

SAFETY DATA SHEET

1. Identification

Product identifier Liquefied Natural Gas (LNG)

Other means of identification None.

Recommended use Energy.

Recommended restrictions Uses other than the recommended use.

Manufacturer/Importer/Supplier/Distributor information

Company Name JAX LNG

Manufacturer/Supplier 9225 Dames Point Rd Address Jacksonville, FL 32226

United States

(toll free) 833-368-0462

Telephone number

Contact person Pivotal LNG

Email info@pivotallng.com
Emergency telephone 205-661-8142

number

2. Hazard(s) identification

Physical hazards Flammable gases Category 1

Gases under pressure Refrigerated liquefied gas

Health hazards Not classified.

OSHA defined hazards Simple asphyxiant

Label elements



Signal word Danger

Hazard statement Extremely flammable gas. Contains gas under pressure; may explode if heated. Contains

refrigerated gas; may cause cryogenic burns or injury. May displace oxygen and cause rapid

suffocation.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only with adequate

ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Wear

cold insulating gloves/face shield/eye protection.

Response Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition

sources if safe to do so. Thaw frosted parts with lukewarm water. Do not rub affected area. Get

medical advice/attention.

Storage Keep container tightly closed. Protect from sunlight. Store in a well-ventilated place.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise

classified (HNOC)

None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Methane	74-82-8	88 - 98.5

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Ethane	74-84-0	3 - 11
Propane	74-98-6	0.3 - 0.8
Nitrogen	7727-37-9	0.1 - < 0.2
Isobutane	75-28-5	≤ 0.1
Butane	106-97-8	< 0.1
Oxygen	7782-44-7	< 0.1
Dimethylpropane	463-82-1	< 0.1
Carbon dioxide	124-38-9	< 0.1

Composition comments

Gas concentrations are in percent by volume. The most conservative composition ranges are provided. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. Move to fresh air. Get medical attention immediately.

Skin contact

Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. In case of cold burns (frostbite), soak in tepid water and get medical attention.

Eye contact

Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. If frostbite occurs, immediately flush eyes with plenty of warm water (not exceeding 105°F/41°C) for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops and persists.

Ingestion

Not likely, due to the form of the product.

Most important symptoms/effects, acute and delayed

Headache. Dizziness. Fatigue. Nausea, vomiting. Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themself.

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. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Use fire-extinguishing media appropriate for surrounding materials. Do not extinguish burning gas if flow cannot be shut off immediately.

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

May form explosive mixtures with air. Gas may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed. Combustion products may include: Carbon oxides.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Do not extinguish a leaking gas fire unless leak can be stopped. In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. Use water spray to cool unopened containers. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods

General fire hazards

Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.

Extremely flammable gas. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

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SDS US

6. Accidental release measures

Personal precautions. protective equipment and emergency procedures

In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. For waste disposal, see section 13 of the SDS.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. All equipment used when handling the product must be grounded. Take precautionary measures against static discharges. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Close valve after each use and when empty. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Purge air from system before introducing gas. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.

Avoid any uncontrolled release, venting or prolonged exposure. Do not enter storage areas or confined spaces unless adequately ventilated. Use only outdoors or in a well-ventilated area. Oxygen concentration should not fall below 19.5 % at sea level (pO2 = 135 mmHg). Mechanical ventilation or local exhaust ventilation may be required. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Stored containers should be periodically checked for general condition and leakage. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

Components	r Contaminants (29 CFR 1910.1 Type	, Value	
Carbon dioxide (CAS 124-38-9)	PEL	5000 ppm	
Propane (CAS 74-98-6)	PEL	1800 mg/m3	
		1000 ppm	
US. ACGIH Threshold Limit Value	es		
Components	Туре	Value	
Butane (CAS 106-97-8)	STEL	1000 ppm	
Carbon dioxide (CAS 124-38-9)	STEL	30000 ppm	
	TWA	5000 ppm	
Dimethylpropane (CAS 463-82-1)	TWA	1000 ppm	
Isobutane (CAS 75-28-5)	STEL	1000 ppm	
US. NIOSH: Pocket Guide to Che	mical Hazards		
Components	Туре	Value	
Butane (CAS 106-97-8)	TWA	1900 mg/m3	

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US. NIOSH	: Pocket	Guide to	Chemical	Hazards
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Components	Туре	Value	
		800 ppm	
Carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3	
,		30000 ppm	
	TWA	9000 mg/m3	
		5000 ppm	
Isobutane (CAS 75-28-5)	TWA	1900 mg/m3	
		800 ppm	
Propane (CAS 74-98-6)	TWA	1800 mg/m3	
		1000 ppm	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Use explosion-proof equipment. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear one or more of the following depending on hazard of task: safety glasses, goggles,

faceshield.

Skin protection

Hand protection Suitable gloves can be recommended by the glove supplier. Depending on the task, chemically

resistant (exposure to gas), and/or thermally insulated (exposure to liquefied gas) gloves are

recommended.

Other Wear suitable protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Use a positive-pressure

air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate

protection. Check with respiratory protective equipment suppliers.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. 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

Physical state Gas.

Form Compressed liquefied gas.

Clear, colorless liquid.

Color Colorless.

Odor Odorless.

Odor threshold Not available.

pH Not applicable.

Melting point/freezing point Not available.

Initial boiling point and boiling -260 °F (-162.2 °C)

range

Flash point -45.0 °F (-42.8 °C)
Evaporation rate Moderately fast.
Flammability (solid, gas) Flammable gas.

Upper/lower flammability or explosive limits

Flammability limit - lower

1.4 %

(%)

Flammability limit - upper 7.6 %

(%)

Vapor pressure 5600 psi (53.6 °F (12 °C))

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Vapor density 0.55 (70 °F (21.11 °C))

Relative density 0.47

Solubility(ies)

Solubility (water) < 0.1 % Insoluble (in water).

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature 536 °F (280 °C) **Decomposition temperature** Not available. **Viscosity**

Not available.

Other information

Explosive properties Not explosive. Oxidizing properties Not oxidizing.

10. Stability and reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport. Reactivity

Chemical stability Material is stable under normal conditions.

Possibility of hazardous

reactions

No dangerous reaction known under conditions of normal use.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with Conditions to avoid

incompatible materials. Do not cut, weld, braze, solder, drill, grind or expose containers to heat or

sources of ignition.

Strong oxidizing agents. Incompatible materials

Hazardous decomposition

products

Decomposition is not expected under normal conditions of use and storage. In the event of fire:

See Section 5.

11. Toxicological information

Information on likely routes of exposure

Inhalation Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen

below safe breathing levels. Prolonged inhalation may be harmful.

Skin contact Contact with evaporating liquid may cause frostbite or freezing of skin. Direct contact with liquefied gas may cause eye damage from frostbite. Eye contact

Ingestion Not likely, due to the form of the product.

Symptoms related to the physical, chemical and toxicological characteristics Headache. Dizziness. Fatigue. Nausea, vomiting. Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly

that victim may be unable to protect themself.

Information on toxicological effects

Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen **Acute toxicity**

below safe breathing levels.

Components **Species Test Results**

Butane (CAS 106-97-8)

Acute

Inhalation

LC50 Rat 658 mg/l, 4 Hours

Propane (CAS 74-98-6)

Acute

Gas

Inhalation

LC50

Rat > 80000 ppm, 15 Minutes

Skin corrosion/irritation Gas is not likely to cause irritation. Contact with liquefied gas might cause frostbites, in some

cases with tissue damage.

Serious eye damage/eye

irritation

Direct contact with liquefied gas may cause eye damage from frostbite.

Liquefied Natural Gas (LNG) SDS US 954182 Version #: 02 5 / 10 Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicityNo data available to indicate product or any components present at greater than 0.1% are

mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicityThis product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity -

single exposure

Not classified.

Specific target organ toxicity -

repeated exposure

Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. High concentrations, prolonged or repeated exposure: May

cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness,

fatigue) and/or damage.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the

possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components Species Test Results

Butane (CAS 106-97-8)

Aquatic

Fish LC50 Freshwater fish 24.11 mg/l, 96 Hours

Persistence and degradability

No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Butane (CAS 106-97-8)	2.89
Dimethylpropane (CAS 463-82-1)	3.11
Ethane (CAS 74-84-0)	1.81
Isobutane (CAS 75-28-5)	2.76
Methane (CAS 74-82-8)	1.09
Nitrogen (CAS 7727-37-9)	0.67
Propane (CAS 74-98-6)	2.36

Mobility in soil Not relevant, due to the form of the product. Highly volatile, will partition rapidly to air.

Other adverse effects

The product contains volatile organic compounds which have a photochemical ozone creation

potential.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of

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

Local disposal regulationsDispose in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F

The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused

products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see:

Disposal instructions).

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

emptied. Empty containers should be taken to an approved waste handling site for recycling or

disposal.

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14. Transport information

DOT

UN number UN1972

UN proper shipping name Natural gas, refrigerated liquid

Transport hazard class(es)

Class 2.1
Subsidiary risk Label(s) 2.1
Packing group -

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisionsT75, TP5Packaging exceptionsNonePackaging non bulkNonePackaging bulk318

IATA

UN number UN1972

UN proper shipping name Natural gas, refrigerated liquid

Transport hazard class(es)

Class 2.1
Subsidiary risk Packing group Environmental hazards No.
ERG Code 10L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1972

UN proper shipping name NATURAL GAS, REFRIGERATED LIQUID

Transport hazard class(es)

Class 2.1
Subsidiary risk Packing group Environmental hazards

Marine pollutant No. EmS \underline{F} - \underline{D} , S-U

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to

Not applicable.

Annex II of MARPOL 73/78 and the IBC Code

General information

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: Ensure that containers are firmly secured. Ensure cylinder valve is closed and not leaking. Ensure valve outlet cap nut or plug (where provided) is correctly fitted. Ensure valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Butane (CAS 106-97-8)

Dimethylpropane (CAS 463-82-1)

Ethane (CAS 74-84-0)

Isobutane (CAS 75-28-5)

Methane (CAS 74-82-8)

Propane (CAS 74-98-6)

Listed.

Listed.

Listed.

Listed.

SARA 304 Emergency release notification

Not regulated.

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OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

All components of the mixture on the TSCA 8(b) inventory are designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Yes

chemical

Classified hazard Flammable (gases, aerosols, liquids, or solids)

categories

Gas under pressure Simple asphyxiant

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

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

Butane (CAS 106-97-8)

Dimethylpropane (CAS 463-82-1)

Ethane (CAS 74-84-0)

Isobutane (CAS 75-28-5)

Methane (CAS 74-82-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act

Not regulated.

(SDWA)

US state regulations

US. Massachusetts RTK - Substance List

Butane (CAS 106-97-8)

Carbon dioxide (CAS 124-38-9)

Dimethylpropane (CAS 463-82-1)

Ethane (CAS 74-84-0)

Isobutane (CAS 75-28-5)

Methane (CAS 74-82-8)

Nitrogen (CAS 7727-37-9)

Oxygen (CAS 7782-44-7)

Propane (CAS 74-98-6)

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

Butane (CAS 106-97-8)

Carbon dioxide (CAS 124-38-9)

Dimethylpropane (CAS 463-82-1)

Ethane (CAS 74-84-0)

Isobutane (CAS 75-28-5)

Methane (CAS 74-82-8)

Nitrogen (CAS 7727-37-9)

Oxygen (CAS 7782-44-7)

Propane (CAS 74-98-6)

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

Butane (CAS 106-97-8)

Carbon dioxide (CAS 124-38-9)

Dimethylpropane (CAS 463-82-1)

Ethane (CAS 74-84-0)

Isobutane (CAS 75-28-5)

Methane (CAS 74-82-8)

Nitrogen (CAS 7727-37-9)

Oxygen (CAS 7782-44-7)

Propane (CAS 74-98-6)

US. Rhode Island RTK

Butane (CAS 106-97-8)

Carbon dioxide (CAS 124-38-9)

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Ethane (CAS 74-84-0) Methane (CAS 74-82-8) Nitrogen (CAS 7727-37-9) Oxygen (CAS 7782-44-7) Propane (CAS 74-98-6)

California Proposition 65



WARNING: This product can expose you to n-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

On inventory (yes/no)*

Yes

Yes

California Proposition 65 - CRT: Listed date/Male reproductive toxin

Inventory name

n-Hexane (CAS 110-54-3) Listed: December 15, 2017

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Butane (CAS 106-97-8)

Dimethylpropane (CAS 463-82-1)

Isobutane (CAS 75-28-5)

International Inventories

Country(s) or region

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)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

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

Taiwan Chemical Substance Inventory (TCSI)

Toxic Substances Control Act (TSCA) Inventory

16. Other information, including date of preparation or last revision

Issue date13-May-2020Revision date13-May-2020

Version # 02

United States & Puerto Rico

Further information HMIS Rating:

G - Safety Glasses, Gloves, Vapor Respirator

NFPA Ratings:

SA - Simple Asphyxiant

HMIS® ratings Health: 2

Flammability: 4 Physical hazard: 2 Personal protection: H

NFPA ratings

Taiwan



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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).

Disclaimer

Pivotal LNG and JAX LNG cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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