

## Product Data Sheet

### Circula PMA

#### Description and Applications

**Saheli Circula PMA** series premium quality ash less oils specially developed to meet the lubrication requirements of both dry and wet ends of paper machines. The state-of-the-art additive technology used in this oil resists oxidation, rust, corrosion, wear, emulsification and foam while providing excellent filterability and water separation.

**Saheli Circula PMA** has demonstrated improved performance in several key areas including corrosion protection in the SKF Emcor test with process water, EP performance in 4-ball weld load test and provides protection against sludge and corrosion in dry as well as wet conditions.

**Saheli Circula PMA** is especially suitable for applications where there are environmental concerns or restrictions on the presence of metals such as zinc or barium. These oils are available in three ISO viscosity grades (150, 220 and 320) and meet the requirements of several OEM paper machine oil specifications including those of Voith, Metso, FAG and SKF.

#### Applications

- Circulating systems of paper machines for both dry and wet sections.
- Paper machines using fine filters, super-heated steam or susceptible to severe water contamination.
- Circulating systems requiring oils with anti-wear/mild EP protection and good thermal and oxidative stability.
- Reduction gears and gear-head motors.
- Vacuum pumps, water pumps and suction box pumps.
- Crown Controlled Rolls (CC Rolls) and Extended Nip Presses (ENP).

Test Parameters	Test Method	Typical Results		
		150	220	320
<b>ISO VG</b>		<b>150</b>	<b>220</b>	<b>320</b>
Density @ 15°C gm/cm <sup>3</sup>	ASTM D1298	0.893	0.896	0.898
Viscosity Index	ASTM D2270	95	94	95
Viscosity @ 40°C (cSt)	ASTM D 445	155	216.9	311.6
Pour Point °C	ASTM D 97	-6	-6	-6
Flash Point (COC) °C	ASTM D 92	246	256	266
Rust Test	ASTM D 665A/B	Pass	Pass	Pass
Four-ball Weld, kg	ASTM DIN 51350/2	250	260	270
Four-ball Wear, mm	ASTM DIN 51350/3	0.32	0.30	0.31
RBOT, minutes	ASTM D 2272	375	400	350
SKF EMCOR, process water		0-1	0-0	0-0
Emulsion Test 30 Min. Max @82°C	ASTM D 1401	Pass	Pass	Pass
Foam test, foam after 10mn of setting for all sequences	ASTM D 892	Nil	Nil	Nil