

## **ENKLO FRWG**

Enklo FRWG is a hydraulic oil formulated from glycols for meeting the fire resistant requirements in fire prone areas in Steel, Mining, Die-Casting and Plastics industries. It is a true solution of glycols and water.

This grade is composed of Polyalkylene Glycols, selected additives for wear reduction, corrosion inhibitors, anti-oxidants, anti-foamants and water. The operating temperature of the oil ranges from  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ . This oil is suitable for use in all low temperature applications without any chance of freezing and gelling.

This oil meets IS: 10532 (part-3) – 1993 and HF-C classification of European Mines Safety Commission.

### **PERFORMANCE BENEFITS:**

- High viscosity index and good shear stability
- Excellent stability
- Good compatibility with all types of seals, hose materials, and metals
- Good antiwear properties
- Excellent boundary lubrication
- Very good rust protection properties

### **APPLICATION:**

This oil is suitable for use in the hydraulic systems of coke oven battery carrier, crane hydraulics in high temperature regions of Steel Plants. It is used in control governors in steam turbines, control valves in presence of superheated steam in Power Plants. It is also suitable for use in hydrostatic systems in Plastics and Die-Casting industries.

MANUFACTURING SPECIFICATIONS	22		46		68		METHOD OF TEST 1S 1448 ASTM OTHER
	MIN	MAX	MIN	MAX	MIN	MAX	
APPEARANCE	CLEAR						VISUAL
DENSITY @ 15°C, gm/cc			1.05 1.09				P 16 D 1298 IP 180
FOAM TENDENCY / STABILITY, ml SEQUENCE I	150/NIL		150/NIL		150/NIL		P 67 D 892 IP 146
RUSTING TEST, WITH SYNTHETIC SEA WATER	PASS		PASS		PASS		IS 10532 : 1983 PT 2
KINEMATIC VISCOSITY @ 40°C, cSt	19.8 24.2		41.5 50.6		61.2 74.8		P 25 D 445 IP 71
WATER CONTENT, % VOLUME	32 36		32 36		32 36		P 40 D 95 IP 74
FIRE RESISTANCE CHARACTERISTICS	SHALL PASS THE TEST						IS : 7895
PUMP WEAR TEST TOTAL RING AND VANE MASS LOSS, mg	500		500		500		D 2882
pH VALUE	8.5 10.5		8.5 10.5		8.5 10.5		IS : 5741 : 1970
POUR POINT, °C	-10		-10		-10		P 10 D 97 IP 15
<b>DESCRIPTION : FIRE RESISTANT HYDRAULIC FLUIDS MEETING IS 10532 : 1983 PART 3</b>							

The specifications shown above are manufacturing limits. Typically the pH of the product is 9.2, Reserve alkalinity is 18 - 19 and pump ring and vane losses are less than 120 mg. The four ball wear scar dia is 0.36 for ISO VG 68 and Timken OK loads 25 Lbs. The typical viscosity indexes are above 250. The water content is the % water added and normally varies between the limits shown.

#### Compatibility of Houghton H'safe with HPC Enklo FRWG 46.

Characteristics	H Safe 190 (A)	Enklo FRWG 46 (B)	10A + 90 B	50A + 50 B	90A + 10 B
COLOUR	RED	RED	RED	RED	RED
DENSITY@ 15°C, gm/cc	1.0789	1.0819	1.0807	1.0805	1.08
VISCOSITY cSt @40 deg C	39	44	43	42	41
pH	9.5	9.5	9.5	9.5	9.5
RESERVE ALKALINITY, ml	17	17.3	17.1	17.2	17.2
FOUR BALL WSD, mm	0.49	0.46	0.47	0.47	0.47
RUST TEST	PASSES	PASSES	PASSES	PASSES	PASSES
FOAM TEST SEQ I	120/0	70/0	70/0	70/0	70/0

The test results show that the two fluids are compatible in all proportions and will not show any loss of performance when mixed.