

GOODWAY REFINING, LLC

Safety Data Sheet

*** 1. Product and Company Identification ***

Material Name: Mixed Liquefied Petroleum Gases, Raw Mix

Synonyms: Raw Mix, Mixed LPG, Raw Feed Mixture

Recommended Use: Fuel and Liquefied Petroleum process feed stock

Supplier: Goodway Refining, LLC
4745 Ross Rd.
Atmore, AL 36502
251-294-5660

Emergency Telephone #: CHEMTREC 800-424-9300
Goodway 251-294-5660

*** 2. Hazards Identification ***

GHS Classification:

Flammable Liquids – Category 1
Skin Corrosion/Irritation – Category 2
Germ Cell Mutagenicity – Category 1B
Carcinogenicity – Category 1B
Reproductive Toxicity – Category 2
Aspiration Hazard – Category 1
Specific Target Organ Toxicity, single – Category 3 narcotic effects
Specific Target Organ Toxicity, repeated – Category 2 liver, kidney

Emergency Overview

This product is a colorless mixture of gaseous hydrocarbons shipped or transported under pressure. It is a volatile and extremely flammable liquid that may cause flash fires. Keep away from heat, sparks and open flame. Liquid can cause frost burns. Aspiration of liquid into the lungs can produce chemical pneumonia or even death. Large releases can create a flammable vapor cloud.

GHS Label Elements

Symbol(s):



Signal Word(s):

Danger

Hazard Statements: Extremely flammable liquid and vapor. May cause damage to organs (liver, kidneys) through prolonged exposure by ingestion. Suspected of damaging fertility or the unborn child. Causes skin irritation. Toxic to aquatic life with long lasting effects. May cause genetic disorders. May cause cancer and may be fatal if swallowed and enters the airway.

Flammable liquid/Vapor:
 Causes Skin irritation:
 Causes eye irritation:
 Inhalation Hazard: Aspiration hazard if inhaled. Can enter lungs when vapor is emitted causing lung damage, respiratory irritation.

Precautionary Statements

Prevention: Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well ventilated area.
 Do not eat, drink or smoke when using this product.
 Do not breathe mist or vapors.
 Use explosion proof electrical, ventilating and lighting equipment.
 Keep containers and receiving equipment grounded/bonded.
 Take all precautionary measure against static discharge.
 Use only non-sparking tools.
 Keep containers tightly closed.
 Wear protective gloves, clothing, and proper eye/face protection.
 Wear respiratory protection.
 Keep away from open flames and heat sources.
 Avoid releases to the environment.

Response: If swallowed immediately call poison control center or doctor. Seek medical attention.

Do not induce vomiting.
 If on skin or hair take off all contaminated clothing, wash skin with water/shower.
 If skin irritation occurs seek medical attention.
 Wash hand and skin thoroughly after handling.
 If inhaled remove person to fresh air and keep comfortable and call poison control center or doctor. Seek medical attention.
 Wash contaminated clothing before reuse.
 In case of fire use dry chemical, CO₂, water spray or foam to extinguish.

Storage: Usage and storage should be suitable per OSHA 1910.106.

Store in a well ventilated area away from heat and ignition sources.
 Keep container tightly closed.
 Keep cool.
 Protect containers from physical damage.
 Do not store next to oxidizers.
 No smoking in storage areas.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Other Hazards: Carcinogenic Evaluation, The International Agency for Research on Cancer (IARC) has determined that there is limited evidence for the carcinogenicity of naphtha (light straight run and light catalytic cracked) in experimental animals.

| Name | IARC carcinogens | NTP carcinogens | ACGIH carcinogens | OSHA Select carcinogens |
|-----------------|--|-------------------------------|-------------------------------|-------------------------|
| Benzene 71-43-2 | Supplement 7 (2012) Monographs 29 (2012) | Known Human Carcinogen Listed | A1-Confirmed Human Carcinogen | Present |

***** 3. Composition/Information on Ingredients**

Mixture Description: Mixed LPG is a mixture of hydrocarbons that are separated and/or condensed from natural gas during collection and processing other hydrocarbons.

| CAS # | Chemical Identity/ Component | Concentration % |
|----------|------------------------------|-----------------|
| 74-82-8 | C1 Methane | .1 - .35% |
| 74-84-0 | C2 Ethane | .3 - 2.75% |
| 74-98-6 | C3 Propane | 7.5 -23.27 % |
| 75-28-5 | IC4 ISO-Butane | 5 - 16.27% |
| 106-97-8 | N-Butane | 18 - 34.58% |
| 78-78-4 | IC5 ISO-Pentane | 9 – 15.55% |
| 109-66-0 | NC5 N-Pentane | 8 -15.93% |
| 110-54-3 | C6 Hexanes | .1 -13% |
| 142-82-5 | C7+ Heptanes Plus | 0 – 12% |
| | | |
| | | |

Note: The above are represented in ranges as estimates. Due to sources may vary to the variations produced by a natural product.

***** 4. First Aid Measures *******General Information:**

Inhalation: Move exposed person to fresh air. If breathing or heart stops, trained personnel should immediately begin artificial respiration (AR) or cardiopulmonary resuscitation (CPR) respectively. Give supplemental oxygen if available. Get medical attention immediately.

Acute and delayed symptoms and effects: May displace oxygen and cause rapid suffocation. May cause irritation to the respiratory system. Signs/symptoms may include cough, sneezing, nasal drainage, headache, hoarseness and nose and throat pain

Skin Contact: If on skin flush or immerse the affected area(s) in lukewarm water for at least 15 minutes. Remove non-adhering contaminated clothing. Do not rub the affected area. Get medical attention immediately.

Acute and delayed symptoms and effects: Contact with rapidly expanding or liquefied gas may cause irritation and or frostbite. Signs/Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside. May cause skin irritation, redness, swelling and itching.

Eye Contact: If in eyes rinse cautiously with water for at least 15 minutes. Remove contacts lenses if present and easy to do so. Continue rinsing the eyes for another 15 minutes. If eye irritation persists seek medical attention immediately.

Acute and delayed symptoms and effects:

Contact with rapidly expanding or liquefied gas may cause irritation and or frostbite.

Causes eye irritation, signs and symptoms may include redness, swelling, pain, tearing and blurred or hazy vision.

Ingestion: Ingestion is considered unlikely. If accidentally swallowed obtain immediate medical attention.

Note to Physicians: Symptoms may not appear immediately. This material may be a cardiac sensitizer. Avoid the use of epinephrine and other sympathomimetic drugs.

***** 5. Fire Fighting Measures *****



Blue: health 1, Slight Hazard

Red: Fire 4, Flash Point below 73° F and Boiling point below 100° F.

Yellow: Reactivity 1, Normally stable but becomes unstable if heated

White: Special information None

General Fire Hazards: Extremely flammable gas. Contains gas under pressure; may explode if heated. Will be easily ignited by heat, sparks or flames. Will form explosive mixture with air. Vapors from liquefied gas is initially heavier than air and spread along the ground. Vapors may travel to source of ignition and flash back. Containers exposed to fire may vent and release flammable gas through pressure relief devices. Containers may explode when heated. Ruptured containers may become a missile.

If tank, rail car or truck tank is involved in a fire, **Isolate** for 1600 meters (1 Mile) in all directions. Also consider initial evacuation for 1600 meters (1 Mile) in all directions.

Note: DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS TO SOURCE OF THE LEAK CAN BE STOPPED.

Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices, Icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire use unmanned hose holders or monitor nozzles, if this impossible withdraw from area and let the fire burn.

Suitable Extinguishing Media: Water Spray, Foam, Dry Powder or Carbon Dioxide.

Small Fire: (dry chemical, carbon dioxide, water spray, foam and class B fire extinguisher).

Large Fires: Water Spray, firefighting foam, fog or any approved extinguishing agent for class B fires. Water spray can be used to cool fire exposed containers but may be ineffective in fighting the actual fire.

Unsuitable Extinguishing Media: Do not use water jet as an extinguisher as this, will spread the fire and can cause icing in the leak area.

Fire Fighting Equipment/Instructions: Fire fighters should use NIOSH approved SCBA and full protective equipment when fighting fire. Use water spray to cool nearby fire exposed containers or tank shells. If tank, rail car or truck tank is involved in a fire, isolate for 1600 meters (1 mile) in all directions. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Large storage tank fires may require withdrawal, allowing the tank to burn. Withdraw immediately in case of rising sound from venting or discoloration of tanks.

*** 6. Accidental Release Measures ***

Recovery and Neutralization: Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Cleanup: Remove sources of ignition. Beware of the explosion danger. Stop the flow of material, if you can do so without risk. Dike the spilled area where possible.

Small Spills: Absorb spillage with non-combustible, absorbent material. Ensure that waste and contaminated materials are collected and stored in a suitable container, remove from the work area as soon as possible. Disposal should be in accordance with applicable regional national and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be in compliance

Large Spills: Prevent spreading of liquid and vapors through sewers, ventilation systems and confined areas. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak. Use water spray to reduce vapors or divert vapor cloud drift. Remove product with Explosion proof pumps and store in Storage/salvage vessels. Use a non-combustible material like vermiculite, sand, or earth to soak up material. Place material into suitable storage container for later disposal. Disposal should be in accordance with applicable regional national and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be in compliance

Emergency Methods: As an immediate precautionary measure, isolate spill or leak area for at least 330 feet in all directions. Keep unauthorized personnel away. Stay upwind. Eliminate all ignition sources (no smoking, sparks, flames or electrical equipment in the immediate area). Gas is heavier than air and will spread along ground and collect in low or confined areas (sewers, drains, basements, tank, etc.). Keep out of low areas. All equipment used for handling product must be grounded/bonded. The use of explosion proof equipment is recommended. If tank, rail car or truck tank is involved in a fire, **Isolate** for 1600 meters (1 Mile) in all direction. Also consider initial evacuation for 1600 meters (1 Mile) in all directions.

Personal Protections and

Protective Equipment: Stay upwind and away from release. Avoid direct contact with material. Avoid inhalation of vapors and mist. Avoid contact with eyes and skin. Wear suitable protective clothing, gloves, and eye/face protection. For personnel protection see section 8 of the SDS.

Environmental Precautions: Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not contaminate water. Contact local authorities in case of spillage to drain or aquatic environment.

*** 7. Handling and Storage ***

Handling Procedures: Ensure proper grounding/bonding methods are used in the handling of this product. Comply with 29 CFR 1910.110, "Storage and handling of Liquefied Petroleum Gases," and all other applicable guidelines and regulatory requirements (Refer to NFPA77 or API RP 23003) related to environmental, health and safety. Do not smoke, eat or drink while handling this product. Wear appropriate personnel protection clothing, gloves and eye/face protection (See section 8 of SDS). Handle only in adequate ventilation. Gas can accumulate in confined spaces and limit oxygen available for breathing. Containers and equipment may present a cold burn hazard. Do not pierce or burn a container, even if considered empty, as it may contain explosives vapors.

Storage Procedures: Use approved containers that are tightly closed and clearly labeled. Store in a cool, dry, well ventilated area. Protect storage containers from physical damage, sunlight, and all sources of ignition. Post area as "NO SMOKING AREA". Outdoor or detached storage is preferred. Store away from incompatible materials. Storage area should comply with NFPA standards.

Incompatibles: Strong Acids, Strong bases, Oxidizers, and chlorine.

Other Advice: Make sure storage area complies with all State, Federal standards.

*** 8. Exposure Controls/Personal Protection ***

Component Exposure Limits:

| Material | CAS No. | ACGIH | OSHA PEL (ppm) | NIOSH REL (ppm) | Notation |
|------------|----------|--|--|---|--|
| Propane | 74-98-6 | 2500 ppm (TLV) 4508 mg/m ³ TWA | 1000ppm 1800 mg/m ³ (TWA) | 1000 ppm (REL) 1800mg/m ³ TWA | 29 CFR 1910.1000 Z-1 Table 1000 ppm 1800mg/m ³ TWA |
| Methane | 74-82-8 | Simple Asphyxiant | Not established | Not established | |
| Ethane | 74-84-0 | Simple Asphyxiant | Not established | Not established | |
| N-Butane | 106-97-8 | See Aliphatic hydrocarbon gases: Alkane {C1-C4} 1000ppm TWA listed under Butane, ALL isomers | Not established | Not established | |
| ISO-Butane | 75-28-5 | See Aliphatic | Not established | 800 ppm | |

| | | | | | |
|--------------------|----------|---|---------------------------|--|---|
| | | hydrocarbon gases: Alkane {C1-C4} 1000ppm TWA listed under Butane, ALL isomers) | | 1900mg/m3 TWA | |
| ISO Pentane | 78-78-4 | 600 (TWA) (pentane/isomers) | 1000 ppm (TWA) | 120 (TWA) 610 STEL | |
| N-Pentane | 109-66-0 | 600 ppm 1770 mg/m3 TWA | 1000 ppm 2950 mg/m3 (TWA) | 120 ppm 350mg/m3 (TWA) 610 ppm 1800 mg/m3 STEL | 29 CFR 1910.1000 Z-1 Table 1000 ppm 1800mg/m3 TWA |
| N-Hexane | 110-54-3 | 50 ppm 176 mg/m3 (TWA) | 500 ppm 1800 mg/m3 (TWA) | 50 ppm 180 mg/m3 (TWA) | See 29 CFR 1910.100 Table Z-1 |
| | | | | | |
| | | | | | |

Engineering Measures/Controls: Use ventilation adequate to keep exposure (airborne levels of dust, fume vapor, gas, etc.) below recommended exposure levels.

Personal Protective Equipment: Personal Protective Equipment (PPE) should meet recommended national standards. Check with PPE suppliers.



Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below allowable limits then a NIOSH approved self-contained breathing apparatus must be used. Supplied air breathing apparatus must also be used when oxygen concentrations are low if exposure levels are not known.

Hand/Skin Protection: Wear protective gloves. Wear cold insulating gloves. If contact with forearms is likely, wear gauntlet style gloves. Consult glove manufacture specifications for further information.

Eye Protection: Wear goggles, Face shield as needed to prevent eye and face contact. Use equipment for eye protection that meets the standards referenced by OSHA regulations in 29 CFR 1910.133 for personnel protection equipment.

Skin/Body Protection: Wear protective clothing and/or apron. Flame resistant clothing is recommended.

***** 9. Physical and Chemical Properties *****

Appearance: Colorless gas or colorless liquid when pressurized.

Odor: Faint hydrocarbon odor.

Upper flammability limits: 8.4 % (Butane)

Lower flammability limits: 1.6 % (Butane)

Flammability (solid/gas): Extremely flammable gas.
Odor threshold: Not available
Vapor pressure: 25-50 psi at 15.6° C (60° F)
Vapor density: 2.0 (Air=1) at 15.6° C (60° F)
PH: NA
Relative density: 0.6 (water=1) at 15.6° C (60° F)
Melting point/freezing point: -138.3°C (-217° F)
Solubility: Insoluble in water.
Auto-ignition temperature: 405° C (761° F) (Butane)
Flash point: -60° C (-76° F)
Initial boiling pint and boiling range: Not available
Evaporation rate: High
Partition coefficient: n-octanol/water: Not available
Decomposition temperature: Not available
Viscosity: Not available

*** 10. Stability and Reactivity ***

Chemical Stability: Stable under normal conditions.

Hazardous Reaction Potential: Stable under normal conditions.

Conditions to Avoid: Sources of ignition, exposure to heat and incompatible materials.

Incompatible Materials: Strong oxidizers such as nitrates, perchlorates, chlorine and fluorine. Strong acids.

Hazardous Decomposition Products: Thermal decomposition or combustion may liberate carbon oxides and other toxic gases. Not anticipated under normal conditions.

*** 11. Toxicological Information ***

Basis for Assessment: Information given is based on product data, a knowledge of the components and the toxicology of similar products.

Likely Routes of Exposure: Inhalation, skin contact, and eye contact are the primary routes of exposure, although accidental ingestion is possible.

Component Toxicity:

| • Component | CAS Number | LD50 Oral | LD50 dermal | LC50 |
|-------------|------------|-------------------|---------------|------------------------|
| Butane | 106-97-8 | Not available | Not available | 658000mg/m3 (rat); 4H |
| Isobutane | 75-28-5 | Not available | Not available | 570000 ppm (rat); 15M |
| Pentane | 109-66-0 | 400 mg/kg (rat) | Not available | 364000 mg/m3 (rat); 4H |
| Isopentane | 78-78-4 | Not available | Not available | Not available |
| Propane | 74-98-6 | Not available | Not available | Not available |
| N-Hexane | 110-54-3 | 25000 mg/kg 9rat) | Not available | 48000ppm/4 hours (rat) |
| Natural Gas | | | | |
| Raw liquid | | | | |
| Mix | 64741-48-6 | Not available | Not available | Not available |

Acute Oral Toxicity: Not available.

Acute Dermal Toxicity: Not available.

Acute Inhalation Toxicity: Gas reduces oxygen available for breathing.

Skin Corrosion/Irritation: Causes skin irritation. US ACGIH Threshold Limit Values: Skin designation Benzene (CAS 71-43-2) can be absorbed through the skin. Hexane (CAS 110-54-3) can be absorbed through the skin.

Serious Eye Damage/Irritation: May cause eye irritation.

Respiratory Irritation: May cause respiratory irritation.

Respiratory or Skin Sensitization: Not available.

Aspiration Hazard: Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Germ Cell Mutagenicity: May cause genetic defects.

Carcinogenicity:

- ACGIH Carcinogens: Benzene (CAS No. 71-43-2) Group A1 confirmed human carcinogen.
- IARC Monographs: Benzene (CAS No. 71-43-2) 1 Human Carcinogen.
- NTP Report on Carcinogens: Benzene (CAS 71-43-2) Known carcinogen.
- OSHA Specifically Regulated Substances: Benzene (CAS 71-43-2) Cancer hazard

Reproductive and

Development Toxicity: Avoid exposure to women during early pregnancy. Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals. Possible reproductive hazard. Potential embryo-fetal toxicity and teratogenicity.

Specific Target Organ Toxicity

Single Exposure: May cause drowsiness

Specific Target Organ Toxicity –

Repeated Exposure: Causes damage to the following organs through prolonged or repeated exposure. Liver and kidneys.

***** 12. Ecological Information *****

Basis for Assessment:

Fuels are typically made from blending several refinery streams. Eco toxicological studies have been carried out on a variety of Hydrocarbon blends and streams but not those containing additives. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

Acute Toxicity:

Toxic to aquatic organisms. May cause long term adverse effects to the environment.

| | |
|-----------------------------------|---|
| Mobility: | Due to volatility, air is the only environment in which petroleum gases would be found. |
| Persistence/Degradability: | The degradability of this product has not been stated. This product meets the definition of the Oil pollution Compensation (IPOC) fund as being “non-persistent” oil. Bio accumulative potential. |
| Bio accumulation: | May bio accumulates in aquatic organisms. |
| Other Adverse Effects: | Not available |

***** 13. Disposal Considerations *****

| | |
|----------------------------|---|
| Material Disposal: | |
| Container Disposal: | |
| Local Legislation: | Material is a gas at ambient temperatures and would not typically be managed as a waste. Disposal should be in accordance with applicable regional national and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be in compliance. |

***** 14. Transport Information *******DOT Information**

Shipping Name: Liquefied petroleum gas, Petroleum gases, Liquefied.
UN #: 1075
Hazard Class: 2.1
Packing Group: Not available

Placard:

DOT

***** 15. Regulatory Information *****

Component Analysis

UA TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard This product has been evaluated and determined to be hazardous as defined in OSHA’s Hazard Communication Standard 29 CFR 1910.1200.

EPA Superfund Amendment & Reauthorization Act (SARA):

This material contains one of more of the following chemicals required to be identified under SARA Section 302, SARA Section 304, SARA Section 313, SARA Section 311/312, and/or CERCLA.

SARA Section 302 This product contains the following component(s) that have been listed on EPA’s Extremely Hazardous Substance (EHS) List:

| Name | SARA Section 302 EHS and TPQs |
|--------------------|-------------------------------|
| N-Butane | NA |
| Propane | NA |
| Iso-Pentane | NA |
| C6-C7 Hydrocarbons | NA |
| Iso-Butane | NA |
| Normal Pentane | NA |
| C8 Hydrocarbon | NA |
| Benzene | NA |
| Ethane | NA |

SARA Section 304 This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

| Name | SARA Section 302 EHS and TPQs |
|--------------------|------------------------------------|
| N-Butane | NA |
| Propane | NA |
| Iso-Pentane | NA |
| C6-C7 Hydrocarbons | NA |
| Iso-Butane | NA |
| Normal Pentane | NA |
| C8 Hydrocarbon | NA |
| Benzene | = 10lb final RQ (4.54 kg final RQ) |
| Ethane | NA |

SARA Section 313 This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) Form R:

| Name | SARA Section 302 EHS and TPQs |
|--------------------|-------------------------------|
| N-Butane | None |
| Propane | None |
| Iso-Pentane | None |
| C6-C7 Hydrocarbons | None |

| | |
|----------------|--------------------------------|
| Iso-Butane | None |
| Normal Pentane | None |
| C8 Hydrocarbon | None |
| Benzene | =0.1% de Minimis concentration |
| Ethane | None |

SARA Section 311/312 The following EPA hazard categories apply to this product:

- Acute Health Hazard
- Chronic Health Hazard
- Fire Hazard
- Sudden release of pressure

***** 16. Other Information *****

NFPA Hazard Rating:



Health: Blue: health 1, Slight Hazard
Fire: Red: Fire 4, Flash Point below 73° F and Boiling point below 100° F.
Reactivity: Yellow: Reactivity 1, normally stable but becomes unstable if heated.
Special Information: White: None

HMIS Hazard Rating:

| | |
|----------------------------|---|
| Chemical Name | |
| HEALTH | 2 |
| FLAMMABILITY | 4 |
| PHYSICAL HAZARD | 1 |
| PERSONAL PROTECTION | D |

Health: 2 Temporary or minor injury may occur.

Fire: 4 Flammable gases, or very volatile flammable liquids with flash point below 73° F (23° C), and boiling points below 100° F (38° C). Materials may ignite spontaneously with air (e.g., Propane).

Physical Hazard: Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water and undergo hazardous polymerization in the absence of inhibitors.

Personal Protection: Face shield, Gloves and Apron.



DOT Placard

Additional Information:

This document contains important information to ensure the safe storage, handling, and use of this product. The information in this document should be brought to the attention of the person in your organization responsible for advising on safety matters.

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

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