

CITGO PACEMAKER® GAS ENGINE OIL
1700 SERIES

Date 10/13

DESCRIPTION: CITGO Pacemaker Gas Engine Oil 1700 Series oils are superior low ash, low phosphorus gas engine oils with a “state-of-the-art” balanced advanced additive package to meet API CD quality performance and non-selective catalytic converter requirements. These new generation oils deliver a superior level of cleanliness and excellent wear protection with a low ash formula that complies with manufacturers’ warranties.

Formulated with the latest generation additives and highest quality Group II base stocks available, CITGO Pacemaker Gas Engine Oil 1700 Series oils offer outstanding performance.

In CITGO field testing, the 1700 series oils have shown superior protection against nitration and oxidation, plus resistance to viscosity increase for longer drain intervals.

- QUALITIES:**
- Contain special dispersants and detergents to insure a cleaner, longer running engine.
 - Control deposits and minimize wear of pistons, rings, and liners.
 - Retain TBN to neutralize combustion acids from sour gas.
 - Contain specialized antioxidant/base oil combination effectively inhibits oxidation and nitration in severe service.
 - Control sludge that thickens the oil, plugs filters and causes excessive foaming.
 - Minimize valve recession to provide longer head life.

APPLICATIONS: CITGO Pacemaker Gas Engine Oil 1700 Series oils are low ash oils suitable for a wide range of engines operating on virtually any variation of natural or synthetic gas, gas from digester or landfill sources or fuels containing low levels of sulfur and chlorofluorocarbons (CFC). **Note:** In high CFC/sour gas applications, an oil with a higher base reserve may be required.

These oils are recommended for high and medium speed 4-cycle engines manufactured by Caterpillar, Waukesha, Superior, Cooper-Bessemer, Cummins, Dresser-Rand (Categories I, II and III), as well as low-speed engines manufactured by Cooper Bessemer and Worthington C4-Cycle).

CITGO Pacemaker Gas Engine Oil 1740LP is a specially formulated SAE 40 grade product that exhibits superior low temperature properties, compared with other monograde oils. This low pour product is particularly well suited for applications where improved low temperature fluidity is needed, but a monograde oil is recommended by the engine manufacturer.

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| CUSTOMER BENEFITS: | • Cleaner pistons | • Catalyst compatible |
| | • Minimum oil viscosity increase | • Clean crankcases and top decks |
| | • Low wear | • Reduced valve recession |
| | • Improved TBN retention | |

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Date 10/13 - (Continued)

TYPICAL PROPERTIES:

CITGO PACEMAKER® GAS ENGINE OIL 1700 SERIES

Product Name	1715	1730	1740	1740 LP
SAE Grade	15W-40	30	40	40
Material Code	632075001	632073001	632074001	632076001
Gravity, ASTM D 4052, °API	30.4	29.6	29.9	29.6
Pounds Per Gallon	7.28	7.32	7.30	7.32
Flash Point, COC, ASTM D 92, °F (°C)	446 (230)	466 (241)	473 (245)	480 (249)
Viscosity, ASTM D 445, cSt at 40°C	102.7	92	128.8	130.4
cSt at 100°C	13.7	11.0	13.6	13.7
Viscosity Index, ASTM D 2270	133	104	101	101
Pour Point, ASTM D 97, °F (°C)	-22 (-30)	-16 (-27)	+10 (-12)	-26 (-33)
Color, ASTM D 1500	L6.0	L5.0	L5.0	L5.0
Carbon Residue, % (base stock)	0.02	0.02	0.02	0.02
Sulfated Ash, ASTM D 874, m%	0.45	0.45	0.45	0.45
Total Base No., ASTM D 2896, mg KOH/g	5.0	5.0	5.0	5.0
Total Acid No., ASTM D 664, mg KOH/g	0.75	0.66	0.67	0.68
Phosphorous, ppm	280	280	280	280