

**CITGO PACEMAKER® GAS ENGINE OIL  
1000 SERIES**

Date 08/15

**DESCRIPTION:** CITGO Pacemaker Gas Engine Oil 1000 Series oils are ashless stationary natural gas engine lubricants fortified with an ashless dispersant, corrosion inhibitor, oxidation inhibitor and antiwear additive package. They are available in a single viscosity grade at the midpoint between SAE 30 and SAE 40 grades and an SAE 15W-40 grade.

- QUALITIES:** CITGO Pacemaker Gas Engine Oil 1000 Series Oils provide:
- Use of high viscosity index base stock with low carbon residue minimizes carbon and varnish formation and maximizes oil oxidation life
  - Contain no bright stock
  - Ashless formulation provides maximum protection against spark plug fouling
  - Ashless dispersant system provides excellent cleaning action which keeps piston rings free in their grooves, thereby extending overhaul periods and engine life
  - Excellent resistance to oil oxidation
  - Superior corrosion protection to vital engine and compressor components
  - Use in compressor cylinder lubrication
  - Superior protection against ring belt and port deposits in 2-cycle engine designs

**APPLICATIONS:** CITGO Pacemaker Gas Engine Oil 1000 Series oils are applicable for use in a wide variety of 2- and 4-cycle gas engine designs. They meet the performance requirements for Dresser-Rand Categories I and II, as well as requirements for other gas engine manufacturers requiring ashless type engine oils.

CITGO Pacemaker Gas Engine Oil 1035LP is specially formulated to provide enhanced low temperature properties. This low pour point product provides excellent cold temperature flow properties and is well suited where low temperature fluidity is needed but a monograde viscosity is preferred.

The CITGO Pacemaker Gas Engine Oil 1000 Series has a history of outstanding performance in gas processing, gas transmission and other applications calling for a high quality ashless natural gas engine oil.

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Date 08/15 - (Continued)

**TYPICAL PROPERTIES:**

**CITGO PACEMAKER® GAS ENGINE OIL 1000 SERIES**

| <b>Product Name</b>                        | <b>1015</b>   | <b>1035</b>  | <b>1035LP</b> |
|--|---------------|--------------|---------------|
| <b>SAE Grade</b>                           | <b>15W-40</b> | <b>30/40</b> | <b>30/40</b>  |
| Material Code                              | 632210001     | 632032001    | 632031001     |
| Gravity, ASTM D 4052, °API                 | 31.0          | 29.8         | 29.2          |
| Pounds Per Gallon                          | 7.25          | 7.31         | 7.33          |
| Flash Point, COC, ASTM D 92, °F (°C), Min. | 471 (244)     | 543 (284)    | 460 (238)     |
| Fire Point, COC, ASTM D 92, °F (°C), Min.  | 514 (268)     | 563 (295)    | 563 (295)     |
| Viscosity, ASTM D 445, cSt at 40°C         | 99.9          | 121.2        | 114.5         |
| cSt at 100°C                               | 13.8          | 12.9         | 12.6          |
| Viscosity Index, ASTM D 2270               | 139           | 99           | 102           |
| Pour Point, ASTM D 97, °F (°C)             | -22 (-30)     | +10 (-12)    | -27 (-33)     |
| Color, ASTM D 1500                         | L2.0          | L2.0         | L1.5          |
| Carbon Residue, % (base stock)             | 0.02          | 0.02         | 0.02          |
| Total Acid No., ASTM D 664, mg KOH/g       | 0.51          | 0.43         | 0.2           |
| Total Base No., ASTM D 2896, mg KOH/g      | 1.0           | 1.0          | 1.0           |
| Phosphorus, ppm                            | 400           | 400          | 400           |
| Antiwear                                   | Yes           | Yes          | Yes           |
| Corrosion Inhibitor                        | Yes           | Yes          | Yes           |
| Dispersant                                 | Yes           | Yes          | Yes           |
| Foam Suppressor                            | Yes           | Yes          | Yes           |
| Oxidation Inhibitor                        | Yes           | Yes          | Yes           |

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