

**CITGO FR-40 XD[®] HYDRAULIC FLUID**

Date 8/09

DESCRIPTION: CITGO FR-40 XD Hydraulic Fluid is a premium water-glycol type of fire-resistant fluid designed to provide optimum performance in hydraulic systems. Globally accepted formula is morpholine-free.

QUALITIES: CITGO FR-40 XD Hydraulic Fluid is specially formulated to provide excellent service over a wide range of operating conditions.

CITGO FR-40 XD Hydraulic Fluid contains no nitrites or nitrosamines and is morpholine-free.

This product contains a sufficient amount of water to “snuff out” ignition which could occur if a high pressure leak in a hydraulic system allows the fluid to come in contact with a high-temperature source.

In addition to its excellent fire-resistant properties, this fluid contains additives to impart the necessary lubricity, corrosion protection and overall performance demanded by today’s high-performance hydraulic systems. The addition of an antiwear component in the basic formulation provides extended pump life in systems operating under high pressure or overloaded conditions. The increased performance which CITGO Glycol FR-40 XD Hydraulic Fluid provides results in extended pump service life and reduced downtime along with lower maintenance costs.

Additional bonus features include: high viscosity index, low pour point, excellent heat transfer, antifoam properties and a unique distinguishable color.

CITGO FR-40 XD Hydraulic Fluid meets U.S. Steel Requirement No. 171 for water-glycol fire-resistant fluids. This product has also been tested and approved by Factory Mutual and meets the requirements of Dennison HF-4.

APPLICATIONS: The scope of application for CITGO FR-40 XD Hydraulic Fluid covers most types of hydraulic equipment found in steel mills, die casting and power transmission plants, including Eaton/Vickers, Parker/Dennison, Rexroth and other vane and piston pumps.

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TYPICAL PROPERTIES:**CITGO FR-40 XD® HYDRAULIC FLUID®**

Material Code	648325001
Specific Gravity, ASTM D 129, at 60/60°F	1.059
Density, lb/gal	8.83
Flash Point, COC, ASTM D 92, °F (°C)	None
Viscosity, ASTM D 445, cSt at 40°C	41
ASTM D 2161, SUS at 100°F	205
Viscosity Index, ASTM D 2270	201
Pour Point, ASTM D 97, °F (°C)	-53 (-47)
Color	Pink
pH	9.4
Reserve Alkalinity, ASTM D 1121 ⁽¹⁾	16.0
Four Ball Wear Test, ASTM D 4172, 40 Kg load, Scar Dia., mm ⁽²⁾	0.56
Liquid and Vapor Phase Corrosion of Steel ⁽³⁾	Nil
Hydraulic Pump Test ⁽⁴⁾	Pass
Hydraulic Pump Text, Vickers 35VQ25	Pass
Foam Inhibitor	Yes

- Notes:** (1) Milliliters of 0.1N hydrochloric acid solution required to neutralize 10 milliliters of fluid to a pH of 5.5.
 (2) Test conditions: 1 hour, 130°F, 1800 rpm.
 (3) Two part test: ASTM polished steel specimens; submerged in liquid and suspended above liquid at 170°F for 100 hours.
 (4) ASTM D 7403 procedure. Test conditions: 100 hours, 150°F, 2000 psi.