

# Balmerol® Protomac HLP Series

## Premium Hydraulic Oil

Technical Data Sheet

### Product Description:

Balmerol Protomac HLP is premium quality hydraulic oils, blended from highly refined base stocks and synergistic additive system. Balmerol Protomac HLP oil has outstanding anti-wear properties, excellent oxidation stability and high load carrying capacity as determined by FZG rating. Balmerol Protomac HLP oil shows low wear in vane pump wear test and has good filterability ensuring longer service life. Balmerol Protomac HLP oil is formulated to meet Cincinnati Milacron P 68, P 69 and P 70, DIN 51524 Part 2, Denison HF-0, HF-2, IS: 10522-1983 (Reaffirmed 1993) and IS: 11656-1986 (Reaffirmed 1991) specifications.

### Features & Benefits:

Superior oxidation & thermal stability	Ensuring longer service life of fluid under operating conditions
Low deposit forming tendency	Components remain clean during operation, lesser clogging of filters, control valves etc.
Better Anti-wear properties	Reduction in wear of components like pumps, valves etc leading to higher equipment reliability
Very good Rust protection & Demulsibility characteristics	Easily sheds off water from the oil and ensures better component protection

Balmerol Protomac HLP Series provides excellent protection to hydraulic systems and ensures lower equipment failures, longer oil drain intervals and overall lower maintenance cost.

### Applications / Recommendations:

Balmerol Protomac HLP oil is recommended for use in high pressure hydraulic systems for industrial and mobile applications. Balmerol Protomac HLP oil is ideally suited for equipment employed in underground and open cast mines, foundries, steel plants etc and operating under severe conditions of pressure, speed and temperatures. It is also suitable for sophisticated high performance Electro Hydraulic and Numerically Controlled machines.

Balmerol Protomac HLP Series fully confirms to DIN 51524 Part 2 (HLP) specifications.  
Super clean Balmerol Protomac HLP is available in special lacquer coated or HDPE drums

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### Typical Properties:

Balmerol Protomac HLP Series				
Properties	Protomac HLP 32	Protomac HLP 46	Protomac HLP 68	Protomac HLP 100
ISO VG Grade	32	46	68	100
Viscosity, ASTM D 445				
cst @ 40°C	32.9	46.0	66.5	95.0
cst @ 100°C	5.75	7.00	9.24	11.20
Viscosity Index, ASTM D 2270	> 105	> 100	> 100	> 95
Pour Point, °C ASTM D 97	-30	- 30	- 27	- 24
Flash Point, °C ASTM D 92	216	228	230	232
Specific Gravity, ASTM D 1298	0.844	0.848	0.855	0.86
Copper Strip Corrosion, ASTM D 130, 3 hrs @ 100°C	1b	1b	1b	1b
Rust Characteristics, ASTM D665				
ASTM D 665/A	Pass	Pass	Pass	Pass
ASTM D 665/B	Pass	Pass	Pass	Pass
FZG Test (A/8.3/90), Fail Stage, DIN 51354	11	11	11	11
Foam Stability, ASTM D 892				
Sequence I	Nil	Nil	Nil	Nil
Sequence II	Nil	Nil	Nil	Nil
Sequence III	Nil	Nil	Nil	Nil
Neutralization No, TAN mg KOH/ gm	< 1	< 1	< 1	< 1
Demulsibility, ASTM D 1401 , minutes to 40-37 -3	10	10	10	15

### Health and Safety:

Balmerol Protomac HLP 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  
P- 43, Hide Road Extension  
Kolkata: 700088  
www.balmerlawrie.com