

UCON™



AMERICAN CHEMICAL TECHNOLOGIES, INC.

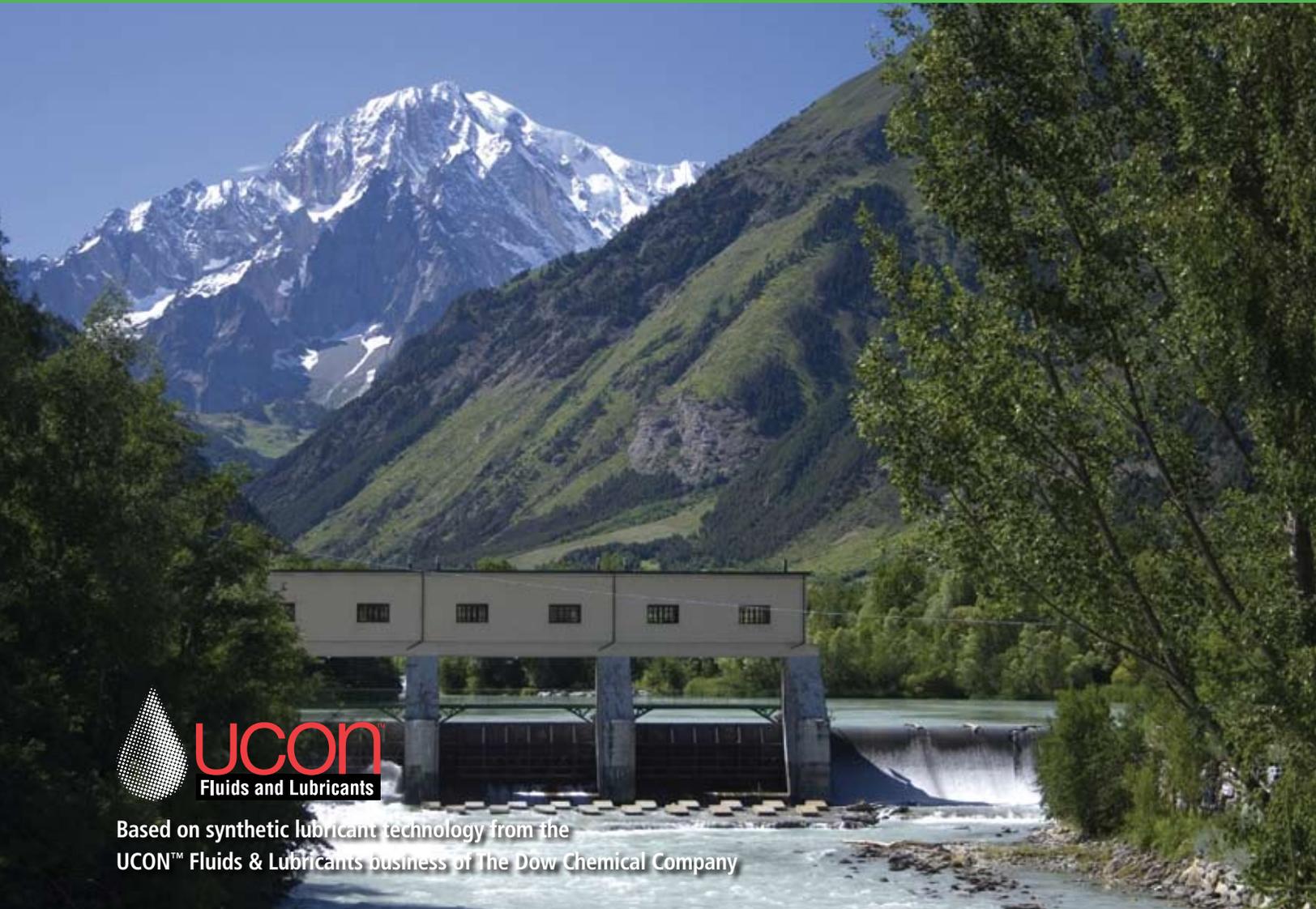


Trident™ AW

No Sheen, High Performance, Water Soluble Hydraulic Fluids



Environmentally Friendly, No Sheen Fluids for Use in Equipment Operated Near Marine Environments



Based on synthetic lubricant technology from the UCON™ Fluids & Lubricants business of The Dow Chemical Company

UCON™ Trident™ AW

No Sheen, Low Toxicity, Protection for Marine and Dockside Hydraulic Systems

UCON™ Trident™ AW fluids are high performance hydraulic fluids ideally suited to meet the environmental, aquatic toxicity and performance demands of marine, dockside, or other shoreline systems. UCON™ Trident™ AW fluids will not hydrolyze and break down in the presence of water. However, in the event of a leak or spill, they are heavier than water and dissolve completely, leaving no surface sheen and eliminating the need for cleanup. UCON™ Trident™ AW fluids are anhydrous (water-free) polyalkylene glycol (PAG)-based fluids and are classified as "Practically Non-Toxic" to fish or other aquatic wildlife by the U.S. Fish and Wildlife Service. UCON™ Trident™ fluids are considered "readily biodegradable".

Available in three viscosity grades, UCON™ Trident™ AW hydraulic fluids have exceptional load-carrying capabilities and are rated as "anti-wear". They do not break down to form sludge and are formulated to provide effective corrosion protection.

Although the fluids dissolve in water, water ingress in UCON™ Trident™ AW hydraulic fluids can be reduced to acceptable levels by vacuum dehydration.

Performance Advantages:

Non-Sheening—UCON™ Trident™ AW hydraulic fluids are the only commercially available, environmentally friendly fluids that pass the U.S. Environmental Protection Agency (EPA) 40 CFR 435 Static Sheen Test.

Water Solubility—UCON™ Trident™ AW hydraulic fluids are heavier than water, dissolve completely and leave no surface sheen, eliminating cleanup requirements.

Aquatic Toxicity—According to the U.S. Fish and Wildlife Service, UCON™ Trident™ AW hydraulic fluids meet requirements as "Relatively Harmless" or "Practically Non-Toxic" to fish and other aquatic wildlife.

Biodegradable—UCON™ Trident™ AW fluids are "readily biodegradable" according to OECD 301F.

Excellent Anti-Wear Performance—UCON™ Trident™ AW fluids have exceptional load carrying capabilities and are specially formulated to provide effective corrosion protection and excellent anti-wear performance over a wide range of temperatures. They are rated as "anti-wear" (AW) fluids according to ASTM D7043 and FZG testing.

Hydrolytic Stability—Unlike mineral oil and other environmentally friendly fluids, UCON™ Trident™ AW fluids will not break down to form sludge or hydrolyze in the presence of water. This protects against the formation of harmful acids that can damage equipment and lead to premature failure.

High Waste Treatability—UCON™ Trident™ AW fluids are highly waste-treatable. In tests simulating the discharge of industrial waste streams to unacclimated municipal treatment plants (POTWs), UCON™ Trident™ AW 32 fluid demonstrated no adverse impact on either the proper functioning or performance of the waste treatment systems, even at high discharge levels.

Non-Sludge or Varnish Forming—UCON™ Trident™ AW fluids are oxidatively stable and will not degrade to form sludge or varnish, extending maintenance intervals and overall service life. This chemistry also contributes to long-term system cleanliness.

Thermal Stability—UCON™ Trident™ AW fluids are long-lasting products that resist thermal breakdown and are unaffected by small amounts of water contamination. When the fluid does eventually begin to degrade, the degradation components are soluble in the fluid and do not fall out of solution.

All-Weather Service—With high viscosity indices and low pour points, UCON™ Trident™ AW fluids can be used year round, eliminating seasonal changeovers. One UCON™ Trident™ AW fluid can replace multiple viscosity grade oils.

Fire Resistance—UCON™ Trident™ AW 46 and 68 fluids are FM Approved industrial fluids. UCON™ Trident™ AW 32 fluid is classified by Factory Mutual as a Specification Tested Product, "Less Flammable Industrial Fluid".

Material Compatibility—UCON™ Trident™ AW fluids are not compatible with other hydraulic fluids and recognized industry procedures for system cleanup and flushing should be followed. The fluids are compatible with seals, hoses and metals commonly found in hydraulic systems. Contact ACT for more detailed compatibility information related to paints, plastics, elastomers and other hydraulic fluids.



Hydraulic Fluids



Superior Oxidative Stability

Results of controlled fluid tests show the superior stability of PAG-based fluids such as UCON™ Trident™ AW fluids compared to PAOs (synthetic hydrocarbons). After 2500 hours at 120°C, the PAO produced significant deposits, which could result in operational problems in hydraulic systems. In contrast, the vial containing the PAG-based fluid was virtually free of deposits.

Typical Wear Performance*

UCON™ Trident™ AW Hydraulic Fluids	32	46	68
FZG Visual Gear Test, ASTM D5182, Stages Passed	12	12	12
Four Ball Wear, ASTM D4172, mm wear scar (1200 rpm, 1 hour, 75°C [167°F], 40 kg)	0.79	0.81	0.81
Four Ball EP Test, ASTM D2783			
Load Wear Index	32.94	33.10	33.26
Last Non-seizure, 80 kg (mm scar)	0.40	0.40	0.39
Last Seizure, 126 kg (mm scar)	2.75	2.60	2.53
Weld Load, kg	160	160	160
Vane Pump Test, ASTM D7043 (total mg wear)	<10	<10	<10
Eaton Corporation 35 VQ Vane Pump Test (formerly Vickers),** M-2950-S	Pass	Pass	Pass
Individual Cartridge Wear, mg	8, 8, 8	8,8,8	8,8,8
Average Wear, mg	8	8	8
Seal Compatibility (1,000 hr at 100°C [212°F]), Buna-n, Viton, PTFE	Pass	Pass	Pass
OECD Ready Biodegradability Test Method 301F, 8/8 Biodegradation	81%	72%	80%

*Typical properties, not to be construed as specifications.

**Southwest Research Institute (SWRI)

Typical Physical Properties*

UCON™ Trident™ AW Hydraulic Fluids	32	46	68
Viscosity, ASTM D445			
@ 40°C (100°F), (cSt)	37.3	47.0	68.4
@100°C (210°F), (cSt)	8.0	9.8	13.7
@ 0°C (32°F), (cSt)	294	390	614
Viscosity Index, ASTM D2270	194	200	209
Pour Point, °F (°C), ASTM D97	<-60 (-51)	-54 (-48)	-54 (-48)
Specific Gravity @20°C (68°F), ASTM D1298	1.028	1.031	1.037
Weight (lbs/gal) @ 20°C (68°F)	8.58	8.60	8.66
FM Approved, Test Standard 6930	Spec Tested	Yes	Yes

*Typical properties, not to be construed as specifications.

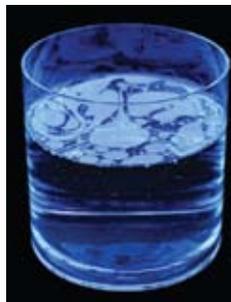
No-Sheen Performance Comparison



UCON Trident™ AW



AW 32 Mineral Oil



Synthetic Ester



White Oil



Vegetable Oil

Clear visual comparison of fluid sheening characteristics is made possible by adding an illuminating agent to the fluids, then adding the fluids to water under a black light. In a comparison conducted under identical conditions, other fluids quickly formed a visible sheen on the surface when added to water. In contrast, when a UCON™ Trident™ AW fluid was introduced into water, the fluid sank immediately, leaving no sheen on the surface. The samples were then subjected to significant agitation. The UCON™ Trident™ fluid dispersed completely into the water and, when the agitation stopped, there was still no sheen. When agitation of the other fluids ceased, surface sheens quickly reformed.

UCON™ Trident™ AW

Hydraulic Fluids

A Global Source for Premium Fluids and Lubricants

American Chemical Technologies, Inc. (ACT) provides premium industrial lubricants and metalworking fluids to a wide range of industries. Founded more than 30 years ago in the U.S., ACT has grown to become an international supplier of highly specialized products for industry and markets through a global network. Our commitment to advanced technology and personal service continues today as we set new standards for product performance and customer satisfaction.

Call on Us for Total Support

We want your experience with our products to be successful. ACT supports its products with a full range of sales, technical, and customer service support, including information and/or assistance to help you with product selection, handling, maintenance, and disposal. Our Check-Mate hydraulic fluid monitoring program is designed to enable users to maintain fluid quality while monitoring the condition of all system components. Call ACT today for expert fluids and lubricants support.

To Learn More Call: 1-800-938-0101

Outside of the U.S. and Canada, please call 1-517-223-0300 (USA)

Europe

Schulze & Partner, PGmbH
Mr. Rudolf M.H. Schulze
Aachener Strabe 79
B-4700 Eupen, Belgium

Phone: +32-87-56 90 20
Fax: +32-87-56 90 17
Mobile: +49-1717778089
E-mail: schulze.partner@skynet.be
Web: www.schulzepartner.com

China

CMC Cometals China
Wei Dong
Floor B-11, Renji Plaza
101 Jingshun Road
Beijing, China 100102

Phone: +86-10-5954 0166
Fax: +86-10-5954 0101
Mobile: +86-13801080752
E-mail: wd@cmc.com

Ask About the Full Line of Fluids and Lubricants from ACT

- UCON™ Trident™ Water Soluble Anhydrous Hydraulic Fluids
- EcoSafe® FR Fire Resistant Hydraulic Fluids
- EcoSafe® EHC Hydraulic Fluids for the Power Generation Industry
- EcoSafe® NCLR Hydraulic Fluids for Nuclear Power Stations
- EcoSafe® TF-25 Turbine Fluid
- Neptune® Gear Oils
- EcoGear® Gear Oils



AMERICAN CHEMICAL TECHNOLOGIES, INC.

American Chemical Technologies

485 E. Van Riper Road
Fowlerville, MI 48836
Tele: 517-223-0300
Fax: 517-223-1703
www.americanchemtech.com