



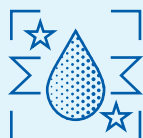
CITGO® Pacemaker® HV Oils

OVERVIEW



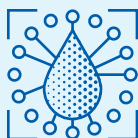
- High-quality petroleum fluids with high boiling range and low vapor pressure, designed especially for use in high-vacuum pump applications where a high-quality mineral oil is required.

FEATURES & BENEFITS



- High initial boiling points and low vapor pressures.
- Produced with special processes and quality assurance procedures to help ensure excellent vacuum pump performance.
- Inherently high oxidation resistance, thermal stability, and low chemical reactivity.
- Special product handling assures very low moisture and volatiles contamination that could adversely affect vapor pressure characteristics.

APPLICATIONS



- CITGO Pacemaker HV-39 is designed for direct-drive vacuum pumps such as Welch, Yellow Jacket, Precision, Leybold-Heraeus, Edwards and Alcatel, where lower viscosity vacuum pump oil is required to prevent heat build-up, provide high ultimate vacuum, and handle high-vacuum pump speeds.
- Pacemaker HV-68 is designed for belt-driven vacuum pumps such as Welch and Cenco.
- Note: Keep containers of CITGO Pacemaker HV Oils tightly sealed and stored in areas that do not have wide variations in temperature.
- Refer to equipment owner's manual for proper lubricant recommendation.

PROPERTIES



Typical Properties for CITGO Pacemaker HV Oils:

Grade	HV-39	HV-68
Material Code	634104001	634105001
Gravity, ASTM D4052, °API	31.7	32.3
Density, lb/gal at 60°F	7.22	7.2
Flash Point, COC, ASTM D92, °F (°C)	435 (224)	465 (241)
Viscosity ASTM D445		
cSt at 40°C	42	67.7
cSt at 100°C	6.4	9.2
Viscosity ASTM D2161		
SUS at 100°F	218	338
SUS at 200°F	47	54
Viscosity Index, ASTM D2270	101	113
Pour Point, ASTM D97, °F (°C), Max.	+5 (-15)	0 (-18)
Color, ASTM D1500	L0.5	L0.5
Neutralization No., ASTM D974, mg KOH/ml	<0.05	<0.05
Copper Corrosion, ASTM D130, 3 hours at 100°C	1A	1A
Carbon Residue, ASTM D4530, wt, %	<0.01	<0.02
Vapor Pressure, ASTM D5190, Torr. @ 100°F (37°C)	0.00025	0.00065

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