

# DIRGHAYU

**Green - Bio Based Hydraulic Fluid**  
**IPE/PB 240/HO Grade 32, 46, 68**



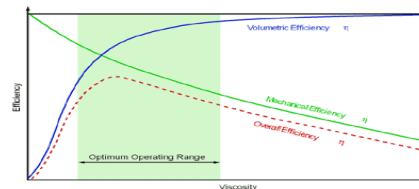
## 'PRODUCT INFORMATION'

Hydraulic systems are widely used in the manufacturing, construction, mining, transport, textiles, cement & many industries, for precise & speedy movements, or to hammer or shear or press operations. In Hydraulic systems the pumps develop the required pressure on the hydraulic fluid from the sump & circulate the same through activating elements like piston cylinders, control valves & return back to the sump.

In case of mineral oil based hydraulic fluids, Viscosity variations associated with low starting temperature and high operating Temperatures, caused lower system efficiency and reliability.

The overall efficiency is product of hydro-mechanical & volumetric efficiency. While starting at low operating temp, high viscosity reduces the hydro-mechanical efficiency of hydraulic systems, resulting in reduced system performance, lubricant starvation and cavitations.

During operations, the viscosity goes down with rise in temperature. This result in ruptures in the lubricant film causing metal to metal contact resulting wear within the pump .This adds to fluid heating. This creates loss of volumetric efficiency and also starts destructive cycle of rising temps, accelerated wear and increased internal leakages.

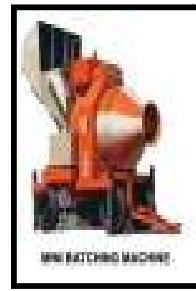


Relation of Viscosity to Pump efficiency

Hence, MEHF synthetic hydraulic fluids were developed with high viscosity index of 150 against 90 to 95 of petroleum based hydraulic fluids. This change of high viscosity index and medium evaporation rate caused saving of about 20 % of energy (ref:-www.MEHF- The Benefits of Maximum Efficiency Hydraulic Fluids).

***Dirghayu bio-based Hydraulic fluids*** are surpassing all the above specs of MEHF hydraulic fluids. It has high lubricity, polar nature, high viscosity index, high pressure withstanding qualities & many more.

***With such exclusive performance surpassing MEHF, 'Dirghayu' is really Super Efficiency Hydraulic Fluid, & more .....***



# DIRGHAYU' SUPER EFFICIENCY HYDRAULIC FLUID (SEHF)

'Dirghayu' *Hydraulic fluids have surpassed the MEHF grade lubricants.* The viscosity index of 'Dirghayu hydraulic fluid is between **180 to 200 as compared to 150** of MEHF specs. Moreover, Dirghayu hydraulic fluids are having **more lubricity than MEHF (almost 1.5 times MEHF)**. The natural result of high lubricity is much less friction & **more than 30% energy saving**. The high viscosity index & less temperature rise due to friction will eliminate problems related to difference in viscosities with cold start & high temperature operations. Less friction & less temperature rise means **longer life of system (pumps, valves etc) & longer life of hydraulic fluid**. Further improvement is in low evaporation rate. This **reduces the Top Up**. Being bio-based, Dirghayu Hydraulic fluids are **biodegradable & non toxic**. Hence there are **No botherations (ETP) of disposal**.

## TYPICAL CHARACTERISICS OF DIRGHAYU HYDRAULIC FLUID

Sr. No.	Property	Test Method	Unit	Hydraulic Oil- IPe/PB 240/HO		
				Grade 32	Grade 46	Grade 68
1	Appearance	Visual		Light Yellow	Light Yellow	Light Yellow
2	ISO Grade	ISO 3448		32	46	68
3	Density @ 15°C	Hydrometer Method	Kg/m <sup>3</sup>	0.890	0.885	0.880
4	pH	pH Method		7	7.2	7
5	Viscosity @ 40°C	ASTM D 445	cSt	38.28	48	69.6
6	Viscosity @ 100°C	ASTM D 445	cSt	8.2	9.8	12.54
7	Viscosity Index	ASTM D 2270		197	196	180
8	Flash Point	ASTM D 92	°C	170	170	170
9	Acid Value	AOCS Te 1a-64	mg KOH/ gm	0.89	0.85	0.8
10	Four Ball Scar	ASTM D 4172	mm	0.48	0.48	0.5
11	Four Ball Weld Load	ASTM D 2783	Kg	200	200	200
12	Pour Point	ASTM D 97	°C	(-) 3	(-) 3	(-) 3

### ADVANTAGES AND COST JUSTIFICATION FOR DIRGHAYU HYDRAULIC FLUID:-

- **ENERGY SAVING- 30% or more.**
- **LESS CONSUMPTION OF HYDRAULIC FLUID, LONGER LIFE CYCLE. VERY LESS TOP-UP.**
- **LESS WASTE, SPILL, LEAKAGE, NO CLEANING BOTHERATION.**
- **LONG LIFE OF THE SYSTEM, VERY LESS FRICTION & TEMPERATURE RISE.**
- **ENVIRONMENT FRIENDLY, BIODEGRADABLE, NON TOXIC.**

#### **Manufactured by**

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