SDS	AUX SABLE™

NFPA Index:	SAFETY DATA SHEET PROPANE	NFPA Rating:
0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 – Severe		2 - Health 4 - Flammability 0 - Reactivity

SDS has been prepared in accordance with ANSI Standard Z400.1/Z129.1 5/28/2010, Globally Harmonized System for Classification and Labeling of Chemicals (GHS), and U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200)

SECTION I - Identification

Trade Name	Material Uses	Date Revised
PROPANE	Organic synthesis, household and industrial fuel, manufacture of ethylene, extractant, solvent, refrigerant, gas enricher, aerosol propellant, mixture for bubble chambers.	August 2016

Manufacturer/Supplier: Aux Sable Liquid Products
Morris, IL 60450

TELEPHONE	FACSIMILE	Emergency Telephone No.
815-941-5800	815-941-5801	CHEMTREC (U.S.) 800-424-9300 CHEMTREC (Intl.) 703-527-3887 CANUTECH (Canada) 613-996-6666

SECTION II - Hazards Identification

GHS Classification:

- Extremely flammable liquids and vapors (Category 1)
- Compressed gas OR
- Refrigerated liquefied gas; may cause cryogen burns or injury

Danger

Warning

SECTION II - Hazards Identification - Continued

Hazard statement(s)	Precautionary statement(s)
H220: Extremely flammable gas H224: Extremely flammable liquid and vapour	P202: Do not handle until all safety precautions have been read and understood.

H280: Contains gas under pressure; may explode if heated H281: Contains refrigerated gas; may cause cryogenic burns or injury H336: May cause drowsiness or dizziness May displace oxygen and cause rapid asphyxia	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P240: Ground/bond container and receiving equipment. P243: Take precautionary measures against static discharge. P261: Avoid breathing dust/fumes/gas/mist/vapours/spray. P280: Wear protective gloves/protective clothing/eye protection/face protection. P303+361+353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P371 + P380 + P375 in case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. P377: Leaking gas fire – do not extinguish unless leak can be stopped safely. P381: Eliminate all ignition sources if safe to do so.

SECTION III - Composition/Information on Ingredients

Common Chemical Name	**Trade Names and Synonyms**
Propane	LPG, Bottled gas, Dimethyl methane, n-Propane, Propyl hydride.

Ingredients:	**CAS. No.**	**Chemical Formula**	**Percent**
n-Propane	74-98-6	$CH_3CH_2CH_3$	100

SECTION IV - First Aid Measures

Inhalation: Move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. When breathing is difficult, properly trained personnel may assist the affected person by administering 100% oxygen. Keep the affected person warm and at rest. Get medical attention immediately.

Eyes: If eye tissue is frozen, seek medical attention immediately; if tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of water, remove contact lenses if present and easy to do – continue rinsing for at least 15 minutes, occasionally lifting the lower and upper eyelids Get medical attention immediately.

Skin: If frostbite has occurred, seek medical attention immediately; do NOT rub the affected areas or flush them with water. In order to prevent further tissue damage, do NOT attempt to remove frozen clothing from frostbitten areas.

If frostbite has NOT occurred, immediately and thoroughly flush the contaminated skin with water.

If this chemical penetrates the clothing, immediately remove the clothing and flush the skin with water.

If irritation persists after washing, get medical attention.

Ingestion:-Ingestion of this chemical in a gaseous form is unlikely. Ingestion of liquid can cause frostbite. Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway and loosen tight clothing.

Advice to Physicians

Treat symptomatically for lung or eye irritation if present, frostbite or asphyxiation.

SECTION V - Fire Fighting Measures

Extinguishing Media Water fog, carbon dioxide or dry chemical.	**Flammability Classification** Flammable gas.
Unsuitable Media High volume water jet.	**Ignition in Air** Will ignite if exposed to open sparks, flame or sufficient heat.

Fire Fighting Procedure
If possible without risk, shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with powder, carbon dioxide. Cool containers with water spray.

Protective Equipment Standard personal protective equipment for structural firefighting.	**Unusual Fire Hazards** See Section II.

SECTION VI - Accidental Release Measures

Personal Precautions
If a leak occurs, FIRST REMOVE ALL SOURCES OF IGNITION, then the main valve should be turned off and all personnel evacuated. Do not reenter the contaminated area until verifying that the area has been ventilated.

Spill Cleanup Measures Isolate the area until gas has dispersed. No smoking, flames/flares in area! Keep unnecessary people away.	**US DOT Emergency Response Guide:** 115

Environmental Precautions
None

SECTION VII - Handling and Storage

Handling & Storage Precautions
Handling: This compound is extremely flammable and vapors may travel long distances to a point of ignition and then flash back. It is an asphyxiant and narcotic in high concentrations. When heated to decomposition it emits acrid smoke and toxic fumes of carbon monoxide and unidentified organic compounds.
Storage: Observe all federal, state & local Regulations when storing this substance. Store away from incompatible substances. Keep away from all ignition sources. Store at ambient temperatures.

Hygienic Practices
Wash thoroughly after handling. Contact lenses should not be worn.

Special Precautions
Keep away from sources of ignition.

SECTION VIII - Exposure Controls/Personal Protection

Inhalation Standards	OSHA-PEL	ACGIH-TLV	NIOSH-REL	NIOSH-IDLH
Propane (as aliphatic hydrocarbon gases, Alkane C_1-C_4)	1000 ppm	None	1000 ppm	2100 ppm [10%LEL].

Eye-Face Protection: Safety glasses with side shields or goggles recommended to prevent eye contact.	**Skin Protection:** Will cause frostbite, protect skin from contact	**Protective Clothing:** Wear appropriate clothing to prevent frostbite, such as cold insulating gloves.

Respiratory Protection:
NIOSH approved respirator recommended for concentrations above applicable exposure limit. Positive pressure supplied air breathing apparatus should be used in unknown air concentrations.

Engineering Controls:
Use in well-ventilated area away from sources of ignition. DO NOT ENTER CONFINED SPACES UNLESS ADEQUATELY VENTILATED.

Other Protective Measures:
Prevent skin and eye contact.

SECTION IX - Physical and Chemical Properties

Appearance: Colorless gas	**Odor:** Odorless [Note: A foul-smelling odorant is often added when used for fuel purposes]	**Odor Threshold:** Not applicable	**pH:** Not applicable
Melting Point/Freezing Point: – 188^{o} C (– 306^{o} F)	**Initial Boiling Point:** – 42^{o} C (– 44^{o} F)	**Flash Point:** – 104^{o} C (– 156^{o} F)	**Evaporation Rate:** Does not apply (gas)
Flammability: Category 1	**Upper/Lower Explosive Limits:** **UEL:** 9.5% **LEL:** 2.1%	**Vapor Pressure:** 7150 mm Hg @ 25^{o} C (77^{o} F)	**Vapor Density:** 1.56 @ 0^{o} C (Air= 1)
Solubility: 62.4 ppm @ 25^{o} C (77^{o} F)	**Partition Coefficient:** log Kow= 2.36	**Autoignition Temperature:** 450^{o} C (842^{o} F)	**Decomposition Temperature:** 450^{o} C (autoignition)
Viscosity: 8.3 uPa.s	**Relative Density**: 0.49 @ 25^{o} C (77^{o} F)	**Ionization Energy:** 11.07 eV	**Critical Temperature/ Pressure** 153^{o} C (307° F) & 3620 kPa (525 psi)

SECTION X - Stability and Reactivity

Reactivity: Stable	**Chemical Stability:** Stable	**Hazardous Polymerization:** None
Conditions to Avoid: None	**Incompatible Materials:** Strong oxidizers (e.g., nitrates & perchlorates), chlorine, fluorine, (nickel carbonyl + oxygen)	**Hazardous Decomposition:** Carbon monoxide, carbon dioxide

SECTION XI - Toxicological Information

Routes of Exposure: Inhalation, eye and skin contact.	**Acute Inhalation Effect:** Exposure above exposure limits may cause anesthetic effect, and dizziness. Exposures over 1% will cause asphyxiation.	**Acute Ingestion Effect:** None expected.
Acute Eye Effect: May cause frostbite w/redness, pain & blurred vision	**Acute Skin Effect:** May cause frostbite w/redness, tingling & pain/numb. Skin may become hard & white & develop blisters	
Chronic Inhalation Effect: None Expected		
Chronic Ingestion Effect: None expected.	**Chronic Eye Effect:** None expected.	**Chronic Skin Effect**: None expected.
Sensitization to Material: None expected.	**Medical Conditions Aggravated:** Dermatitis.	**Synergistic Materials:** None expected.
Mutagenicity: Negative Per Ames Test (Salmonella Typhimurium).	**Reproductive Toxicity:** None known.	**Teratogenicity:** None known.
Carcinogenicity: **Listed by IARC:** - No **Listed by NTP:** - No **Listed by OSHA:** - No		
LD_{50} for Material:	**LC_{50} for Material:**	

Not applicable	658 g/m^3/4 Hours (rat)

SECTION XII - Ecological Information

Mobility	**Persistence/Degradability**	**Bio-Accumulation**
Medium in soil	Insignificant	Insignificant

Ecotoxicity
No Data

SECTION XIII - Disposal Considerations

Disposal Information
Dispose of in accordance with federal, local, and with other necessary technical regulations following consultation with waste expert(s) and the responsible authorities.

SECTION XIV - Transport Information

US DOT Proper shipping description:

UN1075, Liquefied petroleum gas, 2.1

SECTION XV - Regulatory Information

National Registries: Propane, CAS No. 74-98-6
Canada: CEPA, Canadian Environmental Protection Act, 6th Amendment, Domestic Substance List, CAS No. 74-98-6.
United States: TSCA, Toxic Substance Control Act, CAS No. 74-98-6.

U.S. Clean Air Act, 1990
Propane is not a Class I or Class II ozone depleting chemical as defined in the Clean Air Act of 1990.

U.S. SARA Title III and CERCLA
SARA Section 311/312 hazard categories
Immediate (acute) health hazard: YES
Delayed (chronic) health hazard: NO
Fire hazard: YES
Sudden release of pressure hazard: YES
Reactive hazard: NO

SECTION XVI - Other Information

Date of preparation – August 2016
Changes made to previous revision – Safety data sheet GHS Classification has been updated.

Key/legend to abbreviations and acronyms used –

ACGIH = American Conference of Government Industrial Hygienists
g/m^3 = grams per cubic meter
C = Celsius
F = Fahrenheit
IARC = International Agency for Research on Cancer
IDLH = Immediately dangerous to life or health
LC_{50} = Lethal concentration – 50%
LD_{50} = Lethal dose – 50%
LEL = Lower explosive limit
mg/kg = milligram per kilogram
NIOSH = National Institute for Occupational Safety and Health
NTP = National Toxicology Program
PEL = Permissible exposure limit
ppm = Parts per million
STEL = Short term exposure limit
TLV = Threshold Limit Value
UEL = Upper explosive limit

Reference Sources Used:

Sax, Irving N. & Lewis Sr., Richard J. *Dangerous Properties of Industrial Materials*, 8th Edition.
ACGIH, Guide to Occupational Exposure Values, 2016
US Dept. Health And Human Services National Toxicology Program
Toxnet.com
DOT Emergency Response Guidebook, 2016
NIOSH Pocket Guide to Hazardous Chemicals, Online Version
The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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