

242 Primrose Turbine Oil

DESCRIPTION:

242 Primrose Turbine Oil has been developed for use with steam, water and gas turbines. In most instances the source of energy in electric turbo-generators does not change the lubrication requirement. Steam, water and gas turbines all place similar demands on the lubricant. The development of 242 has paralleled the advances in design of these types of generating equipment.

COMPOSITION:

242 Primrose Turbine Oil is blended with superior quality 100 VI base oils obtained through complex solvent refining and de-waxing, and the following additives:

ANTIOXIDANTS - Air and moisture inevitably present in the lubrication system. Operating temperatures which have risen with the increasingly compact design using steam at higher pressures and temperatures, and constant contact of the oil with metals such as copper and iron place heavy demands on the oxidation stability of the lubricant. The stability of 242 is obtained by blending a carefully selected high-VI base oil and an oxidation and corrosion inhibitor to obtain optimum performance.

ASTM D943 is the standard method of test for oxidation characteristics of inhibited steam-turbine oils. This test determines oxidation-inhibitor life of inhibited turbine oils, including those used for turbine reduction gears. 242 exhibits over 2½ the oxidation-inhibitor life required for most applications.

RUST INHIBITORS - 242 Primrose Turbine Oil is inhibited to prevent rust formation on those areas normally bathed by the oil. Since it is practically impossible to eliminate all moisture and air which gain entrance to the turbine lubricating oil, the interior surfaces of a turbine lubrication system are a source of rust unless protected.

ASTM D665 is the standard test method for rust-preventing characteristics of steam-turbine oil in the presence of water. This test measures the ability of steam-turbine oils and heavier than water fluids, including those used for steam-turbine gears, to aid in preventing the rusting of ferrous parts should water become mixed with the oil. In procedure A, distilled water is used for land turbine use where condensed steam or humidity from air is the water source; in procedure B, synthetic sea water should be used for marine-service ocean-going vessels, 242 Primrose Turbine Oil meets both test procedures.

ANTI-FOAM AGENT - Foaming, brought about by the presence of entrapped air in the oil, reduces oil flow to the bearings and causes erratic governor operation. 242 is manufactured to free itself of air very rapidly.

POUR DEPRESSANTS - 242, with pour depressants, can be used in equipment which operates outside at low temperatures.

PERFORMANCE CHARACTERISTICS:

- Lubricates bearings of prime mover and electrical generators, main and thrust bearings
- Serves as a coolant
- Serves as a hydraulic fluid in governor and other control gears
- Lubricates reduction gears
- Acts as a sealing medium to prevent loss of hydrogen from hydrogen-cooled generators
- Prevents the formation of rust, corrosion and sludge within the confines of the lubricating system
- Allows rapid separation of water and solids to aid purification system
- Resists foaming

USES:

242 Primrose Turbine Oil may be used as a turbine oil, circulating oil, or electric motor oil to provide long life, minimize rusting and foaming, and withstand extreme pressures.



PRIMROSE PLUS

242 Primrose Turbine Oil

APPLICATIONS:

242 may be used in steam, water and gas turbines. Its high viscosity index and low pour point allow outdoor use at cold temperatures. Its oxidation inhibitors provide stability at high temperatures and pressures.

TYPICAL SPECIFICATIONS:

| | ASTM Method | Extra Light | Light | Medium | Heavy |
|---|-------------|-------------|-------|--------|-------|
| Viscosity, SUS @ 100°F. | D-2161 | 150 | 180 | 315 | 470 |
| Viscosity, SUS @ 210°F. | D-2161 | 43.3 | 45.9 | 53.4 | 63.5 |
| Viscosity Index | D-2270 | 104 | 104 | 103 | 100 |
| cSt @ 40°C | D-445 | 29.8 | 38.5 | 67.8 | 101.4 |
| Flash, C.O.C., °F. | D-92 | 440 | 440 | 445 | 470 |
| Fire, C.O.C., °F. | D-92 | 460 | 460 | 490 | 515 |
| Pour, °F. | D-97 | -25 | -25 | -20 | 0 |
| Color | D-1500 | 0.5 | 1.0 | 1.5 | 2.0 |
| Gravity, °API | D-287 | 32.4 | 31.8 | 30.0 | 29.0 |
| Total Acid Number | | | | | |
| mg KOH/g | D-664 | 1.3 | 1.3 | 1.3 | 1.3 |
| Copper Strip, 3 hr/212°F. | D-130 | 1 | 1 | 1 | 1 |
| Conradson Carbon, % | D-189 | .25 | .25 | .25 | .25 |
| Aniline Point, °F. | D-611 | 222 | 222 | 235 | 245 |
| Demulsibility at 130°F. | D-1401 | | | | |
| Separation, minutes | | 15 | 15 | 15 | 15 |
| Foam, Tendency/Stability | D-892 | | | | |
| Sequence 1, ml. | | 25/0 | 25/0 | 25/0 | 25/0 |
| Sequence 11, ml. | | 25/0 | 25/0 | 25/0 | 25/0 |
| Sequence 111, ml. | | 25/0 | 25/0 | 25/0 | 25/0 |
| Rust, Distilled Water | D-665A | Pass | Pass | Pass | Pass |
| Rust, Synthetic Sea Water | D-665B | Pass | Pass | Pass | Pass |
| Oxidation Stability, hrs. | D-943 | 2800 | 2800 | 2700 | 2600 |
| 4-Ball Wear Scar, mm. (20 kg. 1800 rpm, 130°F., 60 min.) | D-2266 | .35 | .35 | .35 | .35 |