

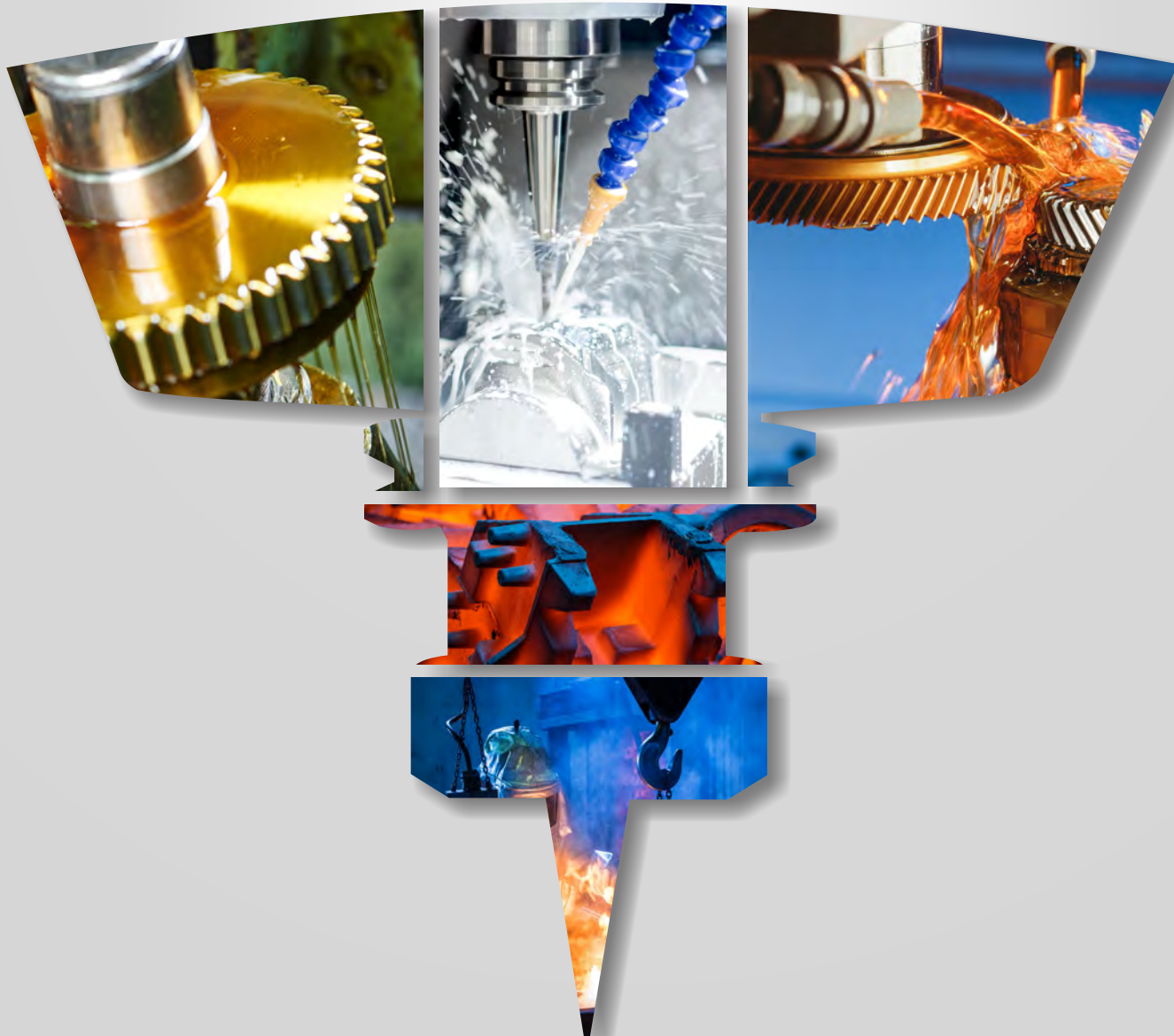


APAR

Tomorrow's solutions today

POWEROIL[®]

Powering Ahead



POWEROIL

METAL WORKING FLUIDS

APAR SOLUTIONS FOR METALWORKING FLUID APPLICATIONS



APAR Industries Limited is a multi-national manufacturing company, holding a leadership position in its three core business segments of speciality oils, conductors and cables, with a billion-dollar turnover. Speciality oil businesses includes automotive and industrial lubricants, speciality automotive and polymers. Our products have a significant market share in India and are sold in over 125 countries.

Our POWEROIL range of speciality oils encompasses 350+ grades of Transformer Oils, White Oils, Petroleum Jellies, Process Oils, Industrial and Automotive Lubricants. We are the third largest Transformer Oil manufacturer globally, trusted by major OEMs, utilities, power generation, transmission & distribution companies.

Out of our seven 100% owned manufacturing facilities in India, two facilities are dedicated to our speciality oils business {Rabale, Maharashtra and Silvassa, Gujarat}. Our third speciality oils factory is in Hamariyah free zone {Sharjah, UAE}, catering to the Middle East and North African markets. All three facilities annual production capacity adds up to over 5,20,000 KL, {among the largest in the world}. In addition to these, we have blending facilities in Turkey and Australia.

For over five decades, POWEROIL has been leading the industry curve with proactive product development, timely delivery and superior product attributes by reinforcing innovation, cost leadership and premium quality and living its vision 'Tomorrow's Solutions Today' resulting in reliability, respect, reputation and customer loyalty.



ABOUT US

ABOUT APAR GROUP



ABOUT OUR RANGE

APAR manufactures a wide range of Industrial / Automotive and Specialty Lubricants at its state-of-art blending plants at Rabale - Thane and Silvassa (D.N.H) under SCADA controlled operations accredited for ISO 17025 by NABL and R&D center is equipped with accredited quality systems providing high accuracy blending. Our Quality Control Laboratory is accredited with NABL and is approved by DISR.

We offer a comprehensive range comprising of more than 150 Grades of:

- ◆ Hydraulic Oils
- ◆ Gear Oils
- ◆ Compressor Oils
- ◆ Long Life Turbine Oils
- ◆ Cylinder Oils
- ◆ Refrigeration Oils
- ◆ Metalworking Fluids
- ◆ Rust Preventive Oils
- ◆ Wire Drawing Compounds
- ◆ Automotive Engine Oils
- ◆ Automotive Gear Oils
- ◆ Transmission Fluids
- ◆ Glass Mould Oils
- ◆ Quenching Oils
- ◆ Thermic Fluids
- ◆ Industrial and Automotive Greases
- ◆ Other speciality industrial oils for specific applications



All our products meet the latest BIS and International Standard specifications. These Lubricants are manufactured utilizing advanced technology hydro-treated and hydro-cracked base oils, which give a distinct advantage. The well-equipped sophisticated laboratory at our Rabale plant includes special testing equipment like trace metal analyzer, FTIR, UV analyzer, particulate counter, cold cranking simulator, salt spray testing, foaming & emulsion test apparatus, air release value and 4 ball weld load testing equipment and more, to offer effective pre and post-sales services to our customers. On-line vacuum and microfilters are also part of our production systems, which ensure clean and super clean oils meeting the stringent NAS 1638 classification advantage in performance over similar products made utilizing conventional base oils.



Next-Generation Metalworking Fluids

We offer a complete product basket for all your applications, to optimize machining performance, improve tool life and prolong the machine life. Our innovative high-performance range helps to improve customer productivity and satisfaction. Our range guarantees you the best solutions for all your applications.

POWEROIL Water Soluble Cutting Oils

- ◆ Made from highly refined naphthenic base oil
- ◆ Find applications in cast iron, mild steel, aluminium components & hard steel machining segments
- ◆ Long life green semi-synthetic technology



Our Product Selection Guide:

	Mineral Oil			Semi Synthetic				
	POWEROIL METCUT S+	POWEROIL METCUT PREMIUM	POWEROIL METCUT SR	POWEROIL SYNTHCUT 25 S	POWEROIL SYNTHCUT 50 HH	POWEROIL SYNTHCUT EP 40 HD	POWEROIL SYNTHCUT 25 CG	POWEROIL SYNTHCUT 40 CMS
Product Details	High quality conventional milky emulsion type general purpose soluble cutting oil.	High quality conventional milky emulsion type special purpose soluble Cutting Oil with additional wetting property to enhance flushing.	High quality soluble cutting oil with specially chosen emulsifier offering highly stable emulsion. Has select rust inhibitors and new generation biocides for effective metal protection and long emulsion life.	Semi synthetic, multipurpose oil ideally suited for cast iron. Has excellent anti-rust characteristics and is high resistance to bacterial attack. Offers extended sump life with better tool life.	It has exceptional foam control, hard water stability and tramp oil rejection while providing outstanding lubricity for machining and grinding. It is compatible with virtually all metals ideal for cast iron and steel grades, except Magnesium. It is Chlorine free.	Heavy duty biostable high pressure metal working coolant. It also has exceptional foam control, hard water stability & tramp oil rejection capabilities. Provides outstanding EP lubricity for machining and grinding virtually all metals.	Premium quality semi synthetic grinding fluid with excellent flushing characteristics. It has good lubricity and foam resistant properties. Suitable for grinding applications requiring high material removal.	High quality semi synthetic fluid. Blend of naphthenic base oils and high performance additives imparting excellent wetting and lubricity characteristics. Also imparts high resistance to corrosion and foam. Recommended for wide range of operations of CI, MS/ SS and ferrous alloys (not Magnesium).
Machining	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Grinding	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓
Cast Iron	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Carbon & tool steel	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Stainless steel	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓
Titanium & nickel	✓	✓	✓	✓	✓	✓✓	✓	✓
Aluminum	✓✓	✓	✓	✓✓	✓✓	✓✓✓	✓✓	✓✓
Brass, bronze & copper	✓	✓	✓	✓	✓	✓✓✓	✓✓	✓✓
Hard water stability	✓✓	✓✓	✓✓	✓✓✓	✓✓	✓✓✓	✓✓	✓✓
Rust protection	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Biostability	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Ep additives	✓✓	✓	✓	✓✓	✓✓	✓✓✓	✓✓	✓✓
Ph at 5 % D/VV(Typical)	9.2	9.2	9-9.5	9.0 - 10.0	9.0 - 9.5	9.1	9.5	9.2
Diluted color	Milky White	Milky White	Milky White	Semi Translucent	White Translucent	Semi Translucent	White Translucent	Translucent
Refractometer factor	1	1	1	1.35	1.47	1.25	1.8	1.35
Sump Life In individual tank under Standard Practices (Months)	4 - 6	4 - 6	4 - 6	9 - 12	9 - 12	9 - 12	9 - 12	9 - 12
Recommended Concentrations, %	3 - 10	3 - 10	3 - 10	3 - 10	3 - 10	3 - 10	3 - 10	3 - 10

Better - ✓✓✓ *Dilution ratios are accepted industry standards individual applications will vary.

Good - ✓✓ All products are free from Nitrides & Sulphur's & RoHS Compliance

Fair - ✓

Not Recommended -

POWEROIL Neat Cutting Oils

- ◆ Highly refined base oil with excellent oxidation stability
- ◆ Suitable for hard, soft, steel, aluminum, copper machining
- ◆ Our range meet all neat oil application requirements



Our Product Selection Guide:

	POWEROIL Cut A 12 Premium	POWEROIL Cut NF 9 (BR)	POWEROIL Hone 7	POWEROIL Hone 7 S	POWEROIL Cut NS 20	POWEROIL Cut NS 32	POWEROIL Cut NS 37	POWEROIL Cut NS 46	POWEROIL Cut NS 65	POWEROIL Cut NS 1012	POWEROIL Cut NS 1015	POWEROIL Cut NS 1018
Application	Aluminium components Drilling, cutting and grinding operations	Cylindrical, Drill Flute, Centre less Surface Grinding	Honing / Micro finishing, grinding, light drawing and forming applications	Honing / Micro finishing, grinding, light drawing and forming. Has EP additives & hence good load carrying ability	Gear cutting, hobbing, drilling/reaming and thread cutting machines	Gear cutting, hobbing, drilling/reaming and thread cutting machines	Gear cutting, hobbing, drilling/reaming and thread cutting machines	Gear cutting, hobbing, drilling/reaming and thread cutting machines	Gear cutting, hobbing, drilling/reaming and thread cutting machines	Gun Drilling and deep hole drilling	Gun Drilling and deep hole drilling, Gear hobbing and gear shaving operations.	Gun Drilling and deep hole drilling, Gear hobbing and gear shaving operations.
KV @ 40 C, cst @ (D- 7042)	11	25	5.50	5.0	20	32	37	46	65	12	15	18
Flash point, C (d-92)	180	160	120	120	168	180	180	180	190	150	174	160
Cu corrosion test (d- 130)	1a	1b	1a	1b	1b	1b	1b	1b	1b	4c	4c	4c
Sulphure	Inactive	Inactive		Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Active	Active	Active
Chlorine			X	X								
High speed grinding	✓	Flute ✓ Grinding		✓								
Reaming					✓	✓	✓	✓	✓			
Deep hole drilling										✓	✓	
Gear cutting					✓	✓	✓	✓	✓		✓	✓
Broaching											✓	✓
Honing			✓	✓								
Forming												
Copper/ brass	✓		✓	✓	✓	✓	✓	✓	✓			
Aluminium	✓	✓	✓	✓								
Cast iron		✓	✓	✓								
Mild steel		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stainless steel		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



Our Product Selection Guide:

	POWEROIL Cut NS 1032	POWEROIL Cut NS 1037	POWEROIL Cut NS 1015 Premium	POWEROIL Cut Ultra GG	POWEROIL Cut Ultra GH	POWEROIL Cut NS 46 Premium	POWEROIL DRFML	POWEROIL DRFML Premium	POWEROIL DRFM 60DF	POWEROIL MET 15	POWEROIL MET SDL 20	POWEROIL Metroll AI Heavy
Application	Gear cutting, broaching and threading	Gear cutting, broaching and threading	Gear hobbing and gear shaving operations.	Creep feed grinding, Gear grinding	Gear Cutting, Gear Bobbing, Drilling & Reaming, Thread Milling	Small & Medium Size Nuts and Bolts forming, Threading	Aluminium sheet rolling & heat exchanger fin stamping.	Aluminium sheet rolling & heat exchanger fin stamping. Has performance package that impart higher load carrying ability.	High speed forming of medium & large size nuts and bolts.	Aluminium Wire Drawing	Aluminium Wire Drawing. Has unique synthetic additives & hence suitable for high oil temperatures	Soluble oil for Hot rolling of Aluminium Rods. Also used for Al. cutting operations.
KV @ 40 C, cst (D- 7042)	32	37	15	14	30	59	1.75	1.80	59	320	190	60 (pre-emulsion)
Flash point, C (d-92)	180	180	180	180	216	200	80	80	224	230	250	
Cu corrosion test (d- 130)	4c	4c	4c	1b	1b	2b			1b	1b	1b	
Sulphure	Active	Active	Active	Inactive	Inactive	Inactive	Nil	Nil				
Chlorine			X	X								
High speed grinding				✓ Creep Grinding								
Reaming					✓	✓						
Deep hole drilling												
Gear cutting	✓	✓	✓		✓							
Broaching	✓	✓	✓									
Honing												
Forming						✓	Rolling/ Fin Stamping	Rolling/ Fin Stamping	Stamping/ Tapping	Wire Drawing	Wire Drawing	Hot Rod Rolling
Copper/ brass				✓	✓							
Aluminium				✓	✓		✓	✓		✓	✓	✓
Cast iron				✓	✓							
Mild steel	✓	✓	✓	✓	✓	✓			✓			
Stainless steel	✓	✓	✓	✓	✓	✓			✓			



POWEROIL Quenching Oils

- ◆ Impart optimum hardness with minimized cracking and distortion
- ◆ Deep treated base stocks are used in blending of quenching oils
- ◆ Impart outstanding thermo – oxidative stability
- ◆ Leading to low oil top-ups, lower oil degradation & extended oil life



Our Product Selection Guide:

Product details	Cold Quenching Oils				Hot Quenching Oils (Marquenching)	
	Slow Quenching	Medium Fast Quenching		Accelerated Quenching	Medium Fast Quenching	
	POWEROIL Quench 32M	POWEROIL Quench 11	POWEROIL Quench SL 11	POWEROIL Quench Super 20	POWEROIL Quench MQ 120	POWEROIL Quench MQ 150
	General purpose quenching oil suitable for quenching of high-speed tools, ball bearings, nuts, bolts, set screws, crankshafts. Axles, steering arms, brake drums and components etc.	Blended from high quality refined base oils and carefully chosen fatty materials to impart good wetting and higher cooling abilities. Used for jobs requiring optimum hardness through accelerated quenching operations.	Has carefully chosen high performance additives that help in accelerated quenching. Suitable for quenching of high speed tools, ball bearings and other components.	Best in class cold quenching oil with highly treated base oils and special additive package that impart accelerated quenching. Suitable for high- speed tools, ball bearing, Rollers & Pins, Nuts & Bolts, Coil Springs & Crown Wheel & Pinions	Blended with high quality treated base oils having excellent thermal and oxidation stability. Suitable for maraquenching of medium carbon and low alloy steels, components subjected to distortion. Ideally suited for Gears, Blade Steels, complex section of transmissions parts and bearing rings etc. Optimum working temperature is 80-130 °C	Blended with high quality treated base oils having excellent thermal and oxidation stability. Suitable for maraquenching of medium carbon and low alloy steels, components subjected to distortion. Ideally suited for Gears, Blade Steels, complex section of transmissions parts and bearing rings etc. Optimum working temperature is 80-150 °C
	Viscosity @ 40 C, cst ASTM D445	30	30	30	19	66
Viscosity Index	100	100	100	100	100	95
Flash Point, COC, C, min ASTM D93	190	190	190	180	236	250
TAN, mg KOH/gm	0.3	0.5	0.5	0.2	0.2	0.3



POWEROIL Rust Preventive Oils

- ◆ High Performance rust preventive oils
- ◆ Address the segments CR, Tubes, Auto & Exports.
- ◆ Product Range from 3 to 35 cSt.



Our Product Selection Guide:

Product details	Oil based		Solvent Based						
	POWEROIL RP Light	POWEROIL RP HR	POWEROIL RP DW- 100	POWEROIL RP DW- 150	POWEROIL RP DW- 150 (A)	POWEROIL RP DW- 150 (C)	POWEROIL RP CR	POWEROIL RP HP	POWEROIL RP HF
	Oil based product used for finished machined component, for short duration indoor storage.	Oil based product with acid fume resistance properties. Used for HR sheets with pickling operation.	Low viscosity solvent based product with excellent dewatering properties. Recommended for in-process rust protection during Machining process.	Solvent based product with excellent Dewatering properties. Recommended For finished Machined component application.	Solvent based product with excellent Dewatering properties. Recommended For finished machined components especially subjected to severe acidic vapours of pickling operations.	Solvent based product with excellent Dewatering properties. Recommended For finished machined components subjected to salty, humid and mild acidic fumes.	Solvent based product with excellent acid fume resistance characteristics. Recommended for cold rolled steel applications.	Solvent based product fortified with good corrosion resistance properties against salty and humid atmosphere . Recommended for export application Of mild steel & cast iron components	Solvent based product with high flash point. Recommended for finished components where high odour Of solvent is an issue.
Viscosity @ 40° C, cst ASTM D445	8.5	34	2.8	2.5	2.6	2.5	2.7	2.0	4.2
Flash Point min ASTM D93, °C	140	150	38	40	38	40	38	38	93
Salt Spray Test min ASTM B117, hrs	35	48	36	72	60	60	42	96	48
Type of film	Soft oily	Oily	Thin oily	Oil, Smoothy	Fine, Waxy	Oil, Smoothy	Fine waxy	Fine waxy	Fine oily film
Indoor protection, months	3 - 6	6 - 9	3 - 6	9-12	3-6	3-6	3-6	9-12	6 - 9
Outdoor protection months	1- 3	1-3	1-3	3-6	1-3	1-3	1- 3	6-9	3-6

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