

# SYNTHETIC TURBINE HYDRAULIC BRAKE OIL

ISO VG 32

Product Profile

## DEVOTED TO PROTECTION®

AMSOIL Synthetic Turbine Hydraulic Brake Oil is an ISO VG 32 oil with an extreme operating temperature range engineered for superior performance and long oil life in industrial applications subjected to frequent low-temperature operation. Its high-quality synthetic base oils ensure exceptional fluidity in sub-zero temperatures for increased start-up performance, while its ultra-high viscosity index translates into good film thickness and wear protection at operating temperatures. AMSOIL Synthetic Turbine Hydraulic Brake Oil provides dependable operation throughout a wider temperature range than conventional ISO VG 32 hydraulic oils.

### MAXIMUM WEAR PROTECTION

Formulated with molecularly uniform synthetic base oils, AMSOIL Synthetic Turbine Hydraulic Brake Oil reduces friction in valves, pumps and hydraulic system components for efficient operation and reduced wear. Its high-performance anti-wear additive package employs zinc to help ensure long component life and reduced maintenance costs.

### LONG OIL LIFE

AMSOIL Synthetic Turbine Hydraulic Brake Oil is formulated with oxidation inhibitors that resist acid and sludge formation. Its robust formula reduces the need for frequent oil changes due to degraded oil or seasonal temperatures, making it ideal for extreme temperature ranges and applications that may be difficult to access. AMSOIL Synthetic Turbine Hydraulic Brake Oil's long-life properties help reduce maintenance costs.

PRODUCT FEATURES	USER BENEFITS
High viscosity index	Superior fluidity at low temperatures for immediate performance. Reduces possibility of pump cavitation in cold temperatures. Decreases the need for oil heaters. Reduces the need for seasonal oil changes for reduced costs. Provides a wider useful operating temperature range than conventional hydraulic oils.
Formulated with oxidation inhibitors	Promotes long oil life for maximum convenience and cost savings. Inhibits acid and sludge formation for a clean, efficient hydraulic system. Inhibits viscosity increase for optimum performance.
Excellent demulsibility	Better operation in humid and wet environments. Promotes water separation and improves filterability.
Seal friendly	Helps prevent leaks and extends seal life.
Foam resistant	Helps prevent pump cavitation and erratic operation. Allows for better protection and heat dissipation. Assists in maintaining fluid film thickness for increased wear resistance.
Long life	Reduces maintenance costs. Ideal for difficult-to-access applications.
Excellent filterability	Can be subjected to fine filtration for maximum cleanliness.

## TYPICAL TECHNICAL PROPERTIES

### AMSOIL Synthetic Turbine Hydraulic Brake Oil (THB)

ISO Viscosity Grade	32
Viscosity 100°C, cSt [ASTM D445]	9.5
Viscosity 40°C, cSt [ASTM D445]	33.9
Viscosity Index [ASTM D2270]	282
Specific Gravity (g/ml)	.8458
Density, (lb/gal)	7.042
Color	L0.5
Flash Point, °C (°F) (COC) [ASTM D92]	162 (324)
Fire Point, °C (°F) (COC) [ASTM D92]	188 (370)
Pour Point, °C (°F) [ASTM D97]	-55 (-67)
TAN [ASTM D664]	.28
Four Ball Wear Test [ASTM D4172] 75°C, 1200 rpm, 40 kg, 1 hr	0.45
Air Release, 50°C, min [ASTM D3427]	9.3
Foam Tendency [ASTM D892]	10/0, 35/0,15/0
Oxidation Stability, Acidity mg KOH/g @ 1000 hours [ASTM D943]	1.96
Copper Corrosion 100°C, 3 hr [ASTM D130]	1A
Dielectric Strength, kV	41
Filtration Test (w/o water) ISO 13357-2	
F1 min.,%	96.4
F2 min.,%	97.2
Filtration Test (w/o water) ISO 13357-1	
F1 min.,%	91.8
F2 min.,%	82.5
Rust Procedure A [ASTM D665A]	Pass
Rust Procedure B [ASTM D665B]	Pass
FZG Load Stage Failure A/8.3/90	10
Demulsibility [ASTM D1401]	40-40-0 (15)
Vane Pump Wear Modified DIN ENISO 20763 (150°F)	
Ring Loss, mg	37.1
Vane Loss, mg	4.1
Vane Pump Wear [ASTM D7043]	
Ring Loss, mg	7.9
Vane Loss, mg	2.4
Shear Test 20 hr KRL %Viscosity Loss	29.14
METALS (ppm)	
Calcium	85
Magnesium	120
Sulfur	920
Phosphorus	420
Zinc	540

## THB BULK MODULUS AND THERMAL EXPANSION

### ASTM 6793 ISO Thermal Tangent Bulk Modulus @ + 30°C

BM1000 (psig)	239557
BM2000 (psig)	250869
BM3000 (psig)	262439
BM4000 (psig)	274267
BM5000 (psig)	286355
BM6000 (psig)	298702
BM7000 (psig)	311308
BM8000 (psig)	324172
BM9000 (psig)	337295
BM10000 (psig)	350677

### ASTM 6793 ISO Thermal Tangent Bulk Modulus @ + 80°C

BM1000 (psig)	189145
BM2000 (psig)	202483
BM3000 (psig)	216273
BM4000 (psig)	230515
BM5000 (psig)	245209
BM6000 (psig)	260355
BM7000 (psig)	275952
BM8000 (psig)	292001
BM9000 (psig)	308503
BM10000 (psig)	325456

### ASTM D1903 Coefficient of Thermal Expansion

Specific Gravity 1 @ 25°C	0.8438
Specific Gravity 2 @ 65°C	0.8309
CTE	0.50959

## SEAL DATA

### Seal Compatibility DIN 53538 SRE-NBRI Seals (168 hr, 100°C)

Volume Change %	+10.43
Shore A Hardness Change	-5

## APPLICATIONS

AMSOIL Synthetic Turbine Hydraulic Brake Oil is designed for superior performance in hydraulic systems where the product viscosity and technical properties are appropriate for the application. An example may be hydraulics subject to cold-temperature conditions that require extra wear protection and long oil life.

## HEALTH & SAFETY INFORMATION

For recommendations on safe handling and use of these products, please refer to the Safety Data Sheet (SDS), which is available upon request through the AMSOIL Wind Group at [windsalesgroup@amsoil.com](mailto:windsalesgroup@amsoil.com) or (715) 399-6305.