# Eiffel Elect Oil IH Inhibited Oils

**High Quality Transformer Oil**

## Product Data Sheet

### Product Description

Eiffel Elect Oil IH Inhibited Transformer oils are severely refined hydro-cracked / hydro-treated virgin inhibited insulating oils with highest degree of purity and stability. It is manufactured from judiciously selected blend of latest technology feed stocks, which is highly suitable for all grades of Power & distribution Transformers, Circuit Breakers, Oil filled switches and X-ray equipment.

### Features & Benefits

- Very low sulphur and no DBDS.
- Low Pour point.
- High dielectric strength.
- Non corrosive as tested by all present methods, DIN & ASTM tests & New IEC 62535 method.
- Low viscosity oils offering excellent and fast heat transfer.
- Higher Flash point, resulting on Low evaporation losses and better safety
- Remarkably low sludge and acidity formation, in both ageing and oxidation tests, results in longer life of oil and equipment
- Compatible with transformer construction material.

### Application

Eiffel Elect Oil IH Inhibited Transformer oils are highly suitable for all grades of

- Power Transformers, Distribution Transformers
- Circuit Breakers
- Oil filled switches
- X-ray equipment.

### Specifications

**Eiffel Elect Oil IH Inhibited Transformer oils** conforms to and exceed the requirements of ASTM D 3487 Type II & IEC 60296:2012 (Table 2: I – High Grade requirements)

**Eiffel Elect Oil IH Inhibited Transformer oils** are High Grade Inhibited Transformer oil has superior oxidation stability – meeting the high grade requirements as specified in IEC 60296:2012, high dielectric strength and are used in equipment requiring operations at high elevated temperatures & greater oxidation resistance.

### Typical Characteristics

| TEST DESCRIPTION | TEST METHOD | SPECIFICATION LIMITS | TYPICAL VALUES |
|---|---|---|---|
| Function | | | |
| Kinematic Viscosity at 40° C $mm^2/s$, Max | ISO 3104 | 12.0 | 9.7 |
| at -30° C $mm^2/s$, Max | | 1800 | 600 |
| Pour Point °C, Max | ISO 3016 | ≤ -40 | -42 |
| Water Content, in Bulk, mg/kg, Max | IEC 60814 | 20 | 12 |
| in Drum & IBC mg/kg, Max | | 30 | 20 |
| Break Down Voltage, kV, Min | | | |
| As Delivered | IEC 60156 | 30 | 50 - 65 |
| After treatment | | 70 | 70 - 80 |
| Density at 20 °C, g/ml, Max | ISO 12185 / ISO 3675 | 0.895 | 0.821 |
| DDF at 90 °C, Max | IEC 60247 / IEC 61620 | 0.005 | 0.0005 |

*The above figures are typical of blends with normal production tolerance and do not constitute a specification.*

| | | | |
|---|---|---|---|
| **Refining/stability** | | | |
| Appearance | Visual | Transparent Clear & odourless liquid free from suspended impurities | Transparent Clear & odourless liquid free from suspended impurities |
| Neutralisation Value / Acidity, mg KOH/g, Max | IEC 62021-1 / IEC 62021-2 | 0.01 | < 0.001 |
| Interfacial tension, mN/m, Min | EN 14210 / ASTM D 971 | 40 | 48 |
| Total Sulphur Content, % , Max | ISO 14596 | 0.05 | < 0.01 |
| Corrosive Sulphur, silver strip, 100°C, 18 hrs | DIN 51353 | Non Corrosive | Non Corrosive |
| Cu Strip & Paper 150 °C, 72 hrs | IEC 62535 | Non corrosive | Non corrosive |
| Dibenzyldisulphide (DBDS) | IEC 61297-1 | Not Detectable | Not Detected |
| Antioxidant Additives, % Max | IEC 60666 | 0.3 – 0.40 | 0.3 |
| 2-Furfural content, mg/kg, Max | IEC 61198 | 0.05 | Nil |
| **Performance** | | | |
| Oxidation Stability,500 hrs | | | |
| - Total acidity, mg KOH/g, Max | IEC 61125 : 1992 Method C | 0.30 | 0.02 |
| - Sludge, %, Max | | 0.05 | < 0.01 |
| - DDF at 90°C, Max | IEC 60247 | 0.05 | 0.005 |
| **Health, safety and environment (HSE)** | | | |
| Flash Point, PMCC, °C , Min | ISO 2719 | 135 | 150 |
| Polycyclic Aromatics (PCA) content, % Max | BS 2000 (P: 346) | 3.00 | < 1 % |
| Polychlorinated biphenyls (PCB) content | IEC 61619 | Not Detectable | Not Detected |
| **Bio Degradability** | | | |
| OECD 301 B, $CO_2$ Evolution Test | OECD 301B | - | "Readily Biodegradable" (> 60 %) |
| **Conforms to Standards** | | | |
| IEC 60296:2012 Table 2 : I – High Grade requirements | | ✔ | ✔ |
| ASTM D3487 Type II | | ✔ | ✔ |

*The above figures are typical of blends with normal production tolerance and do not constitute a specification*

## Packaging Options:

Eiffel Elect Oil IH Inhibited Transformer oils are offered in 200-210 litres of steel drums and also in bulk in Flexi bags or ISO tanks.

## Storage Precautions:

Extreme care is taken while packing these products, including filling of drums in inert atmosphere, as Electrical Insulating oils / Transformer oils are very sensitive to very minute concentrations of contaminants, such as moisture, particulate matter, fibers, etc. Hence, care should be taken to store Eiffel Elect Oil IH Inhibited Transformer oil in a clean and dry condition. It is strongly recommended that all storage tanks / drums be maintained such that oil is not in contact with atmospheric air. Also these oils should always be stored indoors in climate controlled environments.