

Section 1: Product and Company Identification

Manufacturer: Kern Energy – 7724 East Panama Lane – Bakersfield – CA 93307-9210
(661) 845-0761 – sds@KernEnergy.com – www.KernEnergy.com

Chemical Name: Mixture of Petroleum Hydrocarbons
Chemical Family: Aliphatic Hydrocarbons
Trade Name: Mixed LPG
Synonyms: Propane Butane Mixture
Recommended Uses: Mixed LPG Fuel
CAS #: 68476-85-7
RTECS #: SE7545000
SDS Number: KOP050
SDS Date: September 30, 2022

CHEMTREC (800) 424-9300
or (703) 527-3887
POISON CONTROL CENTER
(800) 346-5922

Section 2: Hazard Identification

Signal Word: **DANGER**
Pictograms: Flammable Gas - Gases Under Pressure (Liquified Gas)



Physical Hazards: Extremely flammable gas. Contains gas under pressure, may explode if heated.

Health Hazards: Skin Corrosion/Irritation – Category 2 - Causes skin irritation.
Eye Damage/Irritation – Category 1 - Causes serious eye damage.

Precautionary Statements:

Prevention: Keep away from heat, sparks, open flames and hot surfaces. No smoking. Stop leak if it is safe to do so. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if it is safe to do so. Do not handle until all safety precautions have been read and understood. Wear protective clothing such as gloves, goggles, and face shield if needed to prevent skin and eye contact. Avoid breathing gas.

Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product.

Response: **In case of fire:** Leaking gas fire - do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. **If inhaled:** This product is classified as a simple asphyxiant. Remove person to fresh air and keep comfortable for breathing. Seek medical attention if you feel unwell. **If on skin:** Wash with plenty of water. See First Aid on this label for specific treatment. If skin irritation occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. **If in eyes:** Direct contact with liquid propane can result in eye burns. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. **If exposed or concerned:** Immediately get medical attention. Do NOT induce vomiting.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/containers in accordance with local, state and national regulations.

HNOC:* None Known

Supplemental Info: NFPA Rating: (Scale 0-4) Health = 2, Fire = 4, Reactivity = 0
HMIS Rating: Fire 4, Health 2, Physical 0

* Hazard(s) not otherwise classified or not covered by GHS.

Section 3: Composition / Information on Ingredients

| Component | CAS No. | Percent |
|------------|----------|---------|
| Propane | 74-98-6 | 40-50% |
| n-Butane | 106-97-8 | 30-40% |
| Isobutane | 75-28-5 | 15-25% |
| Isopentane | 78-78-4 | 0-2 |

Section 4: First Aid Measures

Eye Contact: If eye tissue is frozen, seek medical attention immediately; if tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of warm water for at least 15 minutes, occasionally lifting the lower and upper eyelids to ensure that all surfaces are flushed thoroughly. If irritation, pain, swelling, lacrimation, or photophobia persists, get medical attention as soon as possible.

Skin Contact: If frostbite has occurred, seek medical attention immediately; do NOT rub the affected areas. 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 wash contaminated skin with soap and water.

Ingestion: Ingestion is not considered to be likely. If swallowed, obtain medical attention.

Inhalation: If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Give oxygen. Keep the affected person warm and at rest. Get medical attention as soon as possible.

Section 5: Fire Fighting Measures

Caution – This product has a very low flash point. Using a water spray when fighting fire may be inefficient.

Small Fire: Dry chemical, CO₂, water spray or foam.

Large Fires:

- Do not extinguish a leaking gas flame until the leak can be stopped. In many cases, it will be preferable to allow continued burning.
- Use water spray or fog - do not use straight streams.
- Move containers from fire area if you can do so without risk.

Fire Involving Tanks or Tank Car / Truck Trailer Loads:

- Do not extinguish a leaking gas flame until the leak can be stopped. In many cases, it will be preferable to allow continued burning.
- Fight fire from a maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of hissing sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fires, use unmanned hose holders or monitor nozzles. If this is impossible, withdraw from the area and let the fire burn.

Fire Fighting Equipment/Instructions: Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full face piece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For large fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied firefighting foam.

Special protective equipment for fire-fighters: Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines. CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

Further information: Vapors may form explosive mixture with air. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Section 6: Accidental Release Measures

Personal Precautions: Warn or evacuate occupants in surrounding and downwind areas if required due to flammability of the material. Emergency eye wash capability should be available in the vicinity of any potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Consider disposal of contaminated clothing rather than laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

Recovery and Neutralization: Carefully stop the source of the spill, if safe to do so. Eliminate any source of ignition near the spill and the associated vapors. Stop all work in vicinity and remove personnel immediately. Monitor release area with a combustible gas detection device.

Materials and Methods for Clean-Up: Spill / Release: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning. Allow liquid to evaporate from the surface. All equipment used when handling the product must be grounded. Do not direct water at spill or source of leak. Do not touch or walk through spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Allow liquid to evaporate from the surface.

Environmental Precautions: Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. Report spills to local authorities. If appropriate or required, report spills to the US Coast Guard National Response Center (800) 424-8802. EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 101(14) - Petroleum Exclusion - excludes crude oil and fractions of crude oil - including the hazardous substances, such as benzene, that are indigenous in those petroleum substances.

Section 7: Handling and Storage

Handling Procedures: Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.

Storage Procedures: Do not store or use this product near sources of ignition, heat, or sparks. Use only in a well-ventilated area. Store product in approved, properly labeled containers.

Incompatibilities: Keep away from strong oxidizers.

Static Electricity Hazard: Static electricity charges may accumulate and present a hazardous condition while handling this material. Ground and bond containers when transferring materials. Perform a Job Safety Analysis and train all persons involved in operations that have the potential to generate static charges or flammable vapors. Implement proper mitigation techniques. Improper filling of portable containers presents the risk of fire. Only fill containers on the ground. Do not fill containers that are inside a vehicle or truck/trailer bed. For additional information refer to: OSHA Standard 29 CFR 1910.106 – “Flammable and Combustible Liquids” Cal OSHA CCR Title 8 – General Industry Safety Orders, Group 20 – “Flammable Liquids, Gases, and Vapors” NFPA 77 – “Recommended Practices on Static Electricity” American Petroleum Institute (API) Recommended Practice 2003, “Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents”

Section 8: Exposure Control and Personal Protection

Component Exposure Limits:

| Percent max Vol % | Component | CAS # | Recommended Exposure Limits - ppm (mg/m ³) | | | |
|----------------------|------------|----------|--|------|---------|----------|
| | | | 8 HR TWA | STEL | CEILING | * Agency |
| 50% | Propane | 74-98-6 | 1000 (1800) | -- | -- | O,C,N |
| 40% | n-Butane | 106-97-8 | 800 (1900) | -- | -- | O,C,N |
| 25% | i-Butane | 75-28-5 | 800 (1900) | -- | -- | O,N |
| 2% | Isopentane | 78-78-4 | -- | -- | -- | O,C,N |

* O= OSHA C= CalOSHA N=NIOSH

Engineering Measures: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits. Use only intrinsically safe electrical equipment approved for use in classified areas.

Personal Protective Equipment

Respiratory: A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. 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

Hands: Use cold-impervious insulating gloves where contact with liquid may occur.

Eyes: Safety glasses or goggles and a face shield are recommended where there is a possibility of splashing or spraying.

Skin and Body: Wear appropriate cold insulating protective clothing.

Section 9: Physical and Chemical Properties

| | |
|-------------------------------------|---------------------------------|
| Appearance: | A colorless liquified gas. |
| Odor: | Mild, petroleum distillate odor |
| Physical State: | Liquified gas |
| pH: | Not Determined |
| Vapor Pressure: | Not Determined |
| Vapor Density: | >1.0 |
| Volatility (Vol. %): | 100 |
| Viscosity (SSU@ 100°F): | Not Available |
| Boiling Point/Range: | > -44°F |
| Melting Point: | NA |
| Solubility (H₂O): | Negligible |
| Specific Gravity: | 0.6 |
| API Gravity: | Not Determined |
| Evaporation Rate: | > BuAc |
| Flash Point: | <-76°F |
| Flammability Limit: | UFL: 9.5 LFL: 1.9 |
| Auto Ignition: | >550°F |

Section 10: Stability and Reactivity

Chemical Stability: This is a stable material. This product is considered stable during handling and storage under normal ambient conditions of pressure and temperature.

Hazardous Reaction Potential: Will not occur.

Conditions to Avoid: Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products: Keep away from strong acids and oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Burning produces carbon dioxide and carbon monoxide. May release acrid smoke and irritating fumes.

Hazardous Polymerization: Hazardous polymerization will not occur.

Section 11: Toxicological Information

Component Acute Toxicity:

Acute toxicity isobutane LC50 Inhalation Vapor Rat 658,000 mg/m³ 4 hours N-Butane LC50 Inhalation Vapor Rat 658,000 mg/m³ 4 hours.

Potential Health Effects:

Skin Corrosion: If frostbite has occurred, seek medical attention immediately; do NOT rub the affected areas. 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 wash contaminated skin with soap and water.

Contact with eyes: Contact with eyes may freeze eye tissue. Seek medical attention immediately; if tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of warm water for at least 15 minutes, occasionally lifting the lower and upper eyelids to ensure that all surfaces are flushed thoroughly. If irritation, pain, swelling, lacrimation, or photophobia persists, get medical attention as soon as possible.

Ingestion: Ingestion is not considered to be likely. If swallowed, obtain medical attention.

Inhalation: If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Give oxygen. Keep the affected person warm and at rest. Get medical attention as soon as possible.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization: This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity: This product is not reported to have any mutagenic effects. Material of similar composition has been positive in a mutagenicity study.

Carcinogenicity: There is no evidence for carcinogenicity in LPG for humans.

Reproductive Toxicity: This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure: This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure: This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Section 12: Ecological Information

Ecotoxicity

General Product Information: Report spills and releases, as applicable, under Federal and State regulations.

Component Analysis: No information available.

Bioaccumulation: Inherently biodegradable. Accumulation in terrestrial organisms is unlikely.

Mobility in Soil: No information available.

Section 13: Disposal Considerations

Waste Disposal Instructions: Recycle unused material. This product may meet the definition of a hazardous waste under RCRA (40 CFR 261) or definitions of a hazardous waste by State or local regulation. Analysis of the waste generated must be tested to correctly categorize the material for disposal. Federal law requires disposal at a licensed hazardous waste disposal facility.

Disposal of Contaminated Containers or Packaging: Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14: Transportation Information

| | DOMESTIC | INTERNATIONAL |
|-----------------------------------|----------------------------------|----------------------------------|
| DOT SHIPPING NAME: | Petroleum Gases, Liquified | Petroleum Gases, Liquified |
| DOT HAZARD CLASS: | 2.1 – Flammable Gases, Liquified | 2.1 – Flammable Gases, Liquified |
| DOT IDENTIFICATION NUMBER: | UN 1075 | UN 1075 |
| DOT PACKING GROUP: | Not Applicable | Not Applicable |

Section 15: Regulatory Information

OSHA – This material is classified as hazardous under OSHA regulations.

SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4): None.

SARA 311/312 - Hazard Classes

- | | |
|--------------------------------------|-----|
| 1. Immediate (acute) health effects: | Yes |
| 2. Delayed (chronic) health effects: | No |
| 3. Fire Hazard: | Yes |
| 4. Sudden Release of Pressure: | Yes |
| 5. Reactivity Hazard: | No |

State Regulations: None.

CALIFORNIA PROPOSITION 65 WARNING: Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm may be found in crude oil and petroleum products. Although it is possible to sufficiently refine a crude oil or its end products to remove the potential for cancer, we are advising that one or more of the listed chemicals may be present in some detectable quantities. Read and follow directions and use care when handling crude oil and petroleum products.

Canada:

WHMIS IDL: No components are listed in the WHMIS IDL.

Section 16: Other Information

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, Kern Energy (Kern) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. Kern assumes no responsibility for results obtained or for incidental or consequential, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.