



MAG

The logo features the word "MAG" in a bold, white, italicized sans-serif font with a black outline, set against a red background. To the right of "MAG" is a large, stylized number "1" in yellow with a black outline, also on a red background. The entire logo is framed by a grey border with a checkered pattern on the right side.

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Evolutionary Performance™



**INDUSTRIAL
LUBRICANTS
& GREASES**

The background of the advertisement is a black and white photograph of an excavator bucket. The bucket is tilted, and a large amount of dark soil or gravel is falling out of it, creating a dynamic sense of motion. The excavator's arm and joints are visible in the upper right corner. The overall aesthetic is industrial and powerful.



Evolutionary Performance™

FMX TECHNOLOGY **FRICION MANAGEMENT FOR XTREME PROTECTION**

ANTI-WEAR
HYDRAULIC OIL



OEMs continue to evolve hydraulic equipment and pump designs. Pumps get smaller and power output increase and the lubricants performance demands rise. Escalating power density leads to higher operating temperatures and pressures. One brand has evolved right alongside today's equipment – MAG 1®. Only the most advanced industrial lubricants meet the difficult challenges of effectively balancing performance, strength and durability.

- Extra protection for equipment life and reliability.
- Outstanding wear and corrosion protection.
- Excellent varnish control and cleanliness.
- Formulated to provide 5,000 hours of oxidation stability.

MAG 1 AW ISO FLUIDS

MAG 1 AW ISO Fluids designed to help improve uptime, reduce costs and increase productivity. Our hydraulic oils offer energy-efficient benefits and improved performance across a wide range of temperatures. They specifically designed to meet the demands of high-pressure, industrial and mobile equipment hydraulic systems.

MAG 1 ALL-YEAR AW HYDRAULIC OIL

Suitable for use as a general purpose hydraulic oil used in various ambient temperatures. Viscosity similar to a 5W-20.

PACK SIZES

	Pack Size	Product #
AW ISO 22*	5 Gallon	65847
	55 Gallon	62970
AW ISO 32*	3/1 Gallon	00326
	2/2.5 Gallon	00322
	5 Gallon	00325
	55 Gallon	62861
AW ISO 46*	3/1 Gallon	00466
	2/2.5 Gallon	00462
	5 Gallon	00465
	55 Gallon	00468
	330 Gallon	65574
	3/1 Gallon	60774
AW ISO 68*	2/2.5 Gallon	00682
	5 Gallon	00685
	55 Gallon	62862
AW ISO 100*	330 Gallon	65575
	55 Gallon	63791
	2/2.5 Gallon	00292
All-Year AW*	5 Gallon	00295
	55 Gallon	62860

CLAIMS

	AW ISO 22	AW ISO 32	AW ISO 46	AW ISO 68	AW ISO 100
ASTM D6158	●	●	●	●	●
Eaton E-FDGN-TB002-E, 35VQ25A	●	●	●	●	●
Bosch Rexroth	○	○	○	○	○
Cincinnati/MAG IAS P-68		○			
Cincinnati/MAG IAS P-69				○	
Cincinnati/MAG IAS P-70			○		
DIN 51524, Part 1,2,3	○	○	○	○	○
General Motors LS-2	○	○	○	○	○
JCMAS HK	○	○	○	○	○
Parker Denison HF-0, HF-1	○	○	○	○	○
Parker Denison HF-2	○	○	○	○	○
Racine	○	○	○	○	○
Sperry Vickers/Eaton I-286-S, M-2950-S	○	○	○	○	○
US Steel 127, 136	○	○	○	○	○

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES

Properties	Test Method	AW ISO 22	AW ISO 32	AW ISO 46	AW ISO 68	AW ISO 100	All-Year AW
Calcium, wt. %	ASTM D5185	0.003	0.003	0.003	0.003	0.003	0.003
Color	ASTM D1500	0.5	0.5	0.5	0.5	0.5	0.5
Flash Point °C	ASTM D92	210	210	225	228	235	225
Flash Point °F	ASTM D92	410	410	437	442	455	437
Gravity, °API	ASTM D287	33.50	32.44	31.46	30.71	30.12	33.09
Oxidation Hours	ASTM D943	5,000	5,000	5,000	5,000	5,000	5,000
Phosphorus, wt. %	ASTM D5185	0.033	0.033	0.033	0.033	0.033	0.034
Pour Point °C (°F)	ASTM D5950	-42°C (-44°F)	-39°C (-38°F)	-33°C (-27°F)	-30°C (-22°F)	-30°C (-22°F)	-42°C (-44°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8576	0.8631	0.8683	0.8723	0.8755	0.8597
Sulfur, wt. %	ASTM D4951	0.065	0.065	0.065	0.065	0.065	0.071
Viscosity @ 100°C cSt	ASTM D445	4.36	5.55	6.95	8.95	11.31	7.89
Viscosity @ 40°C cSt	ASTM D445	21.82	32.11	46.03	69.25	99.86	44.86
Viscosity Index	ASTM D2270	107	110	105	103	99	148
Zinc, wt. %	ASTM D5185	0.041	0.041	0.041	0.041	0.041	0.043

*Available in Bulk



Evolutionary Performance™

FMX® TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

INDUSTRIAL R&O
HYDRAULIC OIL



OEMs and systems continue to evolve. One brand has evolved right alongside today's equipment – MAG 1®. Only the most advanced industrial lubricants meet the difficult challenges of effectively balancing performance, strength and durability.

MAG 1 Industrial R&O ISO Hydraulic Oils have an outstanding rust/oxidation resistance, contains a metal passivator, demulsifier and antifoam protection. Our FMX® Technology provides outstanding control of friction and wear by using advanced molecules that bond together to create a wear-resistant shield.

- Provides unsurpassed protection even in the harshest conditions to fight oxidation, separate air and water and improve filtration.
- Excellent varnish control and cleanliness.
- Long oil life even in high-pressure systems.
- Extra protection for equipment life and reliability.

PACK SIZES	Product #	Pack Size	
	Industrial R&O ISO 68*	55 Gallon	63416
	Industrial R&O ISO 100*	55 Gallon	63789
	Industrial R&O ISO 220*	330 Gallon	63756
	55 Gallon	63790	

CLAIMS	Industrial R&O ISO 68	Industrial R&O ISO 100	Industrial R&O ISO 220
	AFNOR E-48600 HL	○	○
Alstom HTGD 90117	○	○	○
British Standard 489	○	○	○
Cincinnati Machine/Milacron P-54	○		
Denison HF-1	○	○	○
DIN 51515 Part 1, Part 2	○	○	○
DIN 51524, Part 1	○	○	○
General Electric GEK-32568F, GEK107395	○	○	○
MIL-L-17672C	○	○	○
Solar Turbines ES 9-224	○	○	○
U.S. Steel 126	○	○	○
○ = Suitable for Use			

TYPICAL PHYSICAL PROPERTIES				
Properties	Test Method	Industrial R&O ISO 68	Industrial R&O ISO 100	Industrial R&O ISO 220
Color	ASTM D1500	0.5	0.5	6.5
Gravity, °API	ASTM D287	30.81	29.24	28.31
Nitrogen, wt. %	ASTM D4629	0.0164	0.0164	0.0164
Phosphorus, wt. %	ASTM D5185	0.003	0.003	0.003
Pour Point °C (°F)	ASTM D5950	-33°C (-27°F)	-33°C (-27°F)	-21°C (-6°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8718	0.8765	0.8854
Sulfated Ash, wt. %	ASTM D874	0	0	0
Sulfur, wt. %	ASTM D4951	0.011	0.011	0.011
Viscosity @ 100°C cSt	ASTM D445	8.89	11.4	18.95
Viscosity @ 40°C cSt	ASTM D445	68.92	101.9	218.7
Viscosity Index	ASTM D2270	102	106	98

*Available in Bulk



Evolutionary Performance™

INDUSTRIAL R&O
TURBINE OIL



MAG 1® Industrial R&O Turbine Oil with FMX® Technology are specially engineered to provide outstanding rust/oxidation resistance, contains a metal passivator, demulsifier and anti-foam protection. Our FMX Technology provides outstanding control of friction and wear by using advanced molecules that bond together to create a wear-resistant shield.

- Extra protection for equipment life and reliability.
- Long oil life.
- Excellent varnish control and cleanliness.
- Optimized maintenance cost and uptime.

FMX® TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

PACK SIZES	Pack Size	Product #
	Industrial R&O ISO 32	55 Gallon
Industrial R&O ISO 68	55 Gallon	66074

CLAIMS	Industrial R&O ISO 32	Industrial R&O ISO 68
	AFNOR E-48600 HL	○
Alstom HTGD 90117	○	○
British Standard 489	○	○
Cincinnati Machine/Milacron P-54	○	○
Denison HF-1	○	○
DIN 51515 Part 1, Part 2	○	○
DIN 51524, Part 1	○	○
General Electric GEK-32568F, GEK107395	○	○
MIL-L-17672C	○	○
Solar Turbines ES 9-224	○	○
U.S. Steel 126	○	○

○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES			
Properties	Test Method	Industrial R&O ISO 32	Industrial R&O ISO 68
Color	ASTM D1500	0.5	0.5
Gravity, °API	ASTM D287	32.63	30.81
Nitrogen, wt. %	ASTM D4629	0.0164	0.0164
Phosphorus, wt. %	ASTM D5185	0.003	0.003
Pour Point °C (°F)	ASTM D5950	-33°C (-27°F)	-33°C (-27°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8621	0.8718
Sulfated Ash, wt. %	ASTM D874	0	0
Sulfur, wt. %	ASTM D4951	0.011	0.011
Viscosity @ 100°C cSt	ASTM D445	5.565	8.89
Viscosity @ 40°C cSt	ASTM D445	32.38	68.92
Viscosity Index	ASTM D2270	109	102



Evolutionary Performance™

GREASES



FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

MAG 1® Greases are specially designed to provide all-around balanced performance even in extreme operating conditions. They cushion the grind of heavy loads and protect surfaces for extended equipment life. Available in a broad range of NLGI grades and fluid viscosities to support a broad range of applications.

- Improved equipment life and reliability.
- Reduce friction at start up and running speed.
- Protect at a wide range of operating temperatures, pressures and speeds.
- Protect from water and particle contamination.

MAG 1 MULTI PURPOSE LITHIUM GREASE

MAG 1 Full Synthetic Ultra Grease is specially formulated using only premium base oils, lithium, 12 hydroxy stearic acid and additive systems to provide outstanding lubrication and protection.

MAG 1 MULTI PURPOSE LITHIUM GREASE WITH MOLY

MAG 1 Multi-Purpose Lithium Grease with Moly is has been fortified with molybdenum disulfide and graphite to provide protection against seizure under high loads and severe shock load conditions.

MAG 1 HIGH TEMP / WHEEL BEARING GREASE

MAG 1 High Temp/Wheel Bearing Grease is designed and formulated for bearings operating under conditions of extreme pressure and high temperature. Can also be used for general purpose lubrication.

MAG 1 LITHIUM MARINE GREASE

MAG 1 Lithium Marine Grease is specially formulated with premium, state-of-the-art lithium complex grease. This tacky grease resists water washout, even under severe operating conditions, including saltwater.

MAG 1 FULL SYNTHETIC ULTRA GREASE

MAG 1 Full Synthetic Ultra Grease is specially formulated with a premium, 100% full synthetic PAO. This grease has high film strength, extreme pressure (EP) protection and anti-wear properties.

PACK SIZES

	Pack Size	Product #		Pack Size	Product #
Multi-Purpose Lithium Grease	3/3 Ounces	00712	High Temp / Wheel Bearing Grease	10/14 Ounces	00723
	10/14 Ounces	00713		12/1 Pound	00720
	12/1 Pound	60134		6/4 Pound	00724
	35 Pound	00715		35 Pound	00725
	120 Pound	00719		120 Pound	20020
Multi-Purpose Lithium Grease with Moly	10/14 Ounces	00733	Lithium Marine Grease	3/3 Ounces	60128
	35 Pound	00735		10/14 Ounces	60130
Full Synthetic Ultra Grease	10/14 Ounces	64049		12/1 Pound	60132

CLAIMS

	Multi-Purpose Lithium Grease	Multi-Purpose Lithium Grease with Moly	High Temp / Wheel Bearing Grease	Lithium Marine Grease	Full Synthetic Ultra Grease
NGLI Grade	2	2	2	2	2
Operating Temp Range	-20 to -250°F	-25 to 250°F	-40 to 325°F	-	-40 to 350°F
Color	Amber	Molly-Gray	Red	Blue	Purple
Thickener Type	Lithium 12-Hydroxy Stearate	Lithium	Lithium Complex	Lithium Complex	Lithium Complex

TYPICAL PHYSICAL PROPERTIES

Properties	Test Method	Multi-Purpose Lithium Grease	Multi-Purpose Lithium Grease with Moly	High Temp / Wheel Bearing Grease	Lithium Marine Grease	Full Synthetic Ultra Grease
Copper Corrosion	ASTM D4048	-	-	1b	1b	-
Dropping Point, °C (°F), Min.	ASTM D2265	177°C (350°F)	177°C (350°F)	260°C (500°F)	260°C (500°F)	260°C (500°F)
Four Ball EP Weld Point, Min	ASTM D2596	-	250	250	315	250
Four Ball Load Wear Index, Kgf	ASTM D2596	-	40	45	45	-
Four Ball Wear, mm Scar Dia	ASTM D2266	-	0.6	0.55	0.6	0.6
Oil Separation, % Loss Max.	ASTM D1742	-	10	2.5	3.5	10
Oxidation Stability, PSI Drop	ASTM D942	5	5	5	5	7
Roll Stability	ASTM D1831	>10	10	-	-	-
Rust Prevention	ASTM D1743	-	Pass	Pass	Pass	Pass
Timken OK Load, LB	ASTM D2509	-	45	50	60	55
Unworked Penetration @ 77°F	ASTM D217	265-295	-	-	-	-
Water Washout % Loss Max	ASTM 1264	>15	10	4.5	5	5
Wheel Bearing Leakage	ASTM D4290	-	-	6.0	6.0	-
Worked Penetration @ 77°F	ASTM D217	265-295	265-295	265-295	265-295	265-295



Evolutionary Performance™

FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

SYNTHETIC
GEAR OIL



MAG 1® Full Synthetic Lubricants protect equipment operating under severe loads and pressures, wide operating temperature ranges and contamination threats. They also provide unsurpassed advantages that exceed the capabilities of conventional lubricants. MAG 1 Full Synthetic Lubricants offer longer life and can extend equipment life, while helping increase worker safety by minimizing maintenance.

MAG 1 Full Synthetic Gear Lubricant is specially formulated for multipurpose, extreme pressure applications, including conventional differentials, gear boxes, limited slip rear axles, manual transmissions and hypoid gears.

- Superior protection against wear, especially under extreme pressure and high torque operation.
- High resistance to thermal breakdown.
- Helps prevent foaming, rust and corrosion.
- Smooths and quiets operation.

PACK SIZES

	Pack Size	Product #
Full Synthetic SAE 75W-90 GL-5 Gear Oil*	6/1 Quart	62378
	5 Gallon	62380
	16 Gallon	62621
	55 Gallon	64875
Full Synthetic SAE 75W-140 GL-5 Gear Oil*	330 Gallon	63879
	6/1 Quart	00870
	5 Gallon	62874
	16 Gallon	62620
Full Synthetic SAE 80W-140 GL-5 Gear Oil*	55 Gallon	64874
	330 Gallon	68247

CLAIMS

	Full Synthetic SAE 75W-90 GL-5 Gear Oil	Full Synthetic SAE 75W-140 GL-5 Gear Oil	Full Synthetic SAE 80W-140 GL-5 Gear Oil
AGMA 9005-E02, 250.03, 250.04, 251.02, No. 4	●	●	●
AIST/US Steel 224	●	●	●
API GL-5	●	●	●
ArvinMeritor (Rockwell International) 076-E	●	●	●
Mack GO-J, GO-H, GO-G	●	●	●
MT-1	●	●	●
SAE J2360, MIL-2105E/F	●	●	●
GM 9986115	○		
Limited Slip	○	○	○

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES

Properties	Test Method	Full Synthetic SAE 75W-90 GL-5 Gear Oil	Full Synthetic SAE 75W-140 GL-5 Gear Oil	Full Synthetic SAE 80W-140 GL-5 Gear Oil
Brookfield Viscosity at -40°C, cP	ASTM D2983	135,000	127,000	-
Brookfield Viscosity at -26°C, cP	ASTM D2983	-	-	72,000
Color	ASTM D1500	1	1	2
Flash Point °C	ASTM D92	224	232	221
Flash Point °F	ASTM D92	435	450	430
Gravity, °API	ASTM D287	31.24	34.31	28.84
Pour Point °C (°F)	ASTM D5950	-51°C (-60°F)	-51°C (-60°F)	-51°C (-60°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8695	0.8534	0.8825
Viscosity @ 100°C cSt	ASTM D445	16.15	27.64	30.69
Viscosity @ 40°C cSt	ASTM D445	109.3	171.8	283.4
Viscosity Index	ASTM D2270	159	200	147

*Available in Bulk



Evolutionary Performance™

FMX TECHNOLOGY **FRICION MANAGEMENT FOR XTREME PROTECTION**

CONVENTIONAL GEAR OIL



MAG 1® Driveline Gear Oils are engineered for use in drivetrains that require gear lubricants with excellent load-carrying capability and where extreme pressures and shock loading are expected. Driveline gear oils can be used for on-highway passenger cars, SUVs, light- and heavy-duty trucks, buses, and vans. Other applications include off-highway industries, such as construction, mining, quarrying and agriculture.

MAG 1 Gear Lubricant is specially formulated for multipurpose, extreme pressure applications, including conventional differentials, gear boxes, limited slip rear axles, manual transmissions and hypoid gears.

- Superior protection against wear, especially under extreme pressure and high torque operation.
- High resistance to thermal breakdown.
- Helps prevent foaming, rust and corrosion.
- Smooths and quiets operation.

PACK SIZES

	Pack Size	Product #
SAE 80W-90 GL-5*	6/1 Quart	00820
	3/1 Gallon	00826
	2/2.5 Gallon	00822
	5 Gallon	00825
	16 Gallon	00829
	55 Gallon	62864
SAE 85W-140 GL-5*	6/1 Quart	00830
	3/1 Gallon	00836
	2/2.5 Gallon	00832
	5 Gallon	00835
	16 Gallon	00839
	55 Gallon	62865
SAE 90 GL-1*	330 Gallon	67740
SAE 90 GL-4*	5 Gallon	00865

CLAIMS

	SAE 80W-90 GL-5	SAE 85W-140 GL-5	SAE 90 GL-1	SAE 90 GL-4
API GL-5	●	●		
API GL-4				●
API GL-1			○	
Mack GO-J, GO-H, GO-G	●	●		
MT-1	●	●		
SAE J2360, MIL-2105E/F	●	●		
Limited Slip	○	○		

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES

Properties	Test Test Method	SAE 80W-90 GL-5	SAE 85W-140 GL-5	SAE 90 GL-1	SAE 90 GL-4	Marine SAE 80W-90
Brookfield Viscosity at -26°C, cP	ASTM D2983	92,000	-	-	-	89,000
Brookfield Viscosity at -12°C, cP	ASTM D2983	-	55,000	-	-	-
Color	ASTM D1500	7	8	6.5	6.5	7
Flash Point °C	ASTM D92	224	235	224	224	224
Flash Point °F	ASTM D92	435	455	435	435	435
Gravity, °API	ASTM D287	27.76	25.69	28.99	28.53	28.08
Pour Point °C (°F)	ASTM D5950	-33°C (-27°F)	-18°C (0°F)	-33°C (-27°F)	-	-33°C (-27°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8885	0.9002	0.8817	0.8842	0.8867
Viscosity @ 100°C cSt	ASTM D445	13.98	26.39	14.89	14.8	15.29
Viscosity @ 40°C cSt	ASTM D445	130.9	347.7	147.1	146.5	144.8
Viscosity Index	ASTM D2270	104	100	101	100	107

*Available in Bulk



Evolutionary Performance™

EP INDUSTRIAL GEAR OIL



FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

MAG 1® EP Industrial Gear Oils are engineered for use in systems that require industrial gear lubricants with excellent protection technology to handle increasing power density and risk of micropitting, extend drain interval and reduce operating and manpower costs. Our Industrial Gear Oils are designed to provide outstanding performance even in the harshest conditions.

MAG 1 EP Industrial Gear Oils are recommended for lubrication of spur, helical, bevel, and worm gear configurations subject to heavy or shock loading in industrial equipment. They perform well at high temperatures and in the presence of water, which can often affect normal operations. Benefits include:

- Build a barrier to reduce friction and wear.
- Help to reduce operating and manpower costs.
- Long oil life and equipment protection.

PACK SIZES

	Pack Size	Product #
EP 68 Industrial Gear Oil*	55 Gallon	65663
EP 100 Industrial Gear Oil*	55 Gallon	63792
EP 150 Industrial Gear Oil*	55 Gallon	62866
	330 Gallon	64764
EP 220 Industrial Gear Oil*	55 Gallon	62867
	330 Gallon	67779
EP 320 Industrial Gear Oil*	55 Gallon	63793
	330 Gallon	67336
EP 460 Industrial Gear Oil*	55 Gallon	62873
	330 Gallon	67781
EP 680 Industrial Gear Oil*	55 Gallon	63794
	330 Gallon	64376

CLAIMS

	EP 68 Industrial Gear Oil	EP 100 Industrial Gear Oil	EP 150 Industrial Gear Oil	EP 220 Industrial Gear Oil	EP 320 Industrial Gear Oil	EP 460 Industrial Gear Oil	EP 680 Industrial Gear Oil
ISO 12925-1 type CKC	●	●	●	●	●	●	●
AGMA 9005 D-94, 250.04, 251.02	○	○	○	○	○	○	○
API GL-2	○	○	○	○	○	○	○
Cincinnati Machine/Milacron	○	○	○	○	○	○	○
U.S. Steel 224	○	○	○	○	○	○	○

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES

Properties	Test Method	EP 68 Industrial Gear Oil	EP 100 Industrial Gear Oil	EP 150 Industrial Gear Oil	EP 220 Industrial Gear Oil	EP 320 Industrial Gear Oil	EP 460 Industrial Gear Oil	EP 680 Industrial Gear Oil
Color	ASTM D1500	0.5	6.0	7	7.5	7.5	4	7.5
Gravity, °API	ASTM D287	30.60	28.77	28.84	27.83	27.06	26.46	27.45
Phosphorus, wt. %	ASTM D5185	0.013	0.013	0.013	0.013	0.013	0.013	0.013
Pour Point °C (°F)	ASTM D5950	-30°C (-22°F)	-30°C (-22°F)	-27°C (-17°F)	-24°C (-11°F)	-15°C (5°F)	-15°C (5°F)	-15°C (5°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8729	0.8829	0.8825	0.8881	0.8924	0.8958	0.8902
Sulfur, wt. %	ASTM D4951	0.336	0.336	0.336	0.336	0.336	0.336	0.336
Viscosity @ 100°C cSt	ASTM D445	8.87	11.75	15.31	19.88	25.53	32.01	50.37
Viscosity @ 40°C cSt	ASTM D445	67.23	98.86	145.7	217.9	325.3	463.6	684.8
Viscosity Index	ASTM D2270	105	108	107	105	102	100	128

*Available in Bulk



Evolutionary Performance™

NON-DETERGENT LUBRICATING OIL

MAG 1® Non-Detergent Lubricating Oils are recommended for compressors and hydraulic systems which require non-detergent oils. Non-detergent oils are effective in the lubrication of bearings and chains in non-critical once-through systems. Not for use in automotive gasoline engines.



NATURAL GAS ENGINE OIL



FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

MAG 1® Natural Gas Low Ash SAE 40 Engine Oil is designed specifically for use in medium and high speed (rpm) gas engines fueled by processed or pipeline natural gas or other gas sources that may contain corrosive materials.

- Low ash formula helps neutralize corrosion.
- Outstanding deposit control.
- Thermal stability and long life.

PACK SIZES	Pack Size Product #	
	ND SAE 10*	2/2.5 Gallon 00212 55 Gallon 62091
ND SAE 20*	55 Gallon 60691	
ND SAE 30*	2/2.5 Gallon 00232 55 Gallon 62859	
ND SAE 40*	55 Gallon 60692	

CLAIMS	ND SAE 10	ND SAE 20	ND SAE 30	ND SAE 40
	API SA	●	●	●
API GL-1				○

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES					
Properties	Test Method	ND SAE 10	ND SAE 20	ND SAE 30	ND SAE 40
Color	ASTM D1500	1.0	1.0	1.5	5.0
Flash Point °C	ASTM D92	204	210	221	225
Flash Point °F	ASTM D92	399	410	430	437
Gravity, °API	ASTM D287	32.48	28.88	21.94	23.35
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8629	0.8823	0.9222	0.9138
Viscosity @ 100°C cSt	ASTM D445	4.64	6.08	10.98	14.1
Viscosity @ 40°C cSt	ASTM D445	24.71	42	143.8	192.3
Viscosity Index	ASTM D2270	103	85	38	57

*Available in Bulk

PACK SIZES	Pack Size Product #	
	Natural Gas SAE 40	55 Gallon 66725

TYPICAL PHYSICAL PROPERTIES		
Properties	Test Method	Natural Gas SAE 40
Color	ASTM D1500	2
Flash Point °C	ASTM D92	220
Flash Point °F	ASTM D92	428
Gravity, °API	ASTM D287	29.85
Phosphorus, wt. %	ASTM D5185	0.025
Pour Point °C (°F)	ASTM D5950	-27°C (-17°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.877
Sulfated Ash, wt. %	ASTM D874	0.46
TBN, mgKOH/g	ASTM D2896	5.7
Viscosity @ 100°C cSt	ASTM D445	13.58
Viscosity @ 40°C cSt	ASTM D445	134.65
Viscosity Index	ASTM D2270	96
Zinc, wt. %	ASTM D5185	0.027



Evolutionary Performance™

FMX® TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

RAILROAD & MARINE
ENGINE OIL



MAG 1® Railroad/Marine Diesel SAE 40W Engine Oil was designed with Tier 4 engines in mind, which require a more robust engine oil that works harder to keep your entire fleet running smoothly while delivering significant cost savings. The zinc-free additive technology is specifically designed to protect silver bearings typically found in railroad and marine engines, while also providing outstanding deposit and soot control. It delivers exceptional oxidative stability and corrosion protection through superior TBN retention.

- Outstanding oxidation and corrosion protection for longer oil life.
- Exhaust system and turbocharger deposit control.
- Formulated for engines using Low and Ultra Low Sulfur Fuels (LSF and ULSF).
- Zinc-free formulation to protect silver bearings.

PACK SIZES

	Pack Size	Product #
RR/Marine SAE 40	330 Gallon	68166

CLAIMS

	RR/Marine SAE 40
GE Generation 4 Long-Life	●
LMAO Generation 4, 5, 6	●
Alco, medium speed, 2 and 4 cycle	○
API CF	○
Baldwin-Lima-Hamilton, medium speed 2 and 4 cycle	○
Caterpillar, medium speed, 2 and 4 cycle	○
Cleveland, medium speed, 2 and 4 cycle	○
Electro-Motive Diesel, medium 2 and 4 cycle	○
Fairbanks Morse, medium speed, 2 and 4 cycle	○

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES

Properties	Test Method	RR/Marine SAE 40
Color	ASTM D1500	4.5
Flash Point °C	ASTM D92	230
Flash Point °F	ASTM D92	446
Gravity, °API	ASTM D287	28.21
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.886
TBN, mgKOH/g	ASTM D2896	10.0
Viscosity @ 100°C cSt	ASTM D445	15.1
Viscosity @ 40°C cSt	ASTM D445	143
Viscosity Index	ASTM D2270	107
Zinc, wt. %	ASTM D5185	<0.001



Evolutionary Performance™

FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

OTHER INDUSTRIAL OILS



MAG 1® Industrial Lubricants provide solutions that make jobs easier or provide protection for equipment and systems.

MAG 1 MOLY TENTER CHAIN LUBE

MAG 1 Moly Tenter Chain Lube ISO 220 is an extreme-pressure liquid chain lube that is specially formulated to lubricate slow to moderate moving chains found in automotive, industrial, construction and mining applications.

- Available in ISO 68 and ISO 220 viscosities.

MAG 1 WAY LUBE OILS

MAG 1 Way Oils are a specially formulated fluid for the lubrication of slideways on industrial machine tools. Mild EP performance prevents scoring under heavy loads and special metal wetting agent protects all metal surfaces from rust and corrosion.

MAG 1 HYDRAULIC JACK OIL

MAG 1 Hydraulic Jack Oil is formulated with oxidation stable base oils, rust inhibitors, anti-wear agents and anti-foam agents to provide protection for hydraulic jack and lift equipment.

MAG 1 SNOW PLOW HYDRAULIC OIL

MAG 1 Premium Snow Plow Hydraulic Oil is specially formulated with anti-wear additives protecting metal components of high pressure hydraulic systems. Designed with anti-freeze additives to give excellent cold weather performance in extreme conditions to -50°F.

PACK SIZES	Pack Size	Product #
	Moly Tenter Chain Lube	330 Gallon
Way Lube ISO 68*	55 Gallon	62871
Way Lube ISO 220*	55 Gallon	62870
Hydraulic Jack	6/1 Quart	00925
Snow Plow Hydraulic	6/1 Quart	65979

CLAIMS	Hydraulic Jack	Snow Plow Hydraulic
	ASTM D6158	●
Eaton E-FDGN-TB002-E, 35VQ25A	●	●
Bosch Rexroth	○	○
Cincinnati/MAG IAS P-68	○	
Cincinnati/MAG IAS P-70		○
DIN 51524, Part 1, 2, 3	○	○
General Motors LS-2	○	○
JCMAS HK	○	○
Parker Denison HF-0, HF-1	○	○
Parker Denison HF-2	○	○
Racine	○	○
Sperry Vickers/Eaton I-286-S, M-2950-S	○	○
US Steel 127, 136	○	○

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES						
Properties	Test Method	Moly Tenter Chain Lube	Way Lube ISO 68	Way Lube ISO 220	Hydraulic Jack	Snow Plow Hydraulic
Color	ASTM D1500	8	0.5	6.0	1	Blue
Flash Point °C	ASTM D92	226	218	226	210	225
Flash Point °F	ASTM D92	440	424	439	410	437
Gravity, °API	ASTM D287	28.24	30.99	28.21	32.44	37.17
Nitrogen, wt. %	ASTM D4629	-	0.0336	0.0336	-	-
Oxidation Hours	ASTM D943	-	-	-	5,000	6,000
Phosphorus, wt. %	ASTM D5185	-	-	-	0.034	0.034
Pour Point °C (°F)	ASTM D5950	-24°C (-11°F)	-30°C (-22°F)	-24°C (-11°F)	-39°C (-38°F)	-46°C (-51°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8858	0.8708	0.886	0.8631	0.8389
Sulfur, wt. %	ASTM D4951	-	0.095	0.095	0.071	0.071
Viscosity @ 100°C cSt	ASTM D445	18.85	8.85	18.91	5.55	4.36
Viscosity @ 40°C cSt	ASTM D445	210.7	66.78	215.2	32.11	20.53
Viscosity Index	ASTM D2270	100	106	98	110	122
Zinc, wt. %	ASTM D5185	4.5	-	-	0.043	0.043

*Available in Bulk



Evolutionary Performance™

FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

CONSTRUCTION LUBRICANTS



MAG 1® Construction Lubricants provide solutions that make jobs easier or provide protection for equipment and systems.

MAG 1 ROCK DRILL OILS

MAG 1 Rock Drill Oil is formulated for internal lubrication of all makes of pneumatic percussion air-powered tools under the most severe conditions. It is formulated with extreme pressure additives and rust-inhibiting agents. Recommended for use in air drills, drifters, high and low-speed drills, jackhammers, paving breakers, stoppers and wagon drills.

- Available in ISO 46 and ISO 100 viscosities.

MAG 1 CONCRETE FORM OIL

MAG 1 Concrete Form Oil is a non-staining fluid specifically designed for easy release of concrete forms.

MAG 1 VACUUM PUMP OIL ISO 68

MAG 1 Vacuum Pump ISO 68 Oil is specially formulated with only the finest quality, base oils and an advanced additive system to deliver unsurpassed protection and performance. Recommended for use in most rotary vane and piston pumps.

- Outstanding control of friction and wear.

MAG 1 ZINC FREE EXCAVATOR OIL ISO 46

MAG 1 Zinc-Free Excavator ISO 46 Hydraulic Fluid is designed for Hitachi Excavators and other applications which require an ISO 46 zinc-free additive system.

PACK SIZES	Pack Size	Product #	CLAIMS			
			Rock Drill ISO 46	Rock Drill ISO 100	Excavator ISO 46 ZF	Vacuum Pump ISO 68
Rock Drill ISO 46*	55 Gallon	67533	AGMA 9005 D-94, 250.04, 251.02	○	○	
			ASTM D6158			●
Rock Drill ISO 100*	55 Gallon	64091	API GL-2	○	○	
			Bosch Rexroth			○
Excavator ISO 46 ZF*	330 Gallon	68245	Cincinnati Machine/Milacron	○	○	
			Cincinnati/MAG IAS P-69			○
Vacuum Pump ISO 68*	2/2.5 Gallon	00672	DIN 51524, Part 1,2,3	○		○
			DIN 51524 Part 2			●
Concrete Form Oil*	55 Gallon	62868	Dresser-Rand, Ingersoll-Rand, Gardner-Denver, Chicago-Pneumatic, and Joy equipment	○	○	
			Eaton Brochure 03-401-2010			●
			Eaton E-FDGN-TB002-E, 35VQ25A			●
			General Motors LS-2	○		○
			JCMAS HK	○		○
			Parker Denison HF-0	○		○
			Parker Denison HF-1	○		○
			Parker Denison HF-2	○		○
			Racine			○
			Sperry Vickers/Eaton I-286-S, M-2950-S	○		○
			U.S. Steel 127, 136	○		○
			U.S. Steel 224	○	○	

● = Meets Requirements ○ = Suitable for Use

TYPICAL PHYSICAL PROPERTIES

Properties	Test Method	Rock Drill ISO 100	Excavator ISO 46 ZF	Vacuum Pump ISO 68	Concrete Form Oil
Brookfield Viscosity at 35°C, cP	ASTM D2983	-	24,000	-	-
Color	ASTM D1500	6	1	1	0.5
Flash Point °C	ASTM D92	235	225	228	207
Flash Point °F	ASTM D92	455	437	442	405
Gravity, °API	ASTM D287	29.50	31.71	30.71	33.88
Nitrogen, wt. %	ASTM D4629	-	0.019	-	-
Oxidation Hours	ASTM D943	-	5,000	5,000	-
Phosphorus, wt. %	ASTM D5185	0.013	0.064	0.034	-
Pour Point °C (°F)	ASTM D5950	-30°C (-22°F)	-45°C (-49°F)	-30°C (-22°F)	-15°C (5°F)
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8789	0.867	0.8723	0.8556
Sulfur, wt. %	ASTM D4951	0.336	0.1287	0.071	0.336
Viscosity @ 100°C cSt	ASTM D445	12.23	8.141	8.95	4.13
Viscosity @ 40°C cSt	ASTM D445	102.5	46.297	69.25	20.15
Viscosity Index	ASTM D2270	111	150	103	107
Zinc, wt. %	ASTM D5185	-	-	0.043	-

*Available in Bulk



Evolutionary Performance™

MAG 1® motor oils, lubricants and chemicals are designed to keep pace with today's engine demands, requiring lighter viscosities and increased power densities. It's the only brand with FMX® Technology System, which meets the difficult challenges of effectively balancing performance, strength and durability.

THE MEANING OF EVOLUTIONARY PERFORMANCE™

Today's engines, machinery and equipment are evolving rapidly as OEMs push for more power density, lighter viscosity oil and increased fuel or fluid efficiency. MAG 1 is leading the way in this new evolution, based on the science of advanced additives and powerful molecular structures. It's all part of our exclusive FMX Technology System that boosts performance on many levels under the most severe operating conditions.

It means, despite lower viscosities, MAG 1 still delivers extraordinary performance, strength and durability, in every grade. Even the thinnest MAG 1 oils and fluids perform better than thicker oils of the past.

MAG 1 engine oils and lubricants are chemically formulated to deliver a higher level of performance that rises to the challenge of ever-increasing demands and developments by automotive, heavy duty truck and industrial equipment manufacturers.



PERFORMANCE

MAG 1 delivers unsurpassed protection to control friction and wear well beyond standard industry requirements. It can also help extend engine life and improve the performance of all types of vehicles, trucks, machinery, and equipment.



STRENGTH

MAG 1 is bolstered by FMX Technology, which provides a very strong oil film that shields engines, parts and machinery at multiple points of contact and fights friction between rotating parts.



DURABILITY

MAG 1 protects as well on the last day as it does on the first. Even under the most extreme operating conditions, it retains viscosity and withstands heat and shearing.



EXTREME CONDITIONS

With a powerful, molecular-reinforced formulation, MAG 1 reduces engine and equipment stresses from high heat, cold starts, heavy loads, steep inclines, dusty roads, power density, and more.

WELL-EARNED REPUTATION

MAG 1 is the brand to trust no matter what kind of vehicle you drive or equipment you operate. Manufactured in the U.S.A. by one of the world's leading suppliers of lubricants and automotive chemicals, its solid reputation and record of performance over many years is a testament to the consistent, dependable quality of every MAG 1 product.



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