



## Gibson Clear Frac Fluid MSDS Material Safety Data Sheet

### 1. Product and Company Identification

Product Name: Gibson Clear Frac Fluid  
Synonym: Petroleum Hydrocarbon  
Product use: Chemical feedstock, flotation and spray oils, oil field drilling fluids and other industrial applications.  
Supplier: Moose Jaw Refinery  
Address: 641 Manitoba Street East  
Moose Jaw, SK, S6H 6E3  
Emergency Contact: 403-206-4000  
Canutec: (613) 996-6666 or Cellular \*666

### 2. Hazards Identification

#### EMERGENCY OVERVIEW

Combustible hydrocarbon liquid. Product will float on water. Keep away from heat, sparks and flame. Avoid breathing vapour – harmful if inhaled. Avoid contact with eyes, skin and clothing. Vapours are heavier than air and may travel considerable distances to a source of ignition and flash back. Vapours may spread along the ground and may enter sewers, basements and other confined spaces. Spilled material will be slippery and may cause falls.

#### POTENTIAL HEALTH EFFECTS / ROUTES OF EXPOSURE

**Eye Contact:** May cause eye irritation.

**Skin Contact:** May cause irritation and repeated or prolonged contact may defat the skin leading to dermatitis. Prolonged skin contact with petroleum products is associated with skin cancer.

**Ingestion:** Ingestion may lead to vomiting and diarrhea. Vomiting may cause aspiration of liquid into the lungs and may result in chemical pneumonia, severe lung damage and respiratory failure.

**Inhalation:** Inhalation of vapours may cause headaches, loss of appetite and drowsiness. Inhalation of vapours may also affect the Central Nervous System, liver and kidneys.

### 3. Composition/Information on Ingredients

| Ingredient Name | %     | CAS No.   |
|-----------------|-------|-----------|
| Kerosene        | 100   | 8008-20-6 |
| Octane          | 1-3   | 111-65-9  |
| Nonane          | 1-5   | 111-84-2  |
| Decane          | 10-20 | 124-18-5  |
| Unidecane       | 15-30 | 1120-21-4 |
| Dodecane        | 15-30 | 112-40-3  |
| Tridecane       | 7-15  | 629-50-5  |

Gas oil is defined as Petroleum distillates, straight middle run. The listed components are provided as guidance based on the available knowledge of the commingled stream.



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### 4. First Aid Measures

- Eyes:** In case of contact with eyes, immediately flush with water for at least 15 minutes. Hold eyelids open to ensure adequate flushing. Seek medical attention.
- Skin:** Remove contaminated clothing and wash contaminated areas thoroughly with soap and water (use waterless hand cleaner if water is not available). Obtain medical attention if irritation or redness develops.
- Ingestion:** DO NOT induce vomiting as aspiration of fluid into lungs may cause chemical pneumonia, severe lung damage and respiratory failure. Obtain immediate medical attention.
- Inhalation:** Ensure your own safety and use the appropriate respiratory protection to immediately remove the victim to an area free of contamination. Give CPR or artificial respiration as needed and give oxygen if breathing is difficult. Keep victim at rest and get immediate medical attention.

### 5. Fire Fighting Measures

#### FLAMMABLE PROPERTIES

Combustible liquid.

#### HAZARDOUS COMBUSTION PRODUCTS:

This product burns with very smoky flame. Combustion produces carbon monoxide, carbon dioxide and irritating products associated with incomplete combustion.

#### FIRE AND EXPLOSION HAZARDS

Product vapours are heavier than air and may travel considerable distances to a source of ignition and flash back. Vapors may spread along the ground and enter sewers, basements and other confined spaces.

#### EXTINGUISHING MEDIA

**Small Fires:** Dry chemical, CO<sub>2</sub>, or foam.

**Large Fires:** Water spray, fog or foam can be used according to the manufacturer's recommended application techniques. Move containers from fire area if without risk.

#### FIRE FIGHTING INSTRUCTIONS

Small fires in the early stages may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. When fighting fires may result in potential exposure to high heat, smoke or toxic byproducts of combustion, an approved self-contained breathing apparatus (SCBA) with full-face piece and full turnout gear must be worn. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with large quantities of water.

#### UNUSUAL FIRE & EXPLOSION HAZARDS

Product floats on water and is capable of creating a fire hazard along path of runoff.



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### 6. Accidental Release Measures

#### **ACTIVATE SITE SPECIFIC EMERGENCY RESPONSE PLAN, IF AVAILABLE.**

This product may be ignited by heat, sparks or flames. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Vapours may form explosive mixtures with air. Keep unauthorized personnel away. Stay upwind and keep out of low-lying areas. Ventilate closed spaces before entering. Do not touch or walk through spilled material. Stop leak if possible without risk. Prevent the product from entering waterways, sewers, basements or confined areas. A vapour suppressing foam may be used to reduce vapours. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use non-sparking tools to collect absorbed material.

**Small Spills:** Keep unauthorized personnel away. Stay upwind and keep out of low-lying areas. Ventilate closed spaces before entering. Spilled material is slippery and may cause falls.

**Large Spills:** Isolate and contain spill for clean-up and disposal. Keep unauthorized personnel away. Stay upwind and keep out of low-lying areas. Ventilate closed spaces before entering. Spilled material is slippery and may cause falls.

### 7. Handling and Storage

#### **HANDLING PRECAUTIONS**

Handle as a Combustible liquid. Keep away from heat, sparks, and open flame. No smoking or open flame in storage, use or handling areas. Keep containers closed and clearly labeled. Ground all drums and transfer vessels when handling. Empty product containers or vessels may contain explosive vapours. Do not cut, heat, weld or expose product to sources of ignition. Use only with adequate ventilation. Avoid breathing vapours. Wash thoroughly after handling.

#### **STORAGE PRECAUTIONS**

Store in a well ventilated area. This storage area should comply with NFPA 30. Avoid storage near incompatible materials.

#### **WORK/HYGIENIC PRACTICES**

Use good personal hygiene practices. DO NOT siphon by mouth. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not eat, drink or smoke in areas of use or storage. Waterless hand cleansers may be used if water is not readily available. Promptly remove contaminated clothing and launder before reuse. Discard contaminated leather shoes and gloves.

### 8. Exposure Controls / Personal Protection

#### **Engineering Controls**



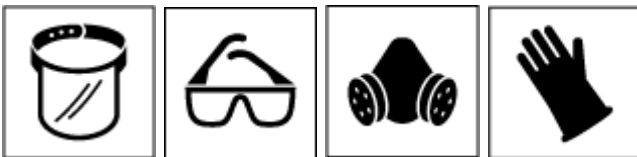
Emergency eye wash station should be available in the vicinity of any potential splash exposure. Electrical equipment should be approved for classified area. Ensure adequate explosion proof lighting and local exhaust ventilation to keep vapour and mist



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concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

### PERSONAL PROTECTIVE EQUIPMENT



**Eye/Face Protection:** Safety glasses with side shields are required or use a face shield or chemical splash goggles if there is an elevated possibility of splashing or spraying.

**Skin Protection:** Avoid skin contact and wear gloves constructed of nitrile, neoprene, or PVC. Fire retardant coveralls are required and chemical protective clothing such as of poly-coated or an equivalent may be recommended based on the degree of exposure.

**Note:** The resistance of specific materials may vary from product to product as well as degree of exposure. If the product is sensed inside the glove, the glove could be damaged or the glove material is incorrect for this product.

**Respiratory Protection:** Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are unknown, or any other circumstance exist where an air-purifying respirator may not provide adequate protection. When assessing the proper type of respiratory protection, also consider the occupational exposure limits applicable to individual ingredients. Refer to CSA Standard "Selection, Use and Care of Respirators" (Z94.4-02) and NIOSH Respirator Decision Logic for additional guidance on respiratory protection.

A NIOSH/MSHA approved air-purifying respirator with organic vapour cartridges may be acceptable if airborne concentrations are expected to exceed exposure limits.

Protection provided by air-purifying respirators is limited. Product odour or taste sensed inside the respirator indicates the respirator is not functioning properly.

### Exposure Limits

| Ingredient Name | CAS No.   | Exposure Limits                      |
|-----------------|-----------|--------------------------------------|
| Kerosene        | 8008-20-6 | ACGIH TLV-TWA =200 mg/m <sup>3</sup> |
| Octane          | 111-65-9  | ACGIH TLV-TWA =300 ppm               |
| Nonane          | 111-84-2  | ACGIH TLV-TWA =200 ppm               |

## 9. Physical and Chemical Properties

|                            |   |
|----------------------------|---|
| Appearance and state:      | Clear colourless oily liquid                    |
| Odour:                     | Hydrocarbon                                     |
| Odour Threshold:           | Not Available                                   |
| Flash Point:               | 43 °C (109.4 °F)                                |
| Auto Ignition:             | Not Available                                   |
| Lower Explosive Limit (%): | 0.7   |
| Upper Explosive Limit (%): | 5   |
| Boiling Point:             | 150-260 °C (302-500 °F)                         |
| Melting Point:             | Not available                                   |
| Reid Vapour Pressure:      | <0.1 kPa  |
| Vapour Density (Air = 1):  | Not determined, expected to be heavier than air |
| Density:                   | 0.816 (water - 1.0) at 15 °C                    |



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Solubility (H<sub>2</sub>O): Insoluble  
Percent Volatiles: Not Applicable  
Viscosity: Max 2.5 cSt @ 40 °C  
Partition coefficient: >1

### 10. Stability and Reactivity

#### STABILITY

Stable

#### CONDITIONS TO AVOID (STABILITY)

Material is stable under normal conditions. Avoid high temperatures, open flames, sparks, welding, smoking and other ignitions sources.

#### INCOMPATIBLE MATERIALS

Keep away from strong oxidizers and sources of heat or ignition.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Irritating or toxic substances may be emitted upon decomposition. Decomposition products include carbon dioxide, carbon monoxide and sulphur dioxide.

#### HAZARDOUS POLYMERIZATION

Will Not Occur.

### 11. Toxicological Information

| Ingredient Name | CAS No.   | LD50                       | LC50  |
|-----------------|-----------|----------------------------|---|
| Kerosene        | 8008-20-6 | >5000 mg/kg<br>(Oral, Rat) | >5000 mg/ m <sup>3</sup><br>(Inhal, Rat 4 Hr) |
| Octane          | 111-65-9  | Not available              | Rat inhal<br>118 g/m <sup>3</sup> /4hr        |
| Nonane          | 111-84-2  | Not available              | Not available                                 |
| Undecane        | 1120-21-4 | Mouse iv<br>517 mg/kg      | Not available                                 |
| Dodecane        | 112-40-3  | Not available              | Not available                                 |
| Tridecane       | 629-50-5  | Mouse iv<br>1161 mg/kg     | Not available                                 |
| Hexadecane      | 544-76-3  | Not available              | Not available                                 |

#### POTENTIAL HEALTH EFFECTS

**Acute:** This product may cause irritation to the eyes and skin. Inhalation may cause headaches, loss of appetite, drowsiness and may also affect the Central Nervous System, liver and kidneys. Ingestion may cause vomiting and diarrhea as well as aspiration of liquid into the lungs resulting in severe lung damage.

**Chronic:** Prolonged or repeated exposure to the skin can defat the skin and lead to dermatitis. Inhalation may cause headaches, loss of appetite, drowsiness, visual impairment and may also affect the Central Nervous System, liver and kidneys.

**Sensitization:** Not available.

**Mutagenicity:** Not available

**Reproductive effects:** Not available



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**Carcinogenicity:** ACGIH has listed kerosene as A3 – confirmed animal carcinogen with unknown relevance to humans. The effect is believed to have been caused by continuous irritation to the skin from repeated and prolonged application to the skin of laboratory animals. The International Agency for Research on Cancer considers Kerosene not classifiable Kerosene as not classifiable to its carcinogenicity in humans.

### 12. Ecological Information

If released into soil, it will absorb and may biodegrade in anaerobic conditions. Photo-oxidation products include phenol, nitrophenols, nitrobenzene, formic acid and peroxyacetyl nitrate. Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Information

Preferred waste management priorities are recycle, reprocess or incineration with heat recovery. Ensure disposal or reprocessing is in compliance with government regulations and local disposal regulations.

### 14. Transport Information



|                    |          |
|--------------------|----------|
| Shipping Name:     | Kerosene |
| Primary TDG        | 3        |
| Secondary TDG      | None     |
| P.I.N.             | UN1223   |
| Packing Group      | III      |
| NAERG Guide Number | 128      |



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### 15. Regulatory Information

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

Workplace Hazardous Materials Information Systems (WHMIS): This product has been classified in accordance with the hazard criteria of the CPR (Controlled Product Regulations), and the MSDS contains all of the information required by the CPR.



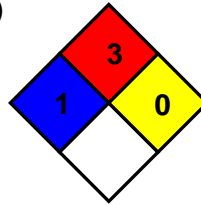
**Class B3 – Combustible Liquid**

**Class D2A – Materials Causing Serious and Other Toxic Effects**

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)**

All components of this product are listed on the Canadian DSL Inventory.

**NFPA (National Fire Protection Association)**



### 16. Other Information

Prepared for: Gibson Energy: Health and Safety  
Information contact: 403.206.4000  
Prepared by: Deerfoot Consulting Inc.

#### Disclaimer of Expressed and Implied Warranties

The information presented in the Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. However, neither Gibson Energy, Deerfoot Consulting Inc nor any of their subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use.