)	364.000 mg/l/4h
ATE US (dust, mist)	364.000 mg/l/4h

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

n-Hexane (110-54-3)	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
ATE US (dermal)	3000.000 mg/kg body weight
ATE US (gases)	48000.000 ppmV/4h
Octane (111-65-9)	
LC50 inhalation rat (mg/l)	118 g/m ³ (Exposure time: 4 h)
LC50 inhalation rat (ppm)	25260 ppm/4h
ATE US (gases)	25260.000 ppmV/4h
ATE US (vapors)	118.000 mg/l/4h
ATE US (dust, mist)	118.000 mg/l/4h
N-NONANE (111-84-2)	
LC50 inhalation rat (ppm)	3200 ppm/4h
ATE US (gases)	3200.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
DODECANE (112-40-3)	
LC50 inhalation rat (ppm)	5000 ppm/4h
ATE US (gases)	5000.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
UNDECANE (1120-21-4)	
ATE US (gases)	700.000 ppmV/4h
ATE US (vapors)	3.000 mg/l/4h
ATE US (dust, mist)	0.500 mg/l/4h
N-DECANE (124-18-5)	
LC50 inhalation rat (ppm)	8784.01 ppm/4h
ATE US (gases)	8784.010 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure) : May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : May cause damage to organs (central nervous system) through prolonged or repeated exposure.

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause drowsiness or dizziness. May cause respiratory irritation. Toxic if inhaled.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.
Symptoms/injuries upon intravenous administration : Not known.

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Chronic symptoms

: Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs (central nervous system) through prolonged or repeated exposure.

SECTION 12: Ecological information

12.1. Toxicity

n-Pentane (109-66-0)	
LC50 fish 1	9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
n-Hexane (110-54-3)	
LC50 fish 1	2.1 - 2.98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
Octane (111-65-9)	
EC50 Daphnia 1	0.38 mg/l (Exposure time: 48 h - Species: water flea)

12.2. Persistence and degradability

n-Butane (106-97-8)	
Persistence and degradability	No data available.
Propane (74-98-6)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

12.3. Bioaccumulative potential

n-Butane (106-97-8)	
Log Pow	2.89
Log Kow	Not applicable for gas-mixtures.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
Propane (74-98-6)	
Log Pow	2.36
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
n-Pentane (109-66-0)	
Log Pow	3.39
Octane (111-65-9)	
Log Pow	5.18

12.4. Mobility in soil

n-Butane (106-97-8)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Propane (74-98-6)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on ozone layer

: No known effects from this product.

Effect on the global warming

: No known ecological damage caused by this product.

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste treatment methods : Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into areas where there is a risk of forming an explosive mixture with air.
- Waste disposal recommendations : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

- Transport document description : UN3160 Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone C/D, 2.3
- UN-No.(DOT) : UN3160
- Proper Shipping Name (DOT) : Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone C/D
- Transport hazard class(es) (DOT) : 2.3 - Class 2.3 - Poisonous gas 49 CFR 173.115
- Hazard labels (DOT) : 2.3 - Poison gas
2.1 - Flammable gas



- DOT Packaging Non Bulk (49 CFR 173.xxx) : 304
- DOT Packaging Bulk (49 CFR 173.xxx) : 314;315
- DOT Symbols : G - Identifies PSN requiring a technical name
- DOT Special Provisions (49 CFR 172.102) : 3 - This material is poisonous by inhalation (see 171.8 of this subchapter) in Hazard Zone C (see 173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.
B14 - Each bulk packaging, except a tank car or a multi-unit-tank car tank, must be insulated with an insulating material so that the overall thermal conductance at 15.5 C (60 F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials must not promote corrosion to steel when wet.
- DOT Packaging Exceptions (49 CFR 173.xxx) : None
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : Forbidden
- DOT Vessel Stowage Location : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
- DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Additional information

- Other information : No supplementary information available.

ADR

- Transport document description : UN 3160 LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S., 2.3 (2.1), (B/D)
- Class (ADR) : 2 - Gases
- Hazard identification number (Kemler No.) : 263
- Classification code (ADR) : 2TF

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hazard labels (ADR)

: 2.3 - Toxic gases
2.1 - Flammable gases



Orange plates



Tunnel restriction code (ADR)

: B/D

Limited quantities (ADR)

: 0

Excepted quantities (ADR)

: E0

Transport by sea

UN-No. (IMDG)

: 3160

Proper Shipping Name (IMDG)

: Liquefied gas, toxic, flammable, n.o.s.

Class (IMDG)

: 2 - Gases

Air transport

UN-No. (IATA)

: 3160

Proper Shipping Name (IATA)

: Liquefied gas, toxic, flammable, n.o.s.

Class (IATA)

: 2

SECTION 15: Regulatory information

15.1. US Federal regulations

n-Butane (106-97-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Propane (74-98-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

n-Pentane (109-66-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag

T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

n-Hexane (110-54-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Subject to reporting requirements of United States SARA Section 313

SARA Section 313 - Emission Reporting

1.0 %

Octane (111-65-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

n-Butane (106-97-8)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas
Class B Division 1 - Flammable Gas

Propane (74-98-6)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas
Class B Division 1 - Flammable Gas

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

n-Pentane (109-66-0)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid
n-Hexane (110-54-3)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Octane (111-65-9)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

No additional information available

n-Butane (106-97-8)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Propane (74-98-6)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
n-Pentane (109-66-0)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
n-Hexane (110-54-3)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Octane (111-65-9)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

No additional information available

National regulations

n-Butane (106-97-8)	
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the Canadian IDL (Ingredient Disclosure List)	
Propane (74-98-6)	
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)	
n-Pentane (109-66-0)	
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the Canadian IDL (Ingredient Disclosure List)	

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

n-Hexane (110-54-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)

Octane (111-65-9)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

n-Butane (106-97-8)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Propane (74-98-6)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

n-Pentane (109-66-0)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

n-Hexane (110-54-3)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Octane (111-65-9)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes

: Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.

Other information

: This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

11 Components in Propane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases:

Acute Tox. 1 (Inhalation)	Acute toxicity (inhalation) Category 1
Acute Tox. 3 (Inhalation)	Acute toxicity (inhalation) Category 3
Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Asp. Tox. 1	Aspiration hazard Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Gas 1	Flammable gases Category 1
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids Category 3
Flam. Liq. 4	Flammable liquids Category 4
Liquefied gas	Gases under pressure Liquefied gas
Repr. 2	Reproductive toxicity Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H220	Extremely flammable gas
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H227	Combustible liquid
H280	Contains gas under pressure; may explode if heated
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H330	Fatal if inhaled
H331	Toxic if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

SDS US (GHS HazCom 2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Air Liquide America Corporation's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.