

# LUBRICANT SOLUTIONS

## FOR THE NATURAL GAS INDUSTRY

Serving the natural gas industry for more than 70 years with specifically formulated products and professional field services.



# CITGO Lubricants for the Natural Gas Industry

CITGO offers a variety of field performance proven lubricants for the wide operational conditions encountered throughout the natural gas industry. These oils are specifically formulated for natural gas fueled engines, compressors operating with various gas compositions, and industrial gas turbines.

## Ashless Engine Oils

**Pacemaker Gas Engine Oil 1000 Series** – Ashless engine oils for two stroke stationary gas engines with detergent/dispersant and scuff resistance properties. Available in SAE 40, SAE 15W-40 and a unique viscosity grade between SAE 30 and SAE 40.

## Low Ash Engine Oils

**Pacemaker Gas Engine Oil 1900XL Series** – New generation premium low ash, low phosphorus, long life engine oil for high output four stroke stationary gas engines. Surpasses performance of previous generation oils in severe duty applications such as engines under high nitration operating conditions. Available in SAE 30, SAE 40 and SAE 15W-40.

**Pacemaker Gas Engine Oil 1600 Series** - Low ash, low phosphorus, extended life engine oil for excellent performance in high output four stroke stationary gas engines. Available in SAE 30, SAE 40 and SAE 15W-40.

**Pacemaker Gas Engine Oil 1400 Series** – Low ash/low phosphorus stationary natural gas engine oils formulated to provide maximum resistance to oxidation and nitration. Available in SAE 30, SAE 40 and SAE 15W-40.

**Pacemaker Gas Engine Oil LFG LA 40** – Low ash, next generation technology engine oil for severe operations found in land fill gas and biogas operations. Provides excellent alkalinity retention and exceptional cleanliness compared to old generation landfill gas engine oils. Available in SAE 40.

## Mid Ash Engine Oils

**Pacemaker Gas Engine Oil 700 Series** – Medium ash oil for four stroke stationary gas engines requiring a higher level of ash content and anti-wear performance such as dual fuel engines and gasoline engines converted to natural gas. Available in SAE 40 and SAE 15W-40.

# CITGO Stationary Natural Gas Engine Oils

Product	2 Stroke Gas Engine Oil	4 Stroke Gas Engine Oil	Formulated for LFG/ Biogas	High Nitration Conditions			High Oxidation Conditions			Extended Oil Life Capability			Catalyst Compatible	Ashless, <0.1%	Low Ash, 0.4-0.6%	Mid Ash, 0.7-0.9%
				Good	Better	Best	Good	Better	Best	Good	Better	Best				
<b>Ashless</b> Pacemaker GEO 1000	•													•		
<b>Low Ash</b> Pacemaker GEO 1900XL		•				•			•			•			•	
Pacemaker GEO 1600		•				•			•			•			•	
Pacemaker GEO 1400		•		•			•				•	•			•	
Pacemaker GEO LFG LA		•	•	•					•			•			•	
<b>Mid Ash</b> Pacemaker GEO 700		•		•					•							•



# Compressor Oils

**CompressorGard PAG Series** – Polyalkylene glycol synthetic compressor lubricants for applications requiring high thermal stability and resistance to hydrocarbon solubility compared to mineral oils and PAOs. Available in ISO 100, 150 and 220.

**CompressorGard PAO Series** – Polyalphaolefin based synthetic compressor lubricants for applications requiring high thermal stability and resistance to hydrocarbon solubility compared to mineral oils. Available in ISO 32, 46, 68, 100 and 150.

**CITGEAR Synthetic HT Series** – Polyalphaolefin based synthetic compressor lubricant with high thermal stability for use in compressors compressing natural gas and other process gasses used in natural gas industry. For compressor applications, ISO 68, 100, 150 and 220 are available.

**CompressorGard SS Series** – Semi-synthetic compressor lubricants for enhanced oxidation stability. Available in ISO 100 and 150.

**CITGEAR Synthetic PAG Series** – Polyalkylene glycol synthetic compressor lubricant for application requiring high thermal stability, high viscosity index providing lubricant film over a wide range of temperature. The lubricant should resist dilution by entrained hydrocarbons. For compressor applications, ISO 100, 150 and 220 are available.

**Pacemaker Oils** – Premium rust and oxidation inhibited mineral oils with excellent demulsibility and anti-foam performance for reciprocating compressor lubrication. Available in ISO 32, 46, 68, 100, 150 and 220.

**CompressorGard XA 200** – Premium long life mineral oils with excellent thermal and hydrolytic stability. Recommended for use in compressors subjected to wellhead gas compression and high pressure sulfur dioxide application. Available with a viscosity of 187 cSt @ 40°C.

**Compressor Oil 35LP and 45LP** – Premium rust and oxidation inhibited mineral compressor oils with excellent demulsibility. Specially formulated for excellent flowability in cold climates. Available with viscosities of 115 cSt and 170 cSt @ 40°C.

**Compressor Oil 7585** – Premium long life mineral compressor oil with excellent protection against oxidation and corrosion for compressors operating in sour, wet, high-pressure natural gas service. Available with a viscosity of 267 cSt @ 40°C.

**Cylinder Oils** – Rust and oxidation inhibited mineral oils with a lubricity agent to enhance compressor cylinder lubrication in wet gas operations. Available in ISO 150, 220, and 680 plus a product with a viscosity of 390 cSt @ 40°C.

## Industrial Gas Turbines

**Pacemaker ST 32** – Premium synthetic oil for stationary industrial gas turbines. Meets Solar ES 9-224W and other gas turbine specifications from manufacturers such as GE, Alstom and Siemens. Available in ISO 32.

**Pacemaker T Series** – Premium long life mineral oils with high levels of rust and oxidation inhibition for steam and industrial gas turbines. Meets Solar ES 9-224W and other gas turbine specifications from manufacturers such as GE, Alstom and Siemens. Available in ISO 32, 46, 68 and 100. Only ISO 32 and 46 meet Solar ES 9-224W.

## CITGO Stationary Natural Gas Compressor Lubricants

Product	Industrial Gas Turbine SOLAR	Synthetic	Compressor Oil	Cylinder Oil	Sweet Gas	Sour Gas	Hydrocarbon Dilution Resistant	Anti-Emulsion Formula / High Moisture Gas	Better Cold Climate Flow
CompressorGard PAG		•	•	•	•	•	•	•	•
CompressorGard PAO		•	•	•	•	•	•	•	•
CITGEAR Synthetic HT		•	•	•	•	•	•	•	•
CompressorGard SS			•	•	•			•	•
CITGEAR Synthetic PAG		•	•	•	•	•	•	•	•
Pacemaker Oils 100, 150, 220			•	•	•			•	
CompressorGard XA200			•	•	•	•			
Compressor Oil 35LP, 45LP			•	•	•			•	•
Compressor Oil 7585			•		•	•		•	
Cylinder Oil 150-5, 220-5				•	•	•		•	
Pacemaker ST-32	•								
Pacemaker T Series	•								



# LubeAlert® Fluid Condition Monitoring Service

Lubricating oils are equipment's lifeblood. Oil condition monitoring, as part of a predictive maintenance program, can help provide early awareness of developing equipment issues. LubeAlert state-of-the-art fluid condition monitoring service provides valuable insight into equipment condition and can help you plan maintenance activities. LubeAlert also helps you comply with EPA RICE NESHAP oil monitoring requirements.

## Features

- Analyses performed and evaluated by dedicated lab technicians at our ISO 17025 certified lab
  - Fast notification of critical conditions
  - Easy web-based access
  - Customizable reporting tools to help trend your equipment sample data
  - LubeAlert simplifies data interpretation with user-friendly features, giving equipment owners quick access and ease of evaluation
- 
- ISO 17025 Certified Laboratory
  - Advanced Laboratory Analysis Equipment
  - Secure web-based report access

## Benefits

- Increases operational efficiency
- Decreases maintenance costs
- Minimizes unexpected downtime
- Optimizes lubricant usable life
- Protects engine warranties
- Supports increased equipment resale value
- Extends equipment life

## Professional Services

CITGO is ready to help solve your lubrication challenges. Experienced sales professionals and engineers are available to provide application consultation, machinery lubrication program assistance, and LubeAlert Fluid Condition Monitoring training. Product deliveries are made by CITGO business partners who know the importance of safe, reliable service.

Watch our LubeAlert video to learn more.

**Questions? Contact us at [lubeshelp@CITGO.com](mailto:lubeshelp@CITGO.com) or call 1-855-820-9561 or 317-218-5100**

**For more information, visit [www.CITGOLubes.com](http://www.CITGOLubes.com) or [www.LubeAlert.com](http://www.LubeAlert.com)**

LubeAlert results are easily accessible on any PC or mobile device.



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