

Balmerol[®] Protomac SP (SPL) Series

Superior Quality Industrial Gear Oil

Technical Data Sheet

Product Description:

Balmerol Protomac SP (SPL) Series are premium quality all purpose industrial gear oils. Balmerol Protomac SP (SPL) Series oils are blended from carefully selected paraffinic basestocks and combination of synergistic additives to achieve the required performance level of different standards as well as compatibility with normal seal materials. Balmerol Protomac SP (SPL) Series oils can be filtered or centrifuged without the loss of additives.

Balmerol Protomac SP (SPL) Series **meets** the following specifications:

- IS : 8406-1993 – Reaffirmed 2001
- AGMA 9005-E02 EP
- DIN 51517 Part 3, CLP
- ISO 12925-1 Type CKD
- ISO 12925-1 Type CKC
- US Steel : 222 and 224
- IPSS: 1-09-003

Features & Benefits:

| | |
|--|--|
| Very good EP/ Anti-wear properties | Enhanced protection of gears and bearings leading to more reliable operation |
| Lower Deposit formation and superior Oxidation & Thermal stability | Clean performance even during high temperature operation and also ensuring higher oil drain interval |
| Superior filterability characteristics | No loss of additives during filtration |
| Compatible with normal seal materials | Less leakage, lower chance of ingress of contaminants in equipment, better equipment protection and housekeeping |

Balmerol Protomac SP (SPL) Series helps reduce overall maintenance and operating costs.

Applications / Recommendations:

Balmerol Protomac SP (SPL) Series is recommended for lubrication of all types of circulation, spray and splash or dip bath lubrication mechanisms.

- Most suitable for use in all conventional types of gears, sliding mechanisms, chain drives and flexible couplings.

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- Recommended for use in mechanisms operating under heavy / shock loads and vibrations.
- Suitable for use in continuous recirculation systems incorporating filters

Typical Properties:

| Balmerol Protomac SP (SPL) | | | | |
|---|----------------------|-----------------------|-----------------------|-----------------------|
| Properties | Protomac SP 68 (SPL) | Protomac SP 100 (SPL) | Protomac SP 150 (SPL) | Protomac SP 220 (SPL) |
| ISO VG Grade | 68 | 100 | 150 | 220 |
| Viscosity, ASTM D 445 | | | | |
| cst @ 40°C | 62 -72 | 90 -110 | 140 - 165 | 200 - 240 |
| Viscosity Index, ASTM D 2270 | 90 minimum | 90 minimum | 90 minimum | 90 minimum |
| Pour Point, °C ASTM D 97 | -6 max | -6 max | -6 max | -3 max |
| Flash Point, °C ASTM D 92 | 205 minimum | 205 minimum | 205 minimum | 230 minimum |
| Copper Strip Corrosion, ASTM D 130, 3 hrs @ 100°C | Pass 1 | Pass 1 | Pass 1 | Pass 1 |
| Rust Characteristics, ASTM D665 | | | | |
| ASTM D 665/A | No Rust | No Rust | No Rust | No Rust |
| ASTM D 665/B | No Rust | No Rust | No Rust | No Rust |
| FZG Test (A/8.3/90), Fail Stage, DIN 51354 | 12 | 12 | 12 | 12 |
| Four Ball Wear Test, wear min, ASTM D 4172/B | 0.35 max | 0.35 max | 0.35 max | 0.35 max |
| Four Ball EP Test (Weld Point) Kg, ASTM D 2596 | 250 minimum | 250 minimum | 250 minimum | 250 minimum |
| Timken EP Test (OK Load) lb, ASTM D 2782 | 60 | 60 | 60 | 60 |
| Foam Stability, ASTM D 892 | | | | |
| Sequence I | Nil | Nil | Nil | Nil |
| Sequence II | Nil | Nil | Nil | Nil |
| Sequence III | Nil | Nil | Nil | Nil |
| Demulsibility, ASTM D 1401, min to 40 - 37 -3 | 20 | 20 | 20 | 30 |

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| Balmerol Protomac SP (SPL) | | | |
|---|-----------------------|-----------------------|-----------------------|
| Properties | Protomac SP 257 (SPL) | Protomac SP 320 (SPL) | Protomac SP 460 (SPL) |
| ISO VG Grade | - | 320 | 460 |
| Viscosity, ASTM D 445 | | | |
| cst @ 40°C | 241 -280 | 300 -350 | 416 -500 |
| Viscosity Index, ASTM D 2270 | 90 minimum | 90 minimum | 90 minimum |
| Pour Point, °C ASTM D 97 | -3 max | -3 max | -3 max |
| Flash Point, °C ASTM D 92 | 230 minimum | 230 minimum | 230 minimum |
| Copper Strip Corrosion, ASTM D 130, 3 hrs @ 100°C | Pass 1 | Pass 1 | Pass 1 |
| Rust Characteristics, ASTM D665 | | | |
| ASTM D 665/A | No Rust | No Rust | No Rust |
| ASTM D 665/B | No Rust | No Rust | No Rust |
| FZG Test (A/8.3/90), Fail Stage, DIN 51354 | 12 | 12 | 12 |
| Four Ball Wear Test, wear min, ASTM D 4172/B | 0.35 max | 0.35 max | 0.35 max |
| Four Ball EP Test (Weld Point) Kg, ASTM D 2596 | 250 minimum | 250 minimum | 250 minimum |
| Timken EP Test (OK Load) lb, ASTM D 2782 | 60 | 60 | 60 |
| Foam Stability, ASTM D 892 | | | |
| Sequence I | Nil | Nil | Nil |
| Sequence II | Nil | Nil | Nil |
| Sequence III | Nil | Nil | Nil |
| Demulsibility, ASTM D 1401, min to 40 - 37 -3 | 30 | 40 | 40 |

Health and Safety:

Balmerol Protomac SP (SPL) Series oils are not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet (MSDS) are followed. For MSDS please contact your local Balmer Lawrie Marketing / Technical Service team.

For Further Information, contact:

Balmer Lawrie & Co. Ltd.

SBU: Greases & Lubricants (G&L) Division

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