



## **PRODUCT OVERVIEW**

### **GRIESEL**

(Ch. Hd. 29161590)

- ***Griesel is a BIO-DEGRADABLE INDUSTRIES FUEL use for HEAT generation.***
- The product is manufactured through a process in which organically derived oils are combined with alcohol in the presence of catalyst to form the corresponding Ester.
- ***Griesel can be made from soya oil, cooked vegetable oil, palm oil, rape seed etc.***
- It is **ECO-FRIENDLY** and cost effective renewable source of energy. It can be used as an alternative form of fuel as compared to petroleum fuel LDO.
- ***OTHER BENEFITS :***
  - Low emission of environmental unfriendly material.
  - Higher flash point.
  - Clean burning.
  - No Burner modification.
  - Increase Burner life.
  - Bio-degradable & non-toxic.
  - Easy to handle and store.

#### **GRIESEL INDIA BIOFUELS PVT. LTD.**

KALPANA, PLOT NO. 816/1/2, E, BEHIND CIRCUIT HOUSE, TARABAI PARK, KOLHAPUR 416 003 PH. : 0231-2652810, FAX : 0231- 2664777

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### **Superior Nature of Griesel :**

- **Superior Blending fuel :** Griesel is a superior blending fuel. It can be used neat or in blended form in any ration with petroleum diesel / LDO from 5% (G5) to 70% (G70) without any COMBUSTION modification. For higher blend fuels minor engine modifications such as change of seals and gaskets are required.
- **Higher Lubricity :** The use of Griesel improves the lubricity of the fuels thereby reducing engine wear and tear thus prolonging engine life and improving engine performance.
- **Higher Flash Point :** Flash point of Griesel is  $>125^{\circ}\text{C}$  compared to flash point of Petrodiesel which is  $80^{\circ}\text{C}$ . Therefore it is safer to store /handle /and transport Griesel compared to Petrodiesel. It is obvious that flash point of the blends of Griesel and Petrodiesel Improves with the percentage of Griesel increase in Petrodiesel/LDO.
- **Non Hazardous, Non Toxic :** Smell of Griesel pleasant compared to that of Petrodiesel. Also exhaust emissions from use are not irritant to eyes. Griesel is non Hazardous and non toxic.
- **Higher Cetane No. :** Cetane no. of Griesel is higher (51 To 62) as compared to Cetane No. of Petrodiesel (44-49).

### **Environmental Benefits :**

Griesel offers superior environmental benefits than conventional petroleum LDO

- **Lower Particulate Matter (PM):** Studies have indicated PM emissions from Griesel are estimated to be 30% lower than over all PM emission from LDO.
- **Lower Hydrocarbons:** The total hydrocarbons exhaust emissions of Griesel are 93% lower than LDO.

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- **Reductions in Sulphur Dioxide (SO<sub>2</sub>):** The exhaust emission of sulphur dioxides are essentially eliminated with use of *Griesel*.
- **Lower Carbon Monoxide:** The exhaust emissions of carbon monoxide (a poisonous gas) from *Griesel* I are 50% lower than carbon monoxide emissions from LDO.
- **Reduction in Carbon dioxide:** Due to closed carbon cycle Griesel use reduces CO<sub>2</sub> emissions by 78% as compared to petroleum LDO.

### **USES OF GRIESEL :**

Due to its economic benefits and versatility *Griesel* is being widely used across various industries.

- Fuel Performance : *Griesel* most noted attribute highlighted by consumers is the similar operating performance to conventional LDO fuel. *Griesel* has a very similar energy value per gallon as LDO, so there is no need to compromise performance when using this alternative fuel.
- Biodegradability : *Griesel* has desirable degradation attributes, which make it the fuel of choice for environmentally conscious users.
- Flash Point : *Griesel* and even petroleum LDO that has been blended with *Griesel* I is safer to store, handle and use than conventional fuel. Not only does this make gas stations and their associated delivery trucks much safer, but a vehicle fuelled with *Griesel* is also much safer as it will not explode if involved in an accident.
- Lubricity : *Griesel* is an excellent Lubricity additive
- Emissions Reductions.
- Griesel reduces the classic "knocking" noise.

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### **INDUSTRIAL application**

- **Griesel** is an obvious candidate for use in marine applications. Independent tests have found that pure **Griesel** is non-toxic, readily biodegradable and essentially free of sulfur and aromatics.
- **Griesel** is easier on humans, too. Vessel operators report a noticeable change in exhaust odor. The reduction in smell and change of odor are more palatable with INDUSTRY workers. In fact, it's been compared to the smell of French fries. **Griesel** users also report having no eye irritation.
- **Griesel** offers more environmental benefits. For research Heaters and consumers using commercial Furnaces, Boiler, **Griesel** offers a more environmentally-friendly alternative to regular LDO. Because it is non-toxic and biodegradable, consumers and researchers may pressure owners for Griesel use, especially in sensitive or protected areas.
- **Griesel** can work in several INDUSTRIAL factions.
- Because **Griesel** can replace or blend with petroleum LDO with little or no Burner modifications, it is a viable alternative to several categories of the industry, including: which consume about 95 million gallons of LDO fuel annually.
- **Griesel** exhaust is less offensive. The use of **Griesel** results in a noticeable, less offensive change in exhaust odour, which can be a real benefit in confined spaces. In fact, equipment operators have compared it to the smell of French fries. Users also report having no eye irritation. Since Griesel is oxygenated, Fire engines have more complete combustion than petroleum LDO.

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