



**MAG 1**

*Evolutionary Performance™*

**PASSENGER CAR  
MOTOR OILS**



Evolutionary Performance™

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

**FULL SYNTHETIC**

OEMs continue to evolve engine designs that demand more from motor oil. One brand has evolved right alongside – MAG 1®. MAG 1 with FMX® Technology provides unsurpassed protection and performance in every viscosity. Even our lowest viscosity oils protect better than thick oils of the past. Our advanced oil chemistry actually improves oil properties through time, retaining viscosity, friction and anti-wear benefits.



MAG 1 Full Synthetic Motor Oils are our purest and most advanced formulations. Benefits include:

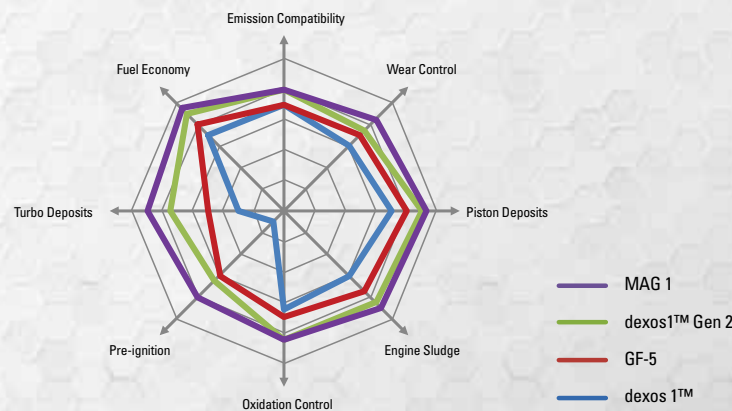
- Engineered to improve fuel mileage and to maximize horsepower and acceleration.
- Longer and better engine protection than conventional oils due to strong and uniform synthetic base oils and advanced molecules that provide a strong film barrier to control friction, resist wear and keep metal surfaces from coming into contact.
- Meets or exceeds API, SN and ILSAC GF-5 requirements
- Created for extreme hot and cold driving conditions: stop and go, frequent short trips, heavy loads and dusty conditions.
- MAG 1 dexos1™ Gen 2 approved motor oils meet or exceed GM dexos1™ specifications for worldwide warranty requirements for all GM automotive gasoline engines currently in use. The oils are fully licensed by GM.

\*MAG 1 Full Synthetic SAE 0W-20 and SAE 5W-30 are dexos1™ Gen 2 approved motor oils.

\*\*Excluding MAG 1 Full Synthetic SAE 10W-30 Motor Oil.



MAG 1 dexos1™ Approved Motor Oils meet or exceed GM dexos1™ specifications for world wide warranty requirements for all GM automotive gasoline engines currently in use. dexos1™ Gen 2 supercedes GM 6094M and GM 4718M.



**PACK SIZES**

|                            | Pack Size  | Product # |
|----------------------------|------------|-----------|
| Full Synthetic SAE 0W-20*  | 6/1 Quart  | 61794     |
|                            | 3/5 Quart  | 65828     |
|                            | 6 Gallon** | 66077     |
|                            | 55 Gallon  | 65830     |
| Full Synthetic SAE 5W-20*  | 330 Gallon | 65832     |
|                            | 6/1 Quart  | 61792     |
|                            | 3/5 Quart  | 64192     |
|                            | 6 Gallon   | 65445     |
| Full Synthetic SAE 5W-30*  | 55 Gallon  | 64101     |
|                            | 330 Gallon | 65474     |
|                            | 6/1 Quart  | 61790     |
|                            | 3/4 Liter  | 67936     |
| Full Synthetic SAE 10W-30* | 3/5 Quart  | 64193     |
|                            | 6 Gallon   | 65446     |
|                            | 55 Gallon  | 64876     |
|                            | 330 Gallon | 65476     |
| Full Synthetic SAE 10W-30* | 6/1 Quart  | 61788     |
|                            | 3/5 Quart  | 64194     |
|                            | 55 Gallon  | 64883     |

**CLAIMS**

|                                     | Full Syn SAE 0W-20 | Full Syn SAE 5W-20 | Full Syn SAE 5W-30 | Full Syn SAE 10W-30 |
|-------------------------------------|--------------------|--------------------|--------------------|---------------------|
| API SN                              | ★                  | ★                  | ★                  | ★                   |
| API SM                              | ●                  | ●                  | ●                  | ●                   |
| API SL                              | ●                  | ●                  | ●                  | ●                   |
| API SH, SG, SF, SE, SD, SC          | ●                  | ●                  | ●                  | ●                   |
| dexos1™ Gen 2                       | ★                  |                    | ★                  |                     |
| Chrysler MS-6395                    | ●                  | ●                  | ●                  | ●                   |
| Chrysler MS-10797                   |                    | ●                  |                    |                     |
| ILSAC GF-5                          | ★                  | ★                  | ★                  | ★                   |
| ILSAC GF-4                          | ●                  | ●                  | ●                  | ●                   |
| Ford WSS M2C946-A, M2C929-A         |                    |                    | ●                  |                     |
| Ford WSS M2C945-A, M2C930-A, M2C153 |                    | ●                  |                    |                     |
| GM 6094M                            | ●                  | ●                  | ●                  | ●                   |
| GM 4718M                            | ●                  | ●                  | ●                  | ●                   |

★ = Approved ● = Meets Requirements

**TYPICAL PHYSICAL PROPERTIES**

| Properties                                     | Test Method        | Full Synthetic SAE 0W-20 | Full Synthetic SAE 5W-20 | Full Synthetic SAE 5W-30 | Full Synthetic SAE 10W-30 |
|--|--------------------|--------------------------|--------------------------|--------------------------|---------------------------|
| Boron, wt. %                                   | ASTM D5185         | 0.023                    | 0.018                    | 0.023                    | 0.018                     |
| Calcium, wt. %                                 | ASTM D5185         | 0.135                    | 0.19                     | 0.135                    | 0.19                      |
| Cold Cranking Simulator at (°C), cP            | ASTM D5293         | 5800 (-35)               | 4099 (-30)               | 4400 (-30)               | 3884 (-25)                |
| Color  | ASTM D1500         | 3                        | 3                        | 3                        | 3                         |
| Gravity, °API                                  | ASTM D287          | 35.66                    | 34.58                    | 34.93                    | 33.86                     |
| High Temperature Foaming, static foam          | ASTM D6082 (Opt A) | 20/0                     | 10/0                     | 15/0                     | 20/0                      |
| High Temperature / High Shear Vis at 100°C, cP | ASTM D6616         | 5.76                     | 6.14                     | 6.9                      | 7.17                      |
| High Temperature / High Shear Vis at 150°C, cP | ASTM D5481         | 2.7                      | 2.67                     | 3.2                      | 3.04                      |
| Molybdenum, wt. %                              | ASTM D5185         | 0.0079                   | 0.004                    | 0.0079                   | 0.004                     |
| Nitrogen, wt. %                                | ASTM D4629         | 0.104                    | 0.084                    | 0.104                    | 0.084                     |
| Noack Volatility, % loss                       | ASTM D6375         | 13                       | 11.7                     | 12                       | 8.2                       |
| Phosphorus, wt. %                              | ASTM D5185         | 0.076                    | 0.077                    | 0.076                    | 0.077                     |
| Pour Point °C (°F)                             | ASTM D5950         | -45°C (-49°F)            | -45°C (-49°F)            | -45°C (-49°F)            | -42°C (-44°F)             |
| Pumping Viscosity at (°C), cP                  | ASTM D4684         | 21,000 (-35)             | 12,500 (-35)             | 15,000 (-35)             | 13,900 (-30)              |
| Shear Stability                                | ASTM D6278         | 7.5                      | 7.8                      | 9.4                      | 8.99                      |
| Specific Gravity @ 60°F (15.6°C)               | ASTM D4052         | 0.8465                   | 0.852                    | 0.8502                   | 0.8557                    |
| Sulfated Ash, wt. %                            | ASTM D874          | 0.9                      | 0.92                     | 0.9                      | 0.92                      |
| Sulfur, wt. %                                  | ASTM D4951         | 0.3                      | 0.3                      | 0.3                      | 0.3                       |
| TBN, mgKOH/g                                   | ASTM D2896         | 7.9                      | 7.0                      | 7.9                      | 7.0                       |
| Viscosity @ 40°C cSt                           | ASTM D445          | 44.59                    | 49.86                    | 62.09                    | 61.71                     |
| Viscosity @ 100°C cSt                          | ASTM D445          | 8.475                    | 8.918                    | 10.91                    | 10.14                     |
| Viscosity Index                                | ASTM D2270         | 170                      | 160                      | 169                      | 151                       |
| Zinc, wt. %                                    | ASTM D5185         | 0.085                    | 0.085                    | 0.085                    | 0.085                     |

\*Available in Bulk \*\*Enviro Box®



Evolutionary Performance™

**FMX** TECHNOLOGY **FRICION MANAGEMENT FOR XTREME PROTECTION**

**FULL SYNTHETIC**  
EUROPEAN FORMULA



MAG 1® Full Synthetic European Motor Oil is specially formulated for gasoline and diesel-fueled European cars, including those with turbocharged engines. It is made from 100% pure synthetic base oil and our most advanced additive technology, so it provides our best, longest-lasting engine protection, fuel efficiency, strength, and cleanliness.

MAG 1 Full Synthetic European Motor Oil is our purest formulation and provides outstanding fuel economy. It delivers unsurpassed protection and performance, including the following benefits:

- Engineered to improve fuel mileage and to maximize horsepower and acceleration, especially in higher rpm and turbocharged engines.
- Created for extreme hot and cold driving conditions: stop and go, frequent short trips, heavy loads and dusty conditions.
- Longer and better engine protection than conventional oils due to strong and uniform synthetic base oils and advanced molecules that provide a strong film barrier to control friction, resist wear and keep metal surfaces from coming into contact.

\*MAG 1 Full Synthetic European 5W-40 A3/B4 Motor Oil is designed to meet or exceed requirements set by many major European automakers - Audi, BMW, Mercedes-Benz, Opel, Porsche, Renault, Skoda, SEAT, Volkswagen.

**PACK SIZES**

|  | Pack Size  | Product # |
|--|------------|-----------|
| Full Synthetic European SAE 0W-40 A3/B4*     | 6/1 Quart  | 65661     |
|  | 6/1 Quart  | 62836     |
|  | 3/4 Liter  | 62838     |
| Full Synthetic European SAE 5W-40 A3/B4*     | 55 Gallon  | 64880     |
|  | 330 Gallon | 67696     |
|  | 6/1 Quart  | 63278     |
| Full Synthetic European SAE 5W-30 C3*        | 3/4 Liter  | 63280     |
|  | 55 Gallon  | 63282     |
|  | 330 Gallon | 68175     |
| Full Synthetic European SAE 5W-30 C3 VW 507* | 6/1 Quart  | 66540     |
|  | 3/4 Liter  | 66542     |
|  | 55 Gallon  | 66544     |

**CLAIMS**

|                            | Full Syn European SAE 0W-40 A3/B4 | Full Syn European SAE 5W-40 A3/B4 | Full Syn European SAE 5W-30 C3 | Full Syn European SAE 5W-30 C3 VW 507 |
|----------------------------|-----------------------------------|-----------------------------------|--------------------------------|---------------------------------------|
| API SN                     | ★                                 | ★                                 | ★                              | ★                                     |
| API SM                     | ●                                 | ●                                 | ●                              |                                       |
| API SH, SG, SF, SE, SD, SC | ●                                 | ●                                 | ●                              |                                       |
| API CF                     |                                   |                                   | ○                              |                                       |
| ACEA C3                    |                                   |                                   | ●                              | ●                                     |
| ACEA A3/B3 and A3/B4       | ●                                 | ●                                 | ○                              |                                       |
| MB 226.5                   |                                   |                                   | ○                              |                                       |
| MB229.3/229.5              | ●                                 | ●                                 |                                |                                       |
| MB 229.31                  |                                   |                                   | ●                              |                                       |
| MB 229.51                  |                                   |                                   | ●                              | ●                                     |
| BMW LL-01                  | ●                                 | ●                                 |                                |                                       |
| BMW LL-04                  |                                   |                                   | ●                              | ●                                     |
| VW 501 01                  |                                   | ●                                 |                                |                                       |
| VW 502 00/505 00           | ●                                 | ●                                 | ●                              | ●                                     |
| VW 505 01                  |                                   |                                   | ●                              |                                       |
| VW 504 00/507 00           |                                   |                                   |                                | ●                                     |
| OPEL GM-LL-B-025           | ●                                 | ●                                 |                                |                                       |
| Renault 0710/0700          | ●                                 | ●                                 | ●                              |                                       |
| Porsche A40                | ●                                 | ●                                 | ●                              | ●                                     |

★ = Approved ● = Meets Requirements ○ = Suitable for Use

**TYPICAL PHYSICAL PROPERTIES**

| Properties                                     | Test Method | Full Synthetic European SAE 0W-40 A3/B4 | Full Synthetic European SAE 5W-40 A3/B4 | Full Synthetic European SAE 5W-30 C3 | Full Synthetic European SAE 5W-30 C3 VW 507 |
|--|-------------|---|---|--------------------------------------|---|
| Boron, wt. %                                   | ASTM D5185  | 0.007                                   | 0.007                                   | 0.007                                | 0.0   |
| Calcium, wt. %                                 | ASTM D5185  | 0.26                                    | 0.26                                    | 0.1836                               | 0.1625                                      |
| Cold Cranking Simulator at (°C), cP            | ASTM D5293  | 5815 (-35)                              | 6083 (-30)                              | 5627 (-30)                           | 6028 (-30)                                  |
| Color  | ASTM D1500  | 2                                       | 2                                       | 2                                    | 3   |
| Gravity, °API                                  | ASTM D287   | 35.42                                   | 33.98                                   | 34.64                                | 34.29                                       |
| High Temperature / High Shear Vis at 150°C, cP | ASTM D5481  | 3.7                                     | 3.7                                     | 3.56                                 | 3.58  |
| Nitrogen, wt. %                                | ASTM D4629  | 0.089                                   | 0.089                                   | 0.095                                | 0.1120                                      |
| Noack Volatility, % loss                       | ASTM D6375  | 9                                       | 10                                      | 10                                   | 9.6   |
| Phosphorus, wt. %                              | ASTM D5185  | 0.092                                   | 0.092                                   | 0.08                                 | 0.0762                                      |
| Pour Point °C (°F)                             | ASTM D5950  | -45°C (-49°F)                           | -45°C (-49°F)                           | -45°C (-49°F)                        | -45°C (-49°F)                               |
| Pumping Viscosity at (°C), cP                  | ASTM D4684  | 24,600 (-40)                            | 28,400 (-35)                            | 22,234 (-35)                         | 22,000 (-35)                                |
| Specific Gravity @ 60°F (15.6°C)               | ASTM D4052  | 0.8477                                  | 0.8551                                  | 0.8517                               | 0.8535                                      |
| Sulfur, wt. %                                  | ASTM D4951  | 0.19                                    | 0.19                                    | 0.2                                  | 0.2194                                      |
| TBN, mgKOH/g                                   | ASTM D2896  | 10.3                                    | 9.8                                     | 8.0                                  | 7.0   |
| Viscosity @ 100°C cSt                          | ASTM D445   | 12.8                                    | 13.18                                   | 12.02                                | 12.36                                       |
| Viscosity @ 40°C cSt                           | ASTM D445   | 75.09                                   | 77.27                                   | 70.01                                | 70.4  |
| Viscosity Index                                | ASTM D2270  | 172                                     | 173                                     | 170                                  | 172   |
| Zinc, wt. %                                    | ASTM D5185  | 0.102                                   | 0.102                                   | 0.088                                | 0.0825                                      |

\*Available in Bulk



Evolutionary Performance™

**FMX** TECHNOLOGY **FRICION MANAGEMENT FOR XTREME PROTECTION**

**HIGH MILEAGE**  
SYNTHETIC BLEND



MAG 1® High Mileage Synthetic Blend Motor Oil is specially formulated to extend engine life for vehicles that have already exceeded 75,000 miles. It conditions seals, helps to prevent leaks, features superior oxidation stability, and provides extra protection against sludge, deposit buildup, and high temperatures. Contains superior additives and properties that outperform conventional motor oils.

Delivers the following benefits:

- Minimizes oil consumption and maximizes power output.
- Meets and exceeds U.S. and import car and light truck warranty requirements for all automotive gasoline engines currently in use.
- Resists thermal breakdown and decreases deposit formation for longer, better engine protection than conventional oils.
- Provides a strong film barrier to control friction, resist wear and keep metal surfaces from coming into contact.

**PACK SIZES**

|  | Pack Size  | Product # |
|--|------------|-----------|
| High Mileage Synthetic Blend SAE 5W-20*  | 6/1 Quart  | 64829     |
|  | 3/5 Quart  | 66734     |
|  | 6 Gallon** | 65452     |
|  | 55 Gallon  | 64831     |
| High Mileage Synthetic Blend SAE 5W-30*  | 6/1 Quart  | 64835     |
|  | 3/5 Quart  | 66732     |
|  | 6 Gallon** | 65451     |
|  | 55 Gallon  | 64837     |
|  | 330 Gallon | 67694     |
| High Mileage Synthetic Blend SAE 10W-30* | 6/1 Quart  | 64839     |
|  | 3/5 Quart  | 67180     |
|  | 6 Gallon** | 65665     |
|  | 55 Gallon  | 62910     |
| High Mileage Synthetic Blend SAE 10W-40* | 6/1 Quart  | 64841     |
|  | 3/4 Liter  | 64843     |
|  | 55 Gallon  | 00618     |

**CLAIMS**

|                                     | High Mileage Synthetic Blend SAE 5W-20 | High Mileage Synthetic Blend SAE 5W-30 | High Mileage Synthetic Blend SAE 10W-30 | High Mileage Synthetic Blend SAE 10W-40 |
|-------------------------------------|--|--|---|---|
| API SN                              | ★                                      | ★                                      | ★                                       | ★                                       |
| API SM                              | ●                                      | ●                                      | ●                                       | ●                                       |
| API SL                              | ●                                      | ●                                      | ●                                       | ●                                       |
| API SH, SG, SF, SE, SD, SC          | ●                                      | ●                                      | ●                                       | ●                                       |
| Chrysler MS-6395                    | ●                                      | ●                                      | ●                                       |   |
| Chrysler MS-10797                   | ●                                      |  |   |   |
| ILSAC GF-5                          | ★                                      | ★                                      | ★                                       |   |
| ILSAC GF-4                          | ●                                      | ●                                      | ●                                       |   |
| Ford WSS M2C945-A, M2C930-A, M2C153 | ●                                      |  |   |   |
| Ford WSS M2C946-A, M2C929-A         |  | ●                                      |   |   |
| GM 6094M                            | ●                                      | ●                                      | ●                                       |   |

★ = Approved ● = Meets Requirements

**TYPICAL PHYSICAL PROPERTIES**

| Properties                                     | Test Method        | High Mileage Synthetic Blend SAE 5W-20 | High Mileage Synthetic Blend SAE 5W-30 | High Mileage Synthetic Blend SAE 10W-30 | High Mileage Synthetic Blend SAE 10W-40 |
|--|--------------------|--|--|---|---|
| Boron, wt. %                                   | ASTM D5185         | 0.018                                  | 0.018                                  | 0.018                                   | 0.023                                   |
| Calcium, wt. %                                 | ASTM D5185         | 0.19                                   | 0.19                                   | 0.19                                    | 0.214                                   |
| Cold Cranking Simulator at (°C), cP            | ASTM D5293         | 6305 (-30)                             | 5704 (-30)                             | 5050 (-25)                              | 6032 (-25)                              |
| Color  | ASTM D1500         | 3                                      | 3                                      | 3                                       | 3                                       |
| Gravity, °API                                  | ASTM D287          | 33.3                                   | 33.44                                  | 31.42                                   | 31.14                                   |
| High Temperature Foaming, static foam          | ASTM D6082 (Opt A) | 30/0                                   | 30/0                                   | 20/0                                    | 0/0                                     |
| High Temperature / High Shear Vis at 100°C, cP | ASTM D6616         | 6.01                                   | 6.94                                   | 7.09                                    | -                                       |
| High Temperature / High Shear Vis at 150°C, cP | ASTM D5481         | 2.72                                   | 3.14                                   | 2.97                                    | 4.09                                    |
| Molybdenum, wt. %                              | ASTM D5185         | 0.004                                  | 0.004                                  | 0.004                                   | 0.0079                                  |
| Nitrogen, wt. %                                | ASTM D4629         | 0.084                                  | 0.084                                  | 0.084                                   | 0.102                                   |
| Noack Volatility, % loss                       | ASTM D6375         | 14.8                                   | 14.2                                   | 14.4                                    | 11.7                                    |
| Phosphorus, wt. %                              | ASTM D5185         | 0.077                                  | 0.077                                  | 0.077                                   | 0.079                                   |
| Pour Point °C (°F)                             | ASTM D5950         | -45°C (-49°F)                          | -45°C (-49°F)                          | -42°C (-44°F)                           | -42°C (-44°F)                           |
| Pumping Viscosity at (°C), cP                  | ASTM D4684         | 23,600 (-35)                           | 28,400 (-35)                           | 15,400 (-30)                            | 41,278 (-30)                            |
| Shear Stability                                | ASTM D6278         | 7.31                                   | 8.5                                    | 8.58                                    | 12.38                                   |
| Specific Gravity @ 60°F (15.6°C)               | ASTM D4052         | 0.8586                                 | 0.8579                                 | 0.8685                                  | 0.8715                                  |
| Sulfated Ash, wt. %                            | ASTM D874          | 0.92                                   | 0.92                                   | 0.92                                    | 0.92                                    |
| Sulfur, wt. %                                  | ASTM D4951         | 0.3                                    | 0.3                                    | 0.3                                     | 0.347                                   |
| TBN, mgKOH/g                                   | ASTM D2896         | 7.0                                    | 7.0                                    | 7.0                                     | 7.9                                     |
| Viscosity @ 40°C cSt                           | ASTM D445          | 51.33                                  | 63.51                                  | 65.28                                   | 89.87                                   |
| Viscosity @ 100°C cSt                          | ASTM D445          | 8.738                                  | 10.78                                  | 10.17                                   | 13.07                                   |
| Viscosity Index                                | ASTM D2270         | 149                                    | 161                                    | 142                                     | 145                                     |
| Zinc, wt. %                                    | ASTM D5185         | 0.085                                  | 0.085                                  | 0.085                                   | 0.085                                   |

\*Available in Bulk \*\*Enviro Box®



Evolutionary Performance™

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

**SYNTHETIC BLEND**



Synthetic Blend provides extra protection and peace of mind, compared with conventional oil. It provides unsurpassed protection, even in our lightest viscosities. Protects better than the thick oils of the past.

- MAG 1® resists thermal breakdown and reduces deposit formation for longer, better engine protection than conventional oils.
- Additives work to keep engines clean.
- Provides a strong film barrier to control friction, resist wear and keep metal surfaces from coming into contact.
- Meets or exceeds U.S. and import car and light truck warranty requirements for most automotive gasoline engines currently in use.

| PACK SIZES                         | Pack Size  | Product # | CLAIMS                    |                           |
|------------------------------------|------------|-----------|---------------------------|---------------------------|
|                                    |            |           | Synthetic Blend SAE 5W-20 | Synthetic Blend SAE 5W-30 |
| Synthetic Blend SAE 5W-20*         | 6/1 Quart  | 62943     | ★                         | ★                         |
|                                    | 3/5 Quart  | 62941     | ●                         | ●                         |
|                                    | 6 Gallon** | 65666     | ●                         | ●                         |
|                                    | 55 Gallon  | 62909     | ●                         | ●                         |
|                                    | 330 Gallon | 65579     | ●                         | ●                         |
| Synthetic Blend SAE 5W-30*         | 6/1 Quart  | 61652     | ●                         | ●                         |
|                                    | 3/5 Quart  | 62937     | ●                         | ●                         |
|                                    | 6 Gallon** | 65667     | ★                         | ★                         |
|                                    | 55 Gallon  | 60181     | ●                         | ●                         |
| Synthetic Blend SAE 20W-50* Racing | 330 Gallon | 65580     | ●                         | ●                         |
|                                    | 6/1 Quart  | 62888     | ●                         | ●                         |

★ = Approved ● = Meets Requirements

| TYPICAL PHYSICAL PROPERTIES                    |                    |                           |                           |                                   |
|--|--------------------|---------------------------|---------------------------|-----------------------------------|
| Properties                                     | Test Method        | Synthetic Blend SAE 5W-20 | Synthetic Blend SAE 5W-30 | Synthetic Blend SAE 20W-50 Racing |
| Boron, wt. %                                   | ASTM D5185         | 0.018                     | 0.018                     | .0318                             |
| Calcium, wt. %                                 | ASTM D5185         | 0.19                      | 0.19                      | 0.297                             |
| Cold Cranking Simulator at (°C), cP            | ASTM D5293         | 6305 (-30)                | 6119 (-30)                | 6255 (-15)                        |
| Color  | ASTM D1500         | 3                         | 3                         | 4.5                               |
| Gravity, °API                                  | ASTM D287          | 32.37                     | 33.32                     | 30.36                             |
| High Temperature Foaming, static foam          | ASTM D6082 (Opt A) | 30/0                      | 20/0                      | 0/0                               |
| High Temperature / High Shear Vis at 100°C, cP | ASTM D6616         | 6.01                      | 6.94                      | 0/0                               |
| High Temperature / High Shear Vis at 150°C, cP | ASTM D5481         | 2.72                      | 3.14                      | 5.63                              |
| Molybdenum, wt. %                              | ASTM D5185         | 0.004                     | 0.004                     | 0.0114                            |
| Nitrogen, wt. %                                | ASTM D4629         | 0.084                     | 0.084                     | 0.10                              |
| Noack Volatility, % loss                       | ASTM D6375         | 14.8                      | 14.2                      | 5.1                               |
| Phosphorus, wt. %                              | ASTM D5185         | 0.077                     | 0.077                     | 0.11                              |
| Pour Point °C (°F)                             | ASTM D5950         | -45°C (-49°F)             | -45°C (-49°F)             | -33°C (-27°F)                     |
| Pumping Viscosity at (°C), cP                  | ASTM D4684         | 23,600 (-35)              | 28,400 (-35)              | 40,000 (-15)                      |
| Shear Stability                                | ASTM D6278         | 7.31                      | 8.5                       | 15.1                              |
| Specific Gravity @ 60°F (15.6°C)               | ASTM D4052         | 0.8635                    | 0.8585                    | 0.8742                            |
| Sulfated Ash, wt. %                            | ASTM D874          | 0.92                      | 0.92                      | 1.3                               |
| Sulfur, wt. %                                  | ASTM D4951         | 0.3                       | 0.3                       | 0.44                              |
| TBN, mgKOH/g                                   | ASTM D2896         | 7.0                       | 7.0                       | 10                                |
| Viscosity @ 40°C cSt                           | ASTM D445          | 51.33                     | 66.92                     | 167.3                             |
| Viscosity @ 100°C cSt                          | ASTM D445          | 8.738                     | 11.11                     | 20.1                              |
| Viscosity Index                                | ASTM D2270         | 149                       | 159                       | 139                               |
| Zinc, wt. %                                    | ASTM D5185         | 0.085                     | 0.085                     | .126                              |

\*Available in Bulk \*\*Enviro Box®



Evolutionary Performance™

**FMX** TECHNOLOGY **FRICION MANAGEMENT FOR XTREME PROTECTION**

CONVENTIONAL & MONOGRADE



MAG 1® Conventional & Monograde Motor Oil are formulated for older vehicles and/or high-temperature climates, if thicker oil is preferred. It also delivers the following benefits:

- Reduced friction for excellent protection against engine wear.
- High resistance to viscosity and thermal breakdown.
- Resists thermal breakdown and reduces deposit formation for longer, better engine protection than conventional oils.
- Additives work to keep engines clean.
- Provides a strong film barrier to control friction, resist wear and keep metal surfaces from coming into contact.

| PACK SIZES               | Pack Size                | Product # |
|--------------------------|--------------------------|-----------|
|                          | Conventional SAE 10W-30* | 6/1 Quart |
| 3/5 Quart                |                          | 62939     |
| 2.5 Gallon               |                          | 00502     |
| 5 Gallon                 |                          | 00504     |
| 55 Gallon                |                          | 62848     |
| Conventional SAE 10W-40* | 6/1 Quart                | 61650     |
|                          | 3/4 Liter                | 63579     |
|                          | 55 Gallon                | 62849     |
| Conventional SAE 20W-50* | 6/1 Quart                | 61654     |
|                          | 3/4 Liter                | 63581     |
|                          | 55 Gallon                | 62851     |
| Monograde SAE 30*        | 6/1 Quart                | 61646     |
|                          | 2.5 Gallon               | 00402     |
|                          | 55 Gallon                | 64877     |
| Monograde SAE 40*        | 6/1 Quart                | 63200     |

| CLAIMS                     | Conventional SAE 10W-30 | Conventional SAE 10W-40 | Conventional SAE 20W-50 | Monograde SAE 30 | Monograde SAE 40w |
|----------------------------|-------------------------|-------------------------|-------------------------|------------------|-------------------|
|                            | API SN                  | ★                       | ★                       | ★                | ★                 |
| API SM                     | ●                       | ●                       | ●                       | ●                | ●                 |
| API SL                     | ●                       | ●                       | ●                       | ●                | ●                 |
| API SH, SG, SF, SE, SD, SC | ●                       | ●                       | ●                       | ●                | ●                 |
| Chrysler MS-6395           | ●                       |                         |                         |                  |                   |
| ILSAC GF-5                 | ★                       |                         |                         |                  |                   |
| ILSAC GF-4                 | ●                       |                         |                         |                  |                   |
| GM 6094M                   | ●                       |                         |                         |                  |                   |

★ = Approved ● = Meets Requirements

| TYPICAL PHYSICAL PROPERTIES                  |                    |                         |                         |                         |                  |                  |
|--|--------------------|-------------------------|-------------------------|-------------------------|------------------|------------------|
| Properties                                   | Test Method        | Conventional SAE 10W-30 | Conventional SAE 10W-40 | Conventional SAE 20W-50 | Monograde SAE 30 | Monograde SAE 40 |
| Boron, wt. %                                 | ASTM D5185         | 0.018                   | 0.018                   | 0.018                   | 0.018            | 0.018            |
| Calcium, wt. %                               | ASTM D5185         | 0.19                    | 0.19                    | 0.19                    | 0.19             | 0.19             |
| Cold Cranking Simulator at (°C), cP          | ASTM D5293         | 4000 (-25)              | 4750 (-25)              | 7014 (-15)              | -                | -                |
| Color  | ASTM D1500         | 3                       | 3                       | 3                       | 3                | 3                |
| Gravity, °API                                | ASTM D287          | 32.37                   | 31.99                   | 29.63                   | 29.85            | 28.77            |
| High Temperature Foaming, static foam        | ASTM D6082 (Opt A) | 20/0                    | 20/0                    | 10/0                    | 0/0              | 0/0              |
| High Temperature/High Shear Vis at 100°C, cP | ASTM D6616         | 7.04                    | -                       | -                       | -                | -                |
| High Temperature/High Shear Vis at 150°C, cP | ASTM D5481         | 3.08                    | 4.02                    | 4.85                    | 3.38             | 4.02             |
| Molybdenum, wt. %                            | ASTM D5185         | 0.004                   | 0.004                   | 0.004                   | 0.004            | 0.004            |
| Nitrogen, wt. %                              | ASTM D4629         | 0.084                   | 0.084                   | 0.084                   | 0.084            | 0.084            |
| Noack Volatility, % loss                     | ASTM D6375         | 14.5                    | 11.7                    | 5.1                     | 6.1              | 3.7              |
| Phosphorus, wt. %                            | ASTM D5185         | 0.077                   | 0.077                   | 0.077                   | 0.077            | 0.077            |
| Pour Point °C (°F)                           | ASTM D5950         | -42°C (-44°F)           | -42°C (-44°F)           | -33°C (-27°F)           | -33°C (-27°F)    | -33°C (-27°F)    |
| Pumping Viscosity at (°C), cP                | ASTM D4684         | 15,900 (-30)            | 33,800 (-30)            | 21,900 (-15)            | -                | -                |
| Shear Stability                              | ASTM D6278         | 8.54                    | 11.5                    | 15.15                   | -                | -                |
| Specific Gravity @ 60°F (15.6°C)             | ASTM D4052         | 0.8635                  | 0.8655                  | 0.8782                  | 0.877            | 0.8829           |
| Sulfated Ash, wt. %                          | ASTM D874          | 0.92                    | 0.92                    | 0.92                    | 0.92             | 0.92             |
| Sulfur, wt. %                                | ASTM D4951         | 0.3                     | 0.3                     | 0.3                     | 0.3              | 0.3              |
| TBN, mgKOH/g                                 | ASTM D2896         | 7.0                     | 7.0                     | 7.0                     | 7.0              | 7.0              |
| Viscosity @ 40°C cSt                         | ASTM D445          | 63.85                   | 94.59                   | 169.8                   | 87.96            | 127.1            |
| Viscosity @ 100°C cSt                        | ASTM D445          | 10.35                   | 14.34                   | 19                      | 10.94            | 13.61            |
| Viscosity Index                              | ASTM D2270         | 150                     | 157                     | 127                     | 110              | 103              |
| Zinc, wt. %                                  | ASTM D5185         | 0.085                   | 0.085                   | 0.085                   | 0.085            | 0.085            |

\*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.

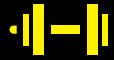
It means, despite lower viscosities, MAG 1 still delivers extraordinary performance, strength and durability, in every grade. Even the thinnest MAG 1 oils and fluids perform better than thicker oils of the past.

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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