

Lubricants for Hydraulic Applications



ACTION SERIES HYDRAULIC OILS

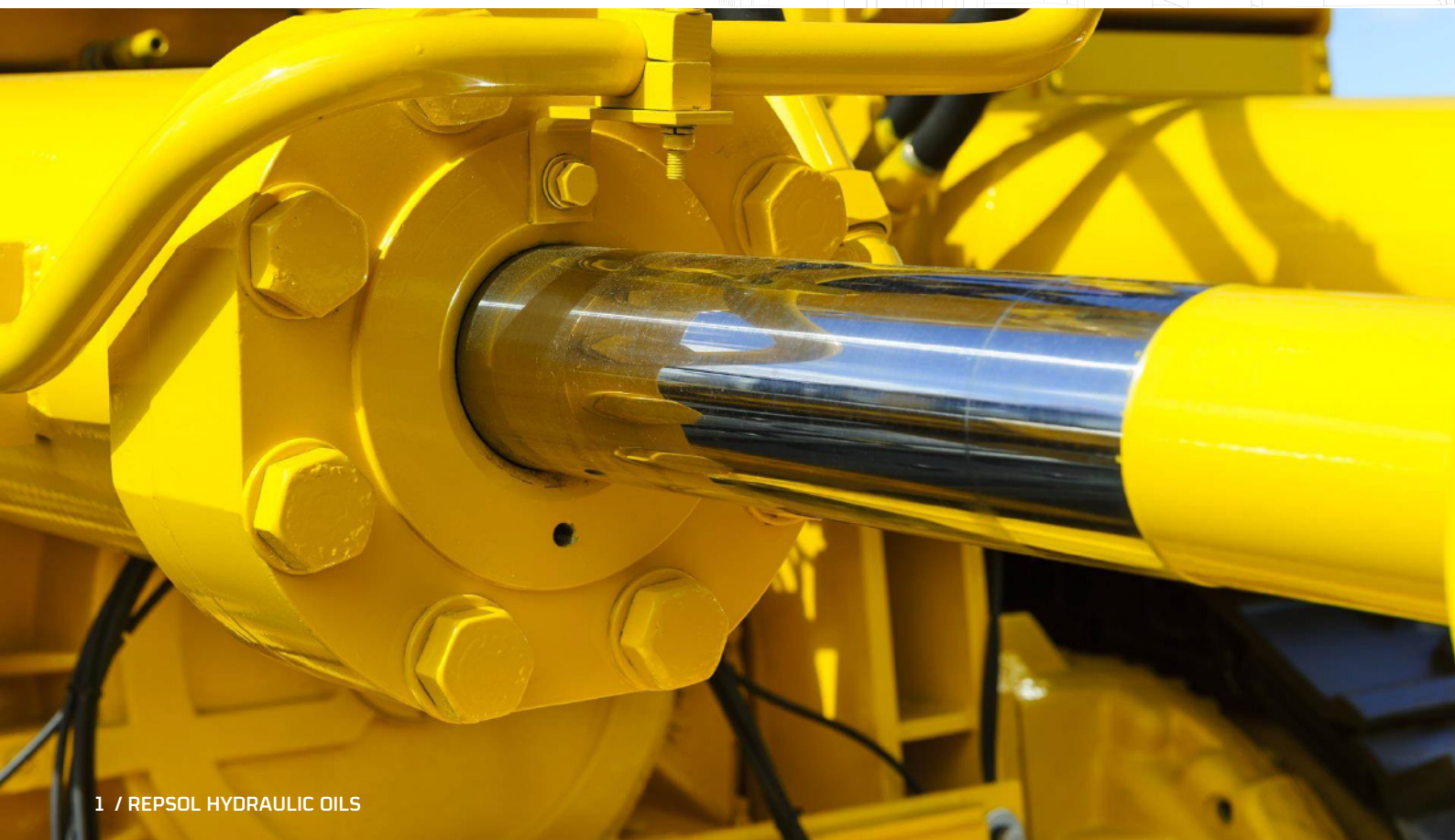
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INTRODUCTION

Repsol is the largest industrial lubricant manufacturer in Spain. Our expertise as a lubricant company lies in our aim to develop the highest quality lubricants and adopt the most appropriate lubrication solution to cover your needs. Together with our used oil analysis experience, we continuously strive to improve ourselves and create value-added services to all our industrial customers. Repsol lubricants with its forefront technology is ready to assist you in achieving lubrication excellence. An extensive range of industrial lubricants to meet the most demanding quality standards in the market is constantly developed to reach the maximum performance in the most challenging applications.

At our state-of-the-art research center, Repsol Technology Lab, our technicians and researchers are continuously improving each product to ensure maximum efficiency and the highest level of technical and environmental quality. By relying on Repsol lubricant technology developed in the lab, proven in in-house bench tests and finally tested in field trials at the customer sites, we guarantee that your equipment is perfectly lubricated and protected. As a customer, you will enjoy many advantages like durability, reduced equipment downtime, energy savings, cost savings due to extended oil service life and many more.

With a plethora of products to choose from, we seek to work with our industrial customers to implement lubrication and oil analysis best practices, aiming to achieve the right lubrication program. Our products ranges from mineral-based hydrotreated GII products for customers looking for cost effective optimized performance to semi-synthetic and synthetic formulation like GIII and PAO products with enhanced performance for the most demanding applications. Repsol aims to work with you to find the best lubrication plan for your company with our custom-centric approach.

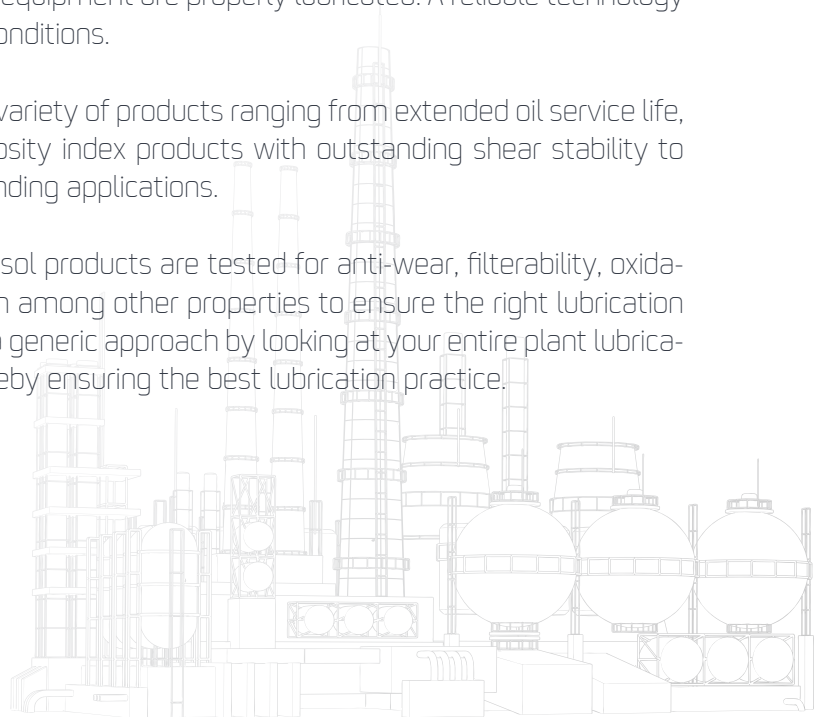


ACTION SERIES HYDRAULIC OILS

Repsol's hydraulic oils are formulated using specially selected hydrotreated base oils and cutting-edge additives that ensure all parts of your equipment are properly lubricated. A reliable technology to meet all your needs, even in extreme working conditions.

Repsol hydraulic industrial oil offers a wide variety of products ranging from extended oil service life, newest zinc free (ashless) technologies, high viscosity index products with outstanding shear stability to cost-effective and reliable solutions for less-demanding applications.

When developing new hydraulic fluids, Repsol products are tested for anti-wear, filterability, oxidation stability, demulsibility, and corrosion protection among other properties to ensure the right lubrication in all parts of the hydraulic system. Repsol adopts a generic approach by looking at your entire plant lubrication system rather than individual equipment, thereby ensuring the best lubrication practice.



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REPSOL VESTA AW-V

REPSOL VESTA AW-V is a high-performance hydraulic fluid with outstanding viscosity control across a wide range of temperatures. Hydraulic oil suitable for use in hydraulic circuits subject to temperature changes, exposed to outdoor conditions or cold weather. The additives used to achieve the high viscosity index have also outstanding shear stability features. It does not break down into smaller molecules due to shearing, thus preventing the viscosity to drop dramatically even working under heavy loads, thereby protecting the equipment against wear.

APPROVALS AND QUALITY LEVELS :

DIN-51524 Part 3 HVL, MAG IAS P-68, P-69 & P70, ISO 6743/4 HV, AFNOR NF E 48-603 HV, ISO 11158, Eaton Vickers I-286-S & M-2950-S

ISO GRADE	Viscosity at 40°C (cSt)	Viscosity at 100°C (cSt)	Viscosity index	Pour point (°C)	FZG, step 12	TOST Oxidation Test (hours)
32	32	6.2	150	-33	PASS	8000
46	46	8.2	150	-33	PASS	8000
68	68	11.3	150	-33	PASS	8000



REPSOL VESTA AW-X

Premium oils with zinc-free (ashless) additives that are suitable for use in lubrication circuits that require an oil with such characteristics. Cutting-edge lubricants that meet DENISON HF-0 quality levels. Suitable for lubricating circuits with very fine tolerance servo valves and where high filterability is required.

APPROVALS AND QUALITY LEVELS :

ISO 6743/4 HM, DIN 51524 HLP PARKER DENISON HF-0, H-1 and HF-2 FIVES CINCINNATI P-68, P-69, P-70 AFNOR NF ISO 11158 HM, VOITH 3625-006210, VOITH 3525-006208

ISO GRADE	Viscosity at 40°C (cSt)	Viscosity at 100°C (cSt)	Viscosity index	Pour point (°C)	FZG, step 11	Zinc Metal Content (ppm)
32	29.5	5.1	100	-15	PASS	10
46	46	6.6	98	-24	PASS	10
68	68	8.7	98	-24	PASS	10

ACTION SERIES HYDRAULIC OILS



REPSOL VESTA AW

General purpose cost effective hydraulic oil with high resistance to rust and aging, anti-wear protection, good anti-foaming properties and excellent water separation. The hydrotreated base oil and the additives used bring outstanding antioxidant capabilities to avoid oxidation by-products keeping the system clean and the equipment protected.

APPROVALS AND QUALITY LEVELS :

ISO 6743/4 HM, DIN 51524 HLP AFNOR NF ISO 11158 HM AFNOR NF E 48690/48691

ISO GRADE	Viscosity at 40°C [cSt]	Viscosity at 100°C [cSt]	Viscosity Index	Pour point [°C]	FZG, step 11	TOST Oxidation test [hours]
46	46	6.7	100	-24	PASS	2000
68	68	8.6	98	-24	PASS	2000



IN-SERVICE OIL ANALYSIS

guarantee that your machinery and mechanisms operate in top condition. To do so, we must ensure that they are properly lubricated.

The **ADOC program** is an exclusive service that we offer our customers and is based on over 20 years of experience analyzing lubricants. Through regular analyses of in-service oil samples in our lab, the ADOC program tells you about the current condition of your machinery and mechanisms, as well as any changes, while predicting mechanical failures before they occur.



Advantages of the ADOC program:

- Improves equipment performance and productivity.
- Reduces maintenance costs and unscheduled downtime.
- Prolongs the useful life of lubricants and mechanical components, thereby minimizing the associated replacement costs and the capital tied up in spare parts.
- Allows for maintenance and control interventions to be scheduled.
- Brings about a significant improvement to the optimal working conditions of lubricants and components.

Other services:

● **Technical assistance**

Our team of technical specialists is available to offer you advice in your factory and can also provide specialized training on lubricants.

● **On-site assistance services**

We offer expert recommendations on the best lubrication practices, enhanced lubrication performance, sample selection, and the solution of machinery-related problems to help increase useful life and efficiency.

● **On-site lubrication services**

We take care of everything to ensure that lubricants are not a cause for concern for customers. We do this by offering lubricant application services, warehouse management, sample taking, collection of used oils, etc.

● **Development of customized lubricants to overcome specific problems**

