



## Product Data

### Energol XEP Range

Antiwear turbine lubricant

#### Description

The BP Energol XEP range of turbine oils is formulated from severely hydro treated premium mineral base stocks together with a complex additive system to provide requisite antiwear performance and oxidative stability.

#### Application

The Energol XEP range is primarily intended for the lubrication of highly loaded industrial gas turbines, aero derivative power turbines & driven machinery and turbo machinery where the lubricant is exposed to high local temperatures during operation and the heat soaking period during run down.

The Energol XEP range possess the requisite air release, foaming and water separation properties for steam turbines making them suitable and compliant for gas and steam turbines in single train sharing a common oil reservoir.

Specific grades within the Energol XEP range meet or exceed the requirements of:

- BS 489: 1999
- DIN 51515 Part 1 (L-TD)
- DIN 51515 Part 2 (L-TG)
- General Electric
  - GEK 28143b
  - GEK 32568k
  - GEK 46506E
  - GEK 101941A
  - GEK 107395A
- General Electric Oil & Gas
  - ITN 52220.02
  - ITN 52220.03
- Alstom HTGD 90117
- Siemens
  - TLV 9013 04
  - TLV 9013 05
  - MAT812108
  - MAT812109
- Solar ES 9-224 AA Class II

#### Advantages

- Meets or exceeds a wide range of both steam and gas turbine specifications
- Designed for a wide range of applications making it possible to rationalise grades without risk of misapplication
- Excellent thermal / oxidation stability
- Good water separation and corrosion inhibition performance

## Typical Characteristics

Name	Method	Units	Energol XEP 32	Energol XEP 46	Energol XEP 68
ISO Viscosity Grade	-	-	32	46	68
Density @ 20°C / 68°F	ISO 12185 / ASTM D4052	kg/m <sup>3</sup>	852	856	860
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	32	46	68
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	5.5	7.1	9.2
Viscosity Index	ISO 2909 / ASTM D2270	-	111	109	107
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	0/0	0/0	0/0
Air Release @ 50°C / 122°F	ISO 9120 / ASTM D3427	minutes	2	3	4
Water Separation @ 54°C / 129°F (40/37/3)	ISO 6614 / ASTM D1401	minutes	10	10	10
Pour Point	ISO 3016 / ASTM D97	°C (°F)	-18 (0)	-18 (0)	-18 (0)
Flash Point - open cup method	ISO 2592 / ASTM D92	°C (°F)	>215 (>419)	>220 (>428)	>220 (>428)
Acid Number	ISO 6619 / ASTM D664	mgKOH/g	0.1	0.1	0.1
Rust test - synthetic seawater (24 hrs)	ISO 7120 / ASTM D665B	rating	Pass	Pass	Pass
Copper corrosion (3 hrs@100°C/ 212°F)	ISO 2160 / ASTM D130	rating	1b	1b	1b
Oxidation Stability - Rotating Pressure Vessel test	ASTM D2272	minutes	1300	1300	1400
Oxidation Stability - TOST	ISO 4263-1 / ASTM D943	hours	>10000	>10000	>10000
FZG Gear Scuffing test - A/8.3/ 90	ISO 14635-1 / ASTM D5182	Failure Load Stage	10	10	10

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

## Storage

All packages should be stored under cover. Where outside storage is unavoidable drums should be laid horizontally to avoid the possible ingress of water and the obliteration of drum markings. Products should not be stored above 60°C, exposed to hot sun or freezing conditions.

Energol XEP Range  
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