

# MULLEN CIRCLE BRAND

## HYDRAULIC OIL *AntiWear*

### Mullen Circle Brand Blended Products:

*Cutting Oils*  
*Circle Cut #729*  
*Soluble Oils*  
*Synthetic Coolants*

*Semi-Synthetic Coolants*  
*Rust Preventives*  
*Cleaners*  
*Grease*

*Hydraulic Oil*  
*Compressor Oil*  
*Gear Oil*  
*Way Oil*

*Spindle Oil*  
*Machine Oil*  
*Synthetic Oil*

*Made In U.S.A.*



**Mullen Circle Brand, Inc.**  
3514 West Touhy Ave  
Skokie, IL 60076  
847/676-1880  
Fax: 847/676-3748  
[Solutions@MullenOil.com](mailto:Solutions@MullenOil.com)



### *Premium Antiwear Lubricants For Modern Hydraulics*

**Antiwear Hydraulic Oils** are premium grade lubricants designed to meet the needs of modern hydraulic equipment. **Antiwear Hydraulic Oils** are blended from virgin base oils and premium additive technology. These products exhibit exceptional resistance to thermal degradation, excellent demulsibility and are inert to copper alloys.

**Antiwear Hydraulic Oils** meet or exceed the following:

Denison HF-0	DIN 51524-2 (HM)	JCMAS P041 HK
Denison HF-1	DIN 51524-3 (HV)	ANSI/AGMA 9005-E02-RO
Denison HF-2	ISO 11158 (HM, HV)	GM LS-2
Eaton M-2950-S	ASTM D2168 (HM, HV)	AIST 126, 127
Eaton I-286-S3	SAE MS 1004 (HM, HV)	SEB 181222
MAG P68, P69, P70	Bosch Rexroth RE 90220	

*More ==>*

**...Providing Solutions To Industry Since 1912...**



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## ANTIWEAR HYDRAULIC OILS

	#22	#32	#46	#68	#100	#150	#220	#320	#460
<b>ISO Grade</b>	22	32	46	68	100	150	220	320	460
<b>SAE Grade</b>	5	10	20	20	30	40	50	—	—
<b>Viscosity, SUS @ 100 F</b>	110	160	240	353	520	750	1150	1673	2404
<b>Flash Point, F</b>	400	400	400	400	400	400	400	400	400
<b>Pounds/Gallon</b>	7.1	7.1	7.29	7.43	7.56	7.65	7.67	7.68	7.69

### Oxidation Stability, ASTM D-943

1000 Hours, Neutralization Number	0.3
Sludge	56 mg
Copper	100.33 mg

### Thermal Stability, 135 C

Viscosity Change, %	1.2
Neutralization Number Change, %	133
Sludge, mg/100 ml	2.3
Steel Rod Visual	1
Deposit, mg	0.3
Copper Rod Visual	2
Deposit, mg	0.1

### Demulsibility, ASTM D-1401

Oil/Water/Emulsion (Minutes)	40/40/0 (5)
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### Steel Corrosion Test, ASTM D-665

Distilled Water	No Rust
Synthetic Seawater	No Rust

### Foam Tests, ASTM D-982, Seq I, II, III

Foam, ml, 10 Minutes	None
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### Copper Corrosion, ASTM D-130

	1B
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### Wear Test, Four Ball

40 kg, 1800 rpm, 1 Hour, 55C	.62 mm
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### \*\*\*\*\* Cross Reference \*\*\*\*\*

ISO 32 Hydraulic Oil = Mobil DTE 24

ISO 46 Hydraulic Oil = Mobil DTE 25

ISO 68 Hydraulic Oil = Mobil DTE 26

*...Providing Solutions To Industry Since 1912...*

**Cutting Fluids \* Industrial Lubricants \* Greases \* Cleaners**

The Information Given Herein Is Believed To Be Reliable, But No Guarantee Is Made Nor Liability Assumed.