



UCON™ OSP Base Fluids

Oil-soluble polyalkylene glycol lubricant technology



UCON™ OSP Base Fluids

A breakthrough in oil-soluble PAG base fluid technology

UCON™ OSP Base Fluids from The Dow Chemical Company represent a significant advancement in polyalkylene glycol (PAG) lubricant technology. These unique products offer compatibility with mineral oils and synthetic hydrocarbon base oils as well as many other base oils while retaining key benefits of traditional PAG lubricant technology, including high viscosity index values, low pour points and excellent film forming benefits.

Compatible with Group I-IV hydrocarbon base oils, UCON™ OSP Base Fluids enable lubricant and grease manufacturers to create innovative new generations of PAG-based products providing world class lubrication, while maintaining compatibility with mineral oils and polyalphaolefins (PAO) base fluids. They also provide manufacturers with the flexibility to reformulate existing products, replacing expensive esters with a PAG-based alternative.

Product Description

UCON™ OSP Base Fluids are oil-soluble base fluids that offer the historical advantages of PAG-based synthetic lubricant technology without past compatibility limitations with hydrocarbon oils. Available in nine viscosity grades, UCON™ OSP Base Fluids can be used as primary base oils, co-base oils and as additives in automotive and industrial lubricant formulations.

They can be blended with mineral oils to provide upgraded, semi-synthetic base oils offering improved deposit control, oxidation stability, viscosity index and low temperature stability. UCON™ OSP Base Fluids impart excellent friction control when used as additives in formulations containing mineral oils and PAOs.

Applications for UCON™ OSP Base Fluids include industrial air compressor fluids, industrial hydraulic fluids, fire-resistant hydraulic fluids, metalworking fluids, greases, turbine oils, gear lubricants, automotive friction modifiers, automotive deposit control additives, and co-base oils for automotive engine oils.



Product Features and Benefits

Multi-purpose – UCON™ OSP Base Fluids are available in a wide range of ISO viscosity grades and offer formulators the option to design many types of lubricants such as hydraulic fluids, metalworking fluids, greases, and engine and transmission oils.

Air release – Fluids formulated with UCON™ OSP Base Fluids as the primary base oil have very low air release times. For example, a formulated UCON



OSP synthetic hydraulic fluid has an air release time of less at 50°C of less than 1 minute using ASTM D3427. This may allow equipment builders to design smaller reservoir sizes, reduce the risk of cavitation and also lower the rate of fluid oxidation.

Compatibility – Unlike conventional PAGs, UCON™ OSP base oils provide oil miscibility in Group I-IV hydrocarbon oils.

Physical properties – In addition to offering high VI values and low pour points, UCON™ OSP base oils are also hydrolytically stable, unlike chemistries such as synthetic esters and vegetable oils.

Deposit control – When UCON™ OSP Base Fluids are used as primary or co-base oils in formulations, deposit formation is minimized compared with many traditional hydrocarbon based products.

Friction control – Low treat levels of UCON™ OSP Base Fluids in hydro-carbon base oils can provide excellent friction

control due to the excellent film forming properties of PAGs. PAGs including UCON™ OSP Base Fluids also provide inherently mild extreme pressure properties.

Safe To Handle – UCON™ OSP Base Fluids are designed to meet the highest environmental, health & safety performance standards.



Typical Physical Properties of UCON™ OSP Base Fluids

Property	Method	OSP-18	OSP-32	OSP-46	OSP-68	OSP-150	OSP-220	OSP-320	OSP-460	OSP-680
Viscosity at 40°C, mm ² /s	ASTM D445	18	32	46	68	150	220	320	460	680
Viscosity at 100°C, mm ² /s	ASTM D445	4.0	6.5	8.5	12	23	32	36	52	77
Viscosity Index	ASTM D2270	123	146	164	171	186	196	163	177	196
Pour Point, °C	ASTM D97	-41	-57	-57	-53	-37	-34	-37	-35	-30
Flash Point (COC), °C	ASTM D92	204	216	216	218	228	226	230	235	243
Acid Number, mg KOH/g	ASTM D974	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Four Ball Wear Scar, mm**	ASTM D4172	0.58	0.58	0.58	0.48	0.43	0.46	0.45	0.43	0.38

*Typical Properties, not to be construed as specifications.

**Load = 40 kg, temp = 75°C, speed = 1200 rpm, time = 60 min

Regulatory and Disposal

Requirements for reporting accidental fluid spills and discharges may vary from country to country, region to region, or from city to city. It is important that you contact the appropriate authorities in your local area to clearly understand any reporting or other requirements.

Consult local sewage treatment plant authorities for regulations prior to disposing of any product. For guidance in the U.S., contact your local Water Board, regional office of the Environmental Protection Agency, or the appropriate regulatory authority. In other nations, contact the appropriate regulatory authority in your area.

Product Safety

When considering the use of any Dow products in a particular application, review the current Material Safety Data Sheet (MSDS) and ensure that the use you intend can be accomplished safely. For MSDS and other product safety information, contact Dow at the number for your area, listed in this brochure. Before handling any other products mentioned in the text of this brochure, obtain the available product safety information and take necessary steps to ensure safe use.

No chemical should be used as or in a food, drug, medical device, cosmetic; or in a product or process in which it may contact a food, drug, medical device or cosmetic; until the user has determined the suitability and legality of the use. Since government regulations and use conditions are subject to change, it is the user's responsibility to determine that this information is appropriate and suitable under current, applicable laws and regulations.

Dow requests that the customer read, understand, and comply with the information contained in this publication and the current MSDS. The customer should furnish the information in this publication to its employees, contractors

Emergency Service

Dow maintains a 24-hour emergency service for its products. The American Chemistry Council (CHEMTREC) and Transport Canada (CANUTEC) also maintain 24-hour emergency service:

Location	Dow Products	All Chemical Products (In Case of Emergency)
United States and Puerto Rico	800-DOW-CHEM	Phone CHEMTREC: 800-424-9300
Canada	5 19-339-3711 (collect)	Phone CANUTEC: 613-996-6666 (collect)
Europe, Middle East, North and Central Africa	49 41 469 12333	
Latin America, Asia-Pacific, South Africa, Any Other Location Worldwide	Phone United States 989-636-4400	

At sea, radio U.S. Coast Guard, which can directly contact Dow... 800-DOW CHEM or CHEMTREC: 800-424-9300

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.

Contact an authorized Dow formulator to purchase water glycol hydraulic fluid formulated with UCON ADVANTA™ Hydrolube Concentrate. For the name of a formulator near you, contact Dow:

North America:

Toll-free 1-800-447-4369

Europe:

Toll-free +800 3 694 6367
Call +31 11567 2626

Pacific:

Toll-free +800 7776 7776
Call +60 3 7965 5392

Latin America:

Call +55 11 5188 9000

©™The DOW Diamond Logo, Solutionism and design are trademarks of The Dow Chemical Company © 2013

www.ucon.com

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.