



Everyday forward

RAJPROL® Rubber Process Oils

RA-WAX® Anti-ozone Waxes

Premium
OILS & WAXES
for the world
of RUBBER



rubber process oils

RAJPROL®

RAJPROL® Rubber Processing Oils are superior blends of aromatic and aliphatic components designed for processing of rubber and related polymers.

RAJPROL® Oils are classified as Aromatic, Paraffinic, Naphthenic and Special Grades depending on the chemical nature of the predominant constituent.

COMPATIBILITY OF RAJPROL® RUBBER PROCESSING OILS WITH VARIOUS RUBBERS

POLYMER	PARAFFINIC	NAPHTHENIC	AROMATIC
NR	Good	Good	Very Good
SBR	Good	Very Good	Very Good
BR	Very Good	Very Good	-
PBR	-	Good	Very Good
RR	Good	-	Very Good
EPDM	Very Good	Very Good	-

AROMATIC PROCESS OILS:

Aromatic Process Oils have higher solvency and superior compatibility with most rubber polymers. These oils exhibit low volatility and high viscosity for improved productivity and safety standards.

PARAFFINIC PROCESS OILS:

Paraffinic Process Oils are highly refined oils that have low solvency and high aniline point with low aromaticity, excellent colour, oxidation & thermal stability and also elastomer compatibility.

NAPHTHENIC PROCESS OILS:

Naphthenic Process Oils exhibit high solvency, good thermal stability, excellent compatibility and non-staining properties.

SPECIAL GRADE PROCESS OILS (LOW PAH OILS):

Special Grade Oils are produced by blending of judiciously selected base stocks resulting in oils of specific characteristics. These series of oils are guaranteed to meet with Poly cyclic Aromatic Hydrocarbon (PAH) limits specified by 1907/2006/EC, Annex XVII, Entry 50 (REACH), formerly EU directive 2005/69/EC.



RAJPROL® TYPICAL GRADES

TYPICAL PROPERTIES & CHARACTERISTICS	TEST DESCRIPTION	TEST METHOD ASTM	SPECIFICATION LIMITS					
			PARAFFINIC				NAPHTHENIC	
			P 1	100	P 250	460	N 2	NN 22
Appearance	VISUAL		CLEAR LIQUID					
Colour, Max	D 1500		2.5	2.5	4.5	5.5	5.0	1.0
Density @ 15.6°C, g/ml	D 4052	0.85 - 0.89	0.85 - 0.90	0.88 - 0.92	0.89 - 0.92	0.87 - 0.90	0.88 - 0.93	0.98 - 1.05
Kin. Viscosity@ 40°C, cSt	D 7042	27 - 35	90 - 110	240 - 260	414 - 506	18 - 25	19 - 24	—
Kin. Viscosity@ 100°C, cSt		—	10.5 (typ)	—	—	—	—	20 - 25
Aniline Point °C	D 611	90 - 110	>100	105 - 118	> 110	75 - 85	68 - 80	40 - 52
Flash Point °C, Min	D 92	200	230	250	250	150	150	220
Pour Point °C, Max	D 97	-3	0	-3	0	0	-30	+18
VGC	D 2501	0.82	0.82	—	0.81	0.84	—	—
Sulphur, %	D 4294	< 1.5	< 1.5	—	< 1.5	< 3	—	< 5
Clay Gel Analysis, %	D 2007	—	—	—	—	—	—	—
Polar Compounds		—	—	—	—	—	—	10
Aromatics		—	—	—	—	—	—	73
Saturates		—	—	—	—	—	—	16 - 17
Carbon Type Analysis, %	FTIR / D2140	—	—	—	—	—	—	—
C _P		> 60	> 60	> 60	> 60	10 - 18	48(typ)	—
C _N		35 Max.	35 Max.	35 Max.	35 Max.	—	43(typ)	—
C _A		4 - 12	4 - 12	4 - 12	4 - 12	—	9(typ)	—

RAJPROL® SPECIAL GRADE OILS

TYPICAL PROPERTIES & CHARACTERISTICS	TEST DESCRIPTION	TEST METHOD ASTM	SPECIFICATION LIMITS						
			P1/E	460 P/E	N2/E	P 1500/E2	P 3500/E	P 3700/E	P 5900/E
Appearance	VISUAL		CLEAR LIQUID					DARK LIQUID	
Colour, Max	D 1500	1.0	4.0	2.0	4.5			> 8.0	
Density @ 15.6°C, g/ml	D 4052	0.85 - 0.89	0.89 - 0.92	0.86 - 0.89	0.91 - 0.94	0.92 - 0.97	0.92 - 0.97	0.95 - 0.99	
Kin. Viscosity@ 40°C, cSt	D 445 / D 7042	27 - 33	440 - 480	18 - 25	345 - 390	630 - 770	640 - 780	To Report	
Kin. Viscosity@ 100°C, cSt		—	29 - 33	—	17 - 22	—	—	50 - 80	
Aniline Point °C	D 611	93-107	> 110	65 - 75	90	70 - 85	85 - 100	60 - 80	
Flash Point °C, Min	D 92	190	240	180	220	210	210	210	
Pour Point °C, Max	D 97	-3	0	-24	-6	-6	-6	+15	
VGC (typ)	D 2501	0.82	0.81	0.82	0.85	—	—	—	
Sulphur, %	D 4294	< 1.5	< 1.5	< 1.5	< 1.5	< 5	< 5	< 5	< 5
Carbon Type Analysis, %									
C _P	FTIR / D 2140	60 Min.	60 Min.	52 Max.	42 - 58	40 - 50	45 - 55%	50 - 62%	
C _N		30 Max.	35 Max.	25 Max.	25 - 40%	20 - 30	22 - 35%	31 - 37%	
C _A		3 - 12%	4 - 12%	25 Min.	14 - 20%	20 - 35	15 - 25%	5 - 15%	
Benzo(a) pyrene (BaP), ppm	EN16143: 2013 (GC-MS)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Sum of 8 listed PAH, EU, ppm		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

Note: The above data is indicative of recent average values only. Minor Variations, which do not affect product performance or Quality, may expected in manufacturing. Specific requirements can be custom-made on request.



anti-ozone waxes **RAOWAX®**

RAOWAX® - hydrocarbon wax blends are designed to protect rubber articles against atmospheric ozone attack by ensuring a tough, dry film on the cured rubber surface. The wax is impervious & long-lasting, giving effective protection throughout the life of the article.

RAOWAX® - will migrate to the surface of the cured rubber depending on the ambient temperature and the molecular weight and complexity of the wax components present in the blend. **RAOWAX®** - products can be designed to protect at specific temperatures or to operate over a wider temperature range.

ADVANTAGES OF USING RAOWAX®

- * Offers improved mixing efficiency
- * Reduces batch cycle times
- * Is soluble in Green - state compound
- * Imparts a stable, impervious film after curing
- * Ensures controlled migration characteristics to minimize excess bloom
- * Finds use in Natural Rubber and Synthetic Polymers alike
- * Wide range of products to suit individual applications and exposure
- * All batch tested and approved to guarantee chemical composition
- * Minimal batch to batch variation



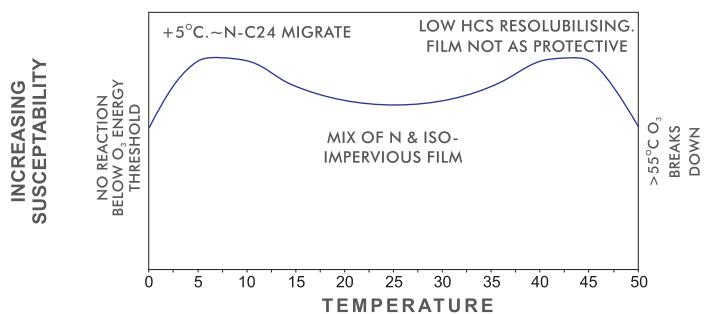
TYPICAL PHYSICAL PROPERTIES

PROPERTIES	UNIT	VALUE	TEST METHOD
Appearance		White / Light yellow pastilles	Visual
Congealing Point	°C	60 -75	ASTM D 938
Kinematic Viscosity @ 100°C	cSt	6.0 – 10.0	ASTM D 445
Refractive Index @ 100°C		1.42 – 1.44	ASTM D 1747
Carbon Number Distribution		Available on request	

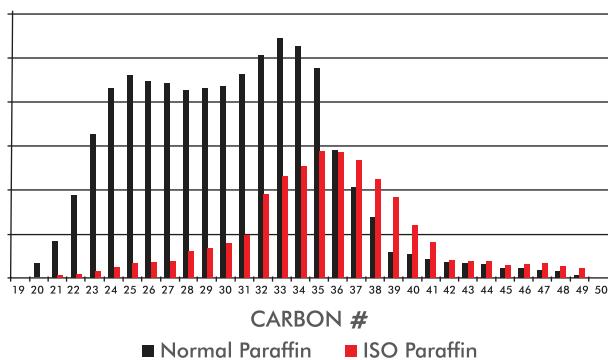


enduring extremes

SUSCEPTIBILITY TO OZONE ATTACK

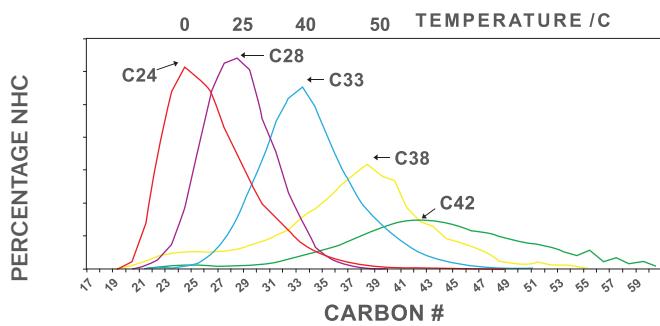


TYPICAL CARBON NUMBER DISTRIBUTION RAWAX® 1080



WAX COMPONENT MIGRATION TEMPERATURES

NORMAL HYDROCARBON DISTRIBUTION OF PETROLEUM WAXES



STORAGE : Pallets should not be stacked as this increases the likelihood of agglomeration and instability

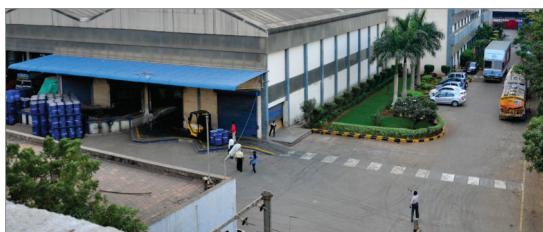
Raj Petro - A Brenntag Group Company is a multi-faceted Petroleum & Lubricant manufacturing and marketing company having a complete range of Industrial, Automotive and Specialty Lubricants operating since last more than 8 decades. Raj Petro has entered a Joint Venture with BRENNTAG a Global market leader in Chemical Distribution having an annual turnover of approx. EURO 11.7 billion (USD 13.3 billion), operating in more than 100+ countries globally with an employee strength of more than 15000.

Raj Petro - A Brenntag Group Company, having 2 state-of-the-art ISO 9001, 14001 & 45001 certified manufacturing plants based in Chennai and Silvassa (D&H) with a strong back up of R&D Centres approved by DSIR, Ministry of Science & Technology, Government of India and NABL accredited Laboratory with a footprint in more than 100+ countries across the globe. Raj Petro - A Brenntag Group Company has a wide range of Product Portfolio under the brand names-

ELECTROL® | RAJOL® | RAJELL® | RAJPOL® | RA-WAX® | STANSOL® | KELEOL SPRAY OIL E4

zoomol® | **kyros®** | **onwo®** | **kyros®** TEASPRAY OIL | **duratek agrispray oils** | **SYNELECT** Synthetic Ester Dielectric Fluid | **BIOELECTROL** Natural Ester Dielectric Fluid

Raj Petro - A Brenntag Group Company is a customer driven organization distinguished from its competition by a commitment to excellence and the quality of its products and services. Our success & ability to satisfy the expectation of our customers and employees are built on this excellence and team work, in total quality environment. Raj Petro - A Brenntag Group Company has consistently made efforts to be world class in every sphere of business.



RAJ PETRO- A BRENNTAG GROUP COMPANY

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