

# Balmerol<sup>®</sup> Synthgear M Series

Fully Synthetic Gear / Circulating Oil

Technical Data Sheet

## Product Description:

Balmerol Synthgear M Series is fully synthetic industrial gear / circulating oil has been developed for maximum protection of gears and bearings operating under severe conditions and extremes of application temperature. The high viscosity index of these products ensures optimum viscosity both at high and low temperatures which not only provide wider operating temperature range but also ensures equipment protection at extreme temperatures by providing sufficient oil film. Balmerol Synthgear M Series also contains Extreme Pressure /Antiwear additives, Antioxidants and Rust & Corrosion Inhibitors to provide maximum equipment protection as per the application requirement.

Balmerol Synthgear M Series **meets** the following specifications:

- DIN 51517 Part 3 , CLP
- ISO 12925-1 CKD
- AGMA 9005-E02
- U.S. STEEL 224

## Features & Benefits:

High Viscosity Index	Optimum viscosity / film thickness at operating temperatures. Better equipment protection both at low & high temperatures Wider operating temperature range
Excellent Oxidation & Thermal Stability	Longer Oil Drain Interval, lower oil consumption Better equipment performance, cleaner operation
High load carrying characteristics	Better protection of equipment under heavy / shock loads
Very good Rust & Corrosion protection	Better protection of bearings, lower maintenance cost

Balmerol Synthgear M Series helps reduce costly gear and bearing failures, leading to lower Maintenance cost and higher Productivity.

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## Applications / Recommendations:

Balmerol Synthgear M Series is recommended for use in industrial gears and bearings where operating or bulk oil temperatures are such that conventional lubricants do not give satisfactory performance. It is especially recommended for moderate speed gears operating at high loads and extreme temperatures. Balmerol Synthgear M Series is compatible with metallic materials as well as elastomeric seals.

## Typical Properties:

<b>Balmerol Synthgear M</b>			
<b>Properties</b>	<b>Synthgear M 68</b>	<b>Synthgear M 100</b>	<b>Synthgear M 150</b>
ISO VG Grade	68	100	150
Base Oil	PAO	PAO	PAO
Viscosity, ASTM D 445			
cst @ 40°C	66.2	98	149
cst @ 100°C	10.1	13.6	18.7
Viscosity Index, ASTM D 2270	138	139	142
Pour Point, °C ASTM D 97	- 48	- 45	- 42
Flash Point, °C ASTM D 92, Minimum	220	220	220
Oxidation Stability @ 130oC, 312 hrs, 10 L/ hr, air			
a) Viscosity Increase, % max	6	6	6
b) Precipitation No.	Traces	Traces	Traces
Copper Strip Corrosion, ASTM D 130, 3 hrs @ 100°C	1	1	1
Rust Characteristics, ASTM D665	Pass	Pass	Pass
FZG Test (A/8.3/90), Fail Stage, DIN 51354	12	12	12
Four Ball Wear Test, wear min, ASTM D 4172/B	0.4	0.4	0.4
Four Ball Weld Load, Kg, ASTM D 2783	250	250	250
Timken EP Test (OK Load) lb, ASTM D 2782	60	60	60

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Balmerol Synthgear M				
Properties	Synthgear M 220	Synthgear M 320	Synthgear M 460	Synthgear M 680
ISO VG Grade	220	320	460	680
Base Oil	PAO	PAO	PAO	PAO
Viscosity, ASTM D 445				
cst @ 40°C	224	326	440	660
cst @ 100°C	25.4	34.0	42.8	57.0
Viscosity Index, ASTM D 2270	144	147	150	150
Pour Point, °C ASTM D 97	- 42	- 36	- 36	- 33
Flash Point, °C ASTM D 92, Minimum	220	220	220	220
Oxidation Stability @ 130oC, 312 hrs, 10 L/ hr, air				
a) Viscosity Increase, % max	6	6	6	6
b) Precipitation No.	Traces	Traces	Traces	Traces
Copper Strip Corrosion, ASTM D 130, 3 hrs @ 100°C	1	1	1	1
Rust Characteristics, ASTM D665	Pass	Pass	Pass	Pass
FZG Test (A/8.3/90), Fail Stage, DIN 51354	12	12	12	12
Four Ball Wear Test, wear min, ASTM D 4172/B	0.4	0.4	0.4	0.4
Four Ball Weld Load, Kg, ASTM D 2783	250	250	250	250
Timken EP Test (OK Load) lb, ASTM D 2782	60	60	60	60

## Health and Safety:

Balmerol Synthgear M 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:

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