

Product	Key Benefits	Key Application	Fluid Technology	Performance Levels
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Modern, anti-wear hydraulic oils for multipurpose applications

PETRONAS Hydraulic ESF	<ul style="list-style-type: none"> Energy / Fuel saving up to 10%/6%** Excellent anti-wear protection Over 5x longer oil life* Excellent and highly stable performance over wide temp. range 	Mobile and industrial applications	Semi-synthetic	Bosch Rexroth RDE 90235; DIN 51524 Part II HLP and III HVLP (2006); Eaton 03-401-2010; Eaton Lubricant Specification E-FDGN-TB002-E; Fives Cincinnati P-68/P-69/P-70; ISO 11158 HV (FDIS 2008); Parker Denison HF-0/HF-1/HF-2.
PETRONAS Hydraulic HV PLUS	<ul style="list-style-type: none"> Excellent anti-wear protection Over 5x longer oil life* High and stable performance over wide temperature range Mobile and industrial applications 	Mobile and industrial applications	Mineral	Formally approved and listed in Bosch Rexroth list RDE 90245
PETRONAS Hydraulic HV PLUS	<ul style="list-style-type: none"> Excellent anti-wear protection Over 5x longer oil life* Excellent performance 	Mobile and industrial applications	Mineral	Bosch Rexroth RDE 90235; DIN 51524 Part II HLP (2006); Eaton 03-401-2010; Eaton Lubricant Specification E-FDGN-TB002-E; Fives Cincinnati P-68/P-69/P-70; ISO 11158 HM (FDIS 2008); Parker Denison HF-0/HF-1/HF-2.
PETRONAS Hydraulic HV	<ul style="list-style-type: none"> Excellent anti-wear protection Over 5x longer oil life* High and stable performance Mobile and industrial applications 	Mobile and industrial applications	Mineral	ASTM D 6158 HV; Bosch Rexroth RD90220; DIN 51524 Part II HLP and III HVLP (2006); Eaton 03-401-2010; Fives Cincinnati P-68/P-69/P-70; GM LS-2 (2004); ISO 11158 HV (FDIS 2008); JCMAS HK P041 (2004); Parker Denison HF-0/HF-1/HF-2; SAE MS1004; HF-0/HF-1/HF-2; SAE MS1004; SEB 181 222 (2007); US Steel 126, 127 and 136.
PETRONAS Hydraulic	<ul style="list-style-type: none"> Excellent anti-wear protection Over 5x longer oil life* High and stable performance Mobile and industrial applications 	Mobile and industrial applications	Mineral	ASTM D 6158 HM; Bosch Rexroth RD90220; DIN 51524 Part II HLP (2006); Eaton 03-401-2010; Fives Cincinnati P-68/P-69/P-70; GM LS-2 (2004); ISO 11158 HM (FDIS 2008); JCMAS HK P041 (2004); Parker Denison HF-0/HF-1/HF-2; SAE MS1004; SEB 181 222 (2007); US Steel 126, 127 and 136.

Zinc-free, anti-wear hydraulic oils for multipurpose applications

PETRONAS Hydraulic SYN BIO	<ul style="list-style-type: none"> Renewable content >80% Biodegradability of >60% against OECD 301B High Viscosity Index Excellent thermal and oxidation stability 	Mobile equipment operating in extreme cold or hot weather conditions as well as in environmental sensitive areas	Synthetic	Bosch Rexroth RD 90221-1, DIN EN ISO 15380 HEES, Eaton Brochure 03-401-2010 (ISO-VG 46), EU Ecolabel (UK/027/023), ISO 15380 HEES, JCMAS P042 (HKB), Parker HF-1 / HF-2 / HF-6, USDA Bio Preferred, VDMA 24570 (ISO-VG 46), Vessel General Permit (VGP)
PETRONAS Hydraulic HVZF	<ul style="list-style-type: none"> Excellent anti-wear protection Up to 10x longer oil life* High and stable performance over wide temp. range 	Mobile and industrial applications	Mineral, Ashless	DIN 51524 Part II HLP and III HVLP (2006); Eaton Brochure 03-401-2010; Fives Cincinnati P-68/P-69/P-70; ISO 11158 HV (FDIS 2008); Parker Denison HF-0/HF-1/HF-2.
PETRONAS Hydraulic ZF	<ul style="list-style-type: none"> Excellent anti-wear protection Up to 5x longer oil life* High performance 	Mobile and industrial applications	Mineral, Ashless	DIN 51524 Part II HLP (2006); Eaton Brochure 03-401-2010; Fives Cincinnati P-68/P-69/P-70; ISO 11158 HM (FDIS 2008); Parker Denison HF-0/HF-1/HF-2.

Detergent enhanced hydraulic oils for high water contamination control

PETRONAS Hydraulic HLPD	<ul style="list-style-type: none"> High water tolerance (up to 3%) Excellent anti-wear protection Up to 3x longer oil life* Excellent performance 	Mobile and industrial applications	Mineral	Daimler Chrysler DBL 6721 (2000); DIN 51524 Part II HLPD (2006).
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Fire resistant hydraulic oils for fire hazard applications

PETRONAS Hydraulic FR	<ul style="list-style-type: none"> Excellent fire resistance High anti-wear protection High and stable performance over wide temp. range Environmentally friendly 	Mobile and industrial applications	Synthetic, Organic esters	Factory Mutual Approval; HFD Fluid.
PETRONAS Hydraulic HFC	<ul style="list-style-type: none"> Excellent fire resistance Very good anti-wear protection Very good performance 	Industrial applications	Water-glycol	Factory Mutual Approval; HFD Fluid.

*** Typical value for VG 46 n.a. - not applicable

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HYDRAULIC OILS

Get the most out of your hydraulic systems

Hydraulic equipment is now faster and more powerful than ever, placing greater demands on hydraulic oils. Original Equipment Manufacturers (OEMs) today make incredibly compact systems with higher pressures and tighter tolerances to increase system performance.

PETRONAS Industrial Solutions offers exceptional, anti-wear hydraulic oils specially developed for a wide range of mobile and industrial hydraulic equipment operating under normal to extremely heavy-duty conditions including the latest high speed and high-pressure systems. We've formulated the **PETRONAS Hydraulic Series** with high quality selected base oils enhanced with advanced anti-wear, antioxidant, anti-rust, and anti-foam additives, coupled with friction modifiers to provide smooth operation for your hydraulic systems.

By partnering with you to solve the problems you face today and tomorrow, we can help you move ahead and develop your business. Together with our insight-driven services, we'll help you improve reliability, reduce your operating costs and free up your potential – all because we share your goals and priorities.

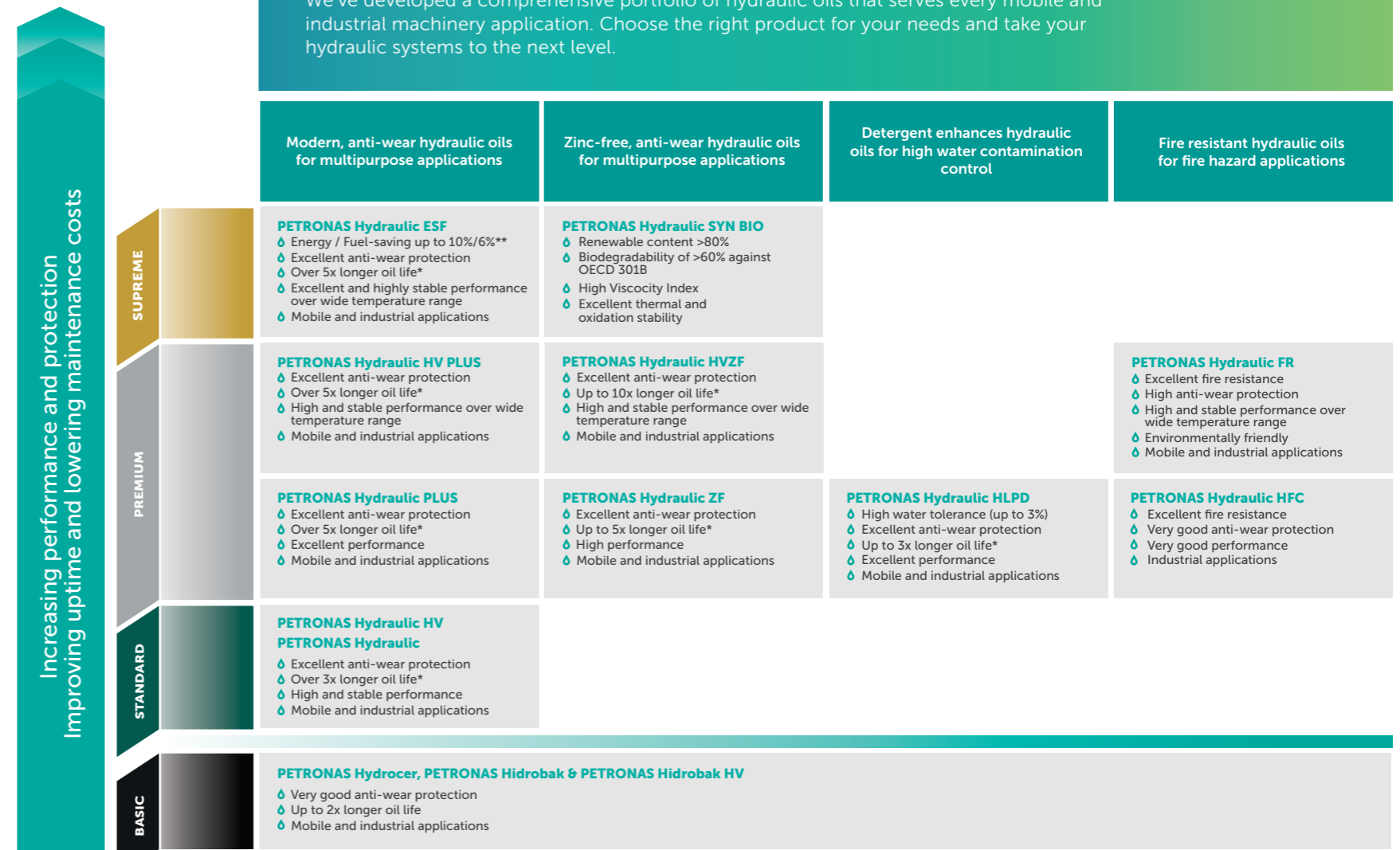


Strengthening progressive businesses from within

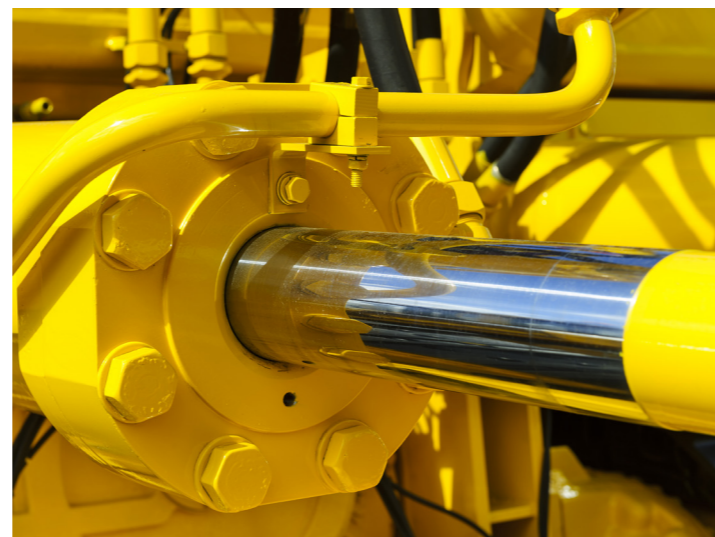
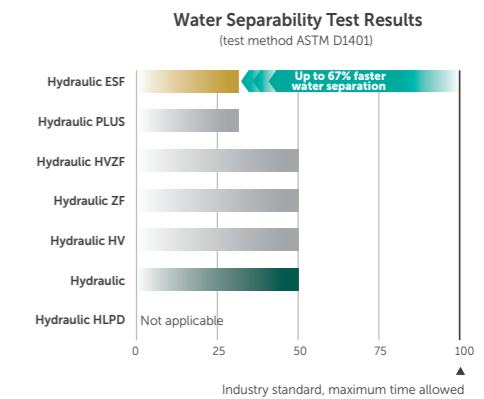
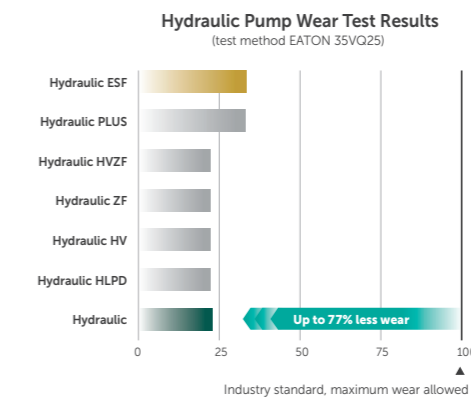
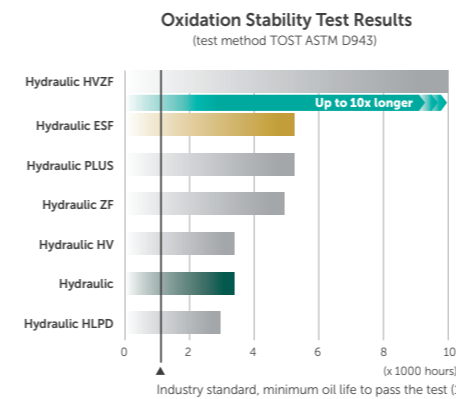
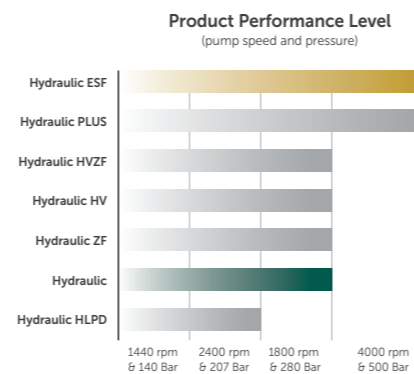
As the world comes together to tackle the climate crisis, businesses need strong partners to help them develop the resilience they need to progress and grow in sustainable ways. **PETRONAS Industrial Solutions** works as one with our customers to strengthen your operation from within, developing a deep understanding of your needs and delivering against them with innovative services and energy-efficient solutions that set a clear path to a carbon neutral future. Together, we drive industrial resilience and deliver sustainable performance.

Your key to maximizing performance

We've developed a comprehensive portfolio of hydraulic oils that serves every mobile and industrial machinery application. Choose the right product for your needs and take your hydraulic systems to the next level.



* vs. minimum requirements of ISO 11158 HM for anti-wear hydraulic fluids based on TOST (ASTM D943).
 ** vs. conventional, standard viscosity hydraulic fluids. Actual results may vary depending on different application conditions, type & condition of equipment, current oil used.



Helping you develop resilience for sustainable growth

PETRONAS Lubricants International is part of the PETRONAS Group. Our approach to fluids is to focus on whole system performance and prolong the working life of your vehicle or machine's system. Our world class technologists strive to develop lubricants that lead the field and earn the all important endorsements of leading OEMs. We're passionate about helping our customers stay focused on their progress no matter what and provide the services and support needed to overcome the challenges of today and tomorrow.