SOLVENT SYSTEMS International, Inc.
Environmental Services

# Offer Sheet

| | |
|---|---|
| Product | Heavy Fusel Oil (HFO) 50% alcohol yellow color |
| Quantity | 50,000 gallons/year |
| Net weight | Approximately 42,470 per ISO tank |
| Manufacture date | Byproduct material |
| Availability | Ongoing |
| Location | 3 FOB locations: Jacksonville, FL / New Jersey / Houston, TX |
| Date | 8/6/25 |
| COA & SDS | Attached below |


**Heavy Fusel Oil** is a byproduct of ethanol fermentation and distillation, composed primarily of higher-chain alcohols (such as **amyl alcohols, isoamyl alcohol, hexanol**, and heavier fractions). Due to its **high energy content**, solvent characteristics, and reactivity, it has several **commercial and industrial applications**.

**1. Fuel Blending for Industrial Boilers and Furnaces**
Heavy fusel oil has a **high calorific value**, making it suitable for blending into **industrial fuel oil** used in boilers, kilns, and furnaces. It can partially replace diesel or furnace oil in cost-sensitive operations.

**2. Solvent for Resins, Paints, and Coatings**
Due to its complex alcohol mix, heavy fusel oil is used as a **solvent or co-solvent** in industrial formulations like **alkyd resins**, **oil-based paints**, and **varnishes**, particularly where slow evaporation and high solvency are desired.

**3. Plasticizer and Ester Production**
Heavy fusel oil is used as a **feedstock in esterification** reactions to produce **plasticizers**, such as isoamyl acetate and related esters. These esters are then used in plastics, rubbers, and synthetic resins.

**4. Lubricant Additive Manufacturing**
Certain alcohols in fusel oil are used in the synthesis of **lubricant additives** to improve solubility, reduce friction, or provide anti-wear characteristics in metalworking fluids and engine oils.

**5. Agrochemical & Pesticide Formulations**
Heavy fusel oil may be used as a **carrier solvent** in low-cost agricultural formulations, such as **emulsifiable concentrates (ECs)** or pesticide sprays, especially where cost sensitivity outweighs regulatory restrictions.

**6. Industrial Waste-to-Energy Feedstock**
When not refined, heavy fusel oil can be used in **waste-to-energy systems** or in **gasification/blending units** for thermal energy recovery, helping manufacturers reduce environmental disposal costs.

If interested, please call or text:

**Brian Svrusis**
Solvent Systems International
70 King St.
Elk Grove Village, IL 60007
847-323-6718 call or text
Click here for: Surplus Inventory
Solvent-Systems.com

# HEAVY FUSEL OIL

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **PRODUCT :** | | **ALIQUOT REF :** | |
| **LABEL LOT CODE :** | | **SAMPLE REF :** | |
| **DESCRIPTION :** | | | |
| **BATCH SAP :** | | **SAMPLING DATE :** | 2025-05-06 18:22 |
| **PROD ORDER :** | | **COMPLETED ON :** | 2025-05-08 13:27 |
| **SHELF LIFE DATE :** | | **AUTHORISED BY :** | N/A |
| **QUALITY LOT :** | | **PRODUCTION DATE :** | N/A |
| **SITE :** | | **LOCATION :** | |
| **COMMENT :** | | **TRUCK REFERENCE :** | N/A |
| | | **VAT :** | |

| Additional Note | Note |
|---|---|

| PARAMETERS | INTERNAL SPECS | LEGAL SPECS | RESULTS | UNITS |
|---|---|---|---|---|
| TOT ACIDS | | | ND | mg/100 mL @ 100% abv |
| ETH FORM | N/A | N/A | 2.99 | mg/100 mL @ 100% abv |
| TOT FUSEL OILS-DIST | N/A | >= 180 and <= 220 | os 25964.0 | mg/100 mL @ 100% abv |
| TOT EST-DIST | N/A | >= 15 and <= 40 | os 55.7 | mg/100 mL @ 100% abv |
| ACETALD | N/A | >= 0 and <= 10 | os 10.8 | mg/100 mL @ 100% abv |
| MEOH | N/A | >= 0 and <= 10 | 6.0 | mg/100 mL @ 100% abv |
| ACETONE | N/A | N/A | 0.00 | mg/100 mL @ 100% abv |
| N-PROP | N/A | N/A | 6053.21 | mg/100 mL @ 100% abv |
| SEC-BUT | N/A | N/A | 0.00 | mg/100 mL @ 100% abv |
| ISO-BUT | N/A | N/A | 5833.33 | mg/100 mL @ 100% abv |
| ACT-AMYL ALC | N/A | N/A | 2382.98 | mg/100 mL @ 100% abv |
| ISO-AMYL ALC | N/A | N/A | 11497.19 | mg/100 mL @ 100% abv |
| N-AMY ALC | N/A | N/A | 27.09 | mg/100 mL @ 100% abv |
| N-BUT | N/A | N/A | 170.14 | mg/100 mL @ 100% abv |
| MET ACET | N/A | N/A | 0.00 | mg/100 mL @ 100% abv |
| ETH ACET | N/A | N/A | 52.67 | mg/100 mL @ 100% abv |
| APP PROOF | N/A | N/A | 81.908 | Proof ° |

OS: Out of Specification
ND: Not Determined

# SAFETY DATA SHEET

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Fusel oil

CAS-No. : 8013-75-0

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Synthesis of substances

### 1.3 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 3), H226
Acute toxicity, Oral (Category 4), H302
Skin irritation (Category 2), H315
Serious eye damage (Category 1), H318

Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system, H335, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word: Danger

Hazard Statements

| | |
|---|---|
| H226 | Flammable liquid and vapor. |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |

Precautionary Statements

| | |
|---|---|
| P210 | Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ ventilating/ lighting/ equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing mist or vapors. |
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/ eye protection/ face protection. |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. |
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. |
| P332 + P313 | If skin irritation occurs: Get medical advice/ attention. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C5H12O
Molecular weight :
CAS-No. : 8013-75-0
EC-No. : 801-375-0

| Component | Classification | Concentration |
|---|---|---|
| **Fusel oil** | | |
| | Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; H226, H302, H315, H318, H335, H336 | <= 100 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

No data available

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

No data available

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides
Combustible.

### 5.3 Advice for firefighters

No data available

### 5.4 Further information

No data available

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8.

### 6.2 Environmental precautions
No data available

### 6.3 Methods and materials for containment and cleaning up
No data available

### 6.4 Reference to other sections
For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling
For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities
No data available

### 7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Ingredients with workplace control parameters**
Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls
No data available

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a) | Appearance | Form: liquid |
| b) | Odor | No data available |
| c) | Odor Threshold | No data available |
| d) | pH | No data available |
| e) | Melting point/freezing point | No data available |
| f) | Initial boiling point and boiling range | 128 - 130 °C 262 - 266 °F at 1,013 hPa |
| g) | Flash point | 45.5 °C (113.9 °F) - closed cup |
| h) | Evaporation rate | No data available |
| i) | Flammability (solid, gas) | No data available |

| | | |
|---|---|---|
| j) | Upper/lower flammability or explosive limits | No data available |
| k) | Vapor pressure | No data available |
| l) | Vapor density | No data available |
| m) | Density | No data available |
| | Relative density | No data available |
| n) | Water solubility | No data available |
| o) | Partition coefficient: n-octanol/water | No data available |
| p) | Autoignition temperature | No data available |
| q) | Decomposition temperature | No data available |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | none |

**9.2 Other safety information**
No data available

## SECTION 10: Stability and reactivity

**10.1 Reactivity**
No data available

**10.2 Chemical stability**
No data available

**10.3 Possibility of hazardous reactions**
No data available

**10.4 Conditions to avoid**
No data available

**10.5 Incompatible materials**
Strong oxidizing agents

**10.6 Hazardous decomposition products**
In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**
Oral: No data available
Inhalation: No data available
Dermal: No data available

**Skin corrosion/irritation**
Remarks: No data available

**Serious eye damage/eye irritation**
Remarks: No data available

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
No data available

**Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Inhalation - May cause respiratory irritation., May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

### 11.2 Additional Information

Dizziness, Drowsiness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## SECTION 12: Ecological information

### 12.1 Toxicity
No data available

### 12.2 Persistence and degradability
No data available

**12.3 Bioaccumulative potential**
No data available

**12.4 Mobility in soil**
No data available

**12.5 Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Endocrine disrupting properties**
No data available

**12.7 Other adverse effects**
No data available

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**
No data available

## SECTION 14: Transport information

**DOT (US)**
UN number: 1201 Class: 3 Packing group: III
Proper shipping name: Fusel oil
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

**IMDG**
UN number: 1201 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: FUSEL OIL

**IATA**
UN number: 1201 Class: 3 Packing group: III
Proper shipping name: Fusel oil

## SECTION 15: Regulatory information

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

| | | |
|---|---|---|
| **SARA 311/312 Hazards** | : | Fire Hazard<br>Acute Health Hazard |
| **SARA 313** | : | This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. |

**US State Regulations**

**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**The ingredients of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

## SECTION 16: Other information