TEXACO HYDRAULIC SAFETY FLUID

CUSTOMER BENEFITS

Texaco Hydraulic Safety Fluid delivers value through:

- **Fire resistance for improved safety** — Glycol/water mix (approximately 40% water) provides a nonflammable mist or spray so that, should a hydraulic hose rupture, the fluid will not support combustion.
- **Long pump life** — Special antiwear agents protect high pressure pumps from excessive wear, saving on costly repairs.
- **Trouble-free operation** — Effective rust inhibitors provide good rust protection both in the fluid immersed sections of the system and in the vapor spaces where condensed water typically collects, thus avoiding rust debris contamination which can adversely affect system operating efficiency.
- **Good all-temperature performance** — The glycol/water solution enables the fluid to dissipate heat quickly and keep the system temperature in control, thereby avoiding hot spots. The low freezing point reduces the risk of hydraulic fluid freezing in low temperature operation, with subsequent damage to the equipment.

FEATURES

Texaco Hydraulic Safety Fluid is a fire-resistant fluid designed for use in high pressure hydraulic systems where the requirements for fire resistance, pump wear protection and viscosity are satisfied by water-glycol fluids.

Texaco Hydraulic Safety Fluid is a water solution of diethylene glycol containing antiwear agents and rust inhibitors.

APPLICATIONS

Texaco Hydraulic Safety Fluid is recommended for use in:

- Hydraulic systems with gear pumps (up to 2000 psi); vane pumps (up to 2000 psi); axial piston pumps (up to 3000 psi); operating temperature below 65°C
- Injection molding equipment
- Metal die casting equipment
- Hot metal presses
- Welding machines
- Hydraulic pressure guns
- Hydraulic stretchers
- Furnace and oven doors
- Steel mill hydraulic equipment (slag granulators, down coilers in hot strip mills, tipping ladles, continuous casting equipment, etc.)
- Mobile equipment operating in fire risk areas

Texaco Hydraulic Safety Fluid meets or exceeds the following performance standards:

- **Factory Mutual (FM)** requirements for a less hazardous hydraulic fluid in FM insured plants
- **HFC** fluid classification

8 July 2002
A Chevron company brand
IO-2275

SERVICE CONSIDERATIONS

To ensure optimum fire resistance and to minimize wear in the system, the water content must be kept to a nominal 40% by volume.

To maximize fluid life, fluid temperatures should not exceed 50°C(122°F).

It is necessary to maintain the water level within an acceptable limit. Excessive water reduces the fluid's viscosity and its ability to lubricate and to seal internal pump clearances. Insufficient water will render the fluid non-fire resistant as well as raise its viscosity and bulk density, both of which will contribute to pump cavitation.

Optimum system operating temperature is between 38°C (100°F) and 50°C(122°F). Temperatures above 60°C (140°F) should be avoided to prevent water evaporation.

Three acceptable methods may be used to control the water level:

- Indirectly by viscosity determination.
- By refractometer or Brix reading.
- Directly by laboratory methods using the Karl Fischer titration.

The following table can be used with acceptable accuracy to determine the amount of water required to adjust the fluid to acceptable limits. Only distilled or deionized water should be used as makeup. The use of hard tap water, well or spring water should be avoided since the dissolved minerals in these waters will react with the additive system in the fluid to cause fluid haziness and formation of soap-like insoluble material.

Refractive index, Brix number	% water in fluid	Water adjust-ment, gallons per 100 gallons of fluid
42 - 44.5	38.5 - 41.4	None
45	37.7	2
46	36.3	4
47	34.7	7
48	33.3	10
49	31.7	12
50	30.3	14

Fluid with a viscosity below 36.2 cSt at 40°C, or Brix readings below 42, contain excess water and only new Texaco Hydraulic Safety Fluid should be used as makeup. This chart is only valid when the system contains all Texaco Hydraulic Safety Fluid.

TYPICAL TEST DATA

Product Number	*220766*
MSDS Number	*10587*
API Gravity	-1.7
Viscosity, Kinematic cSt at 40°C cSt at 100°C	 41 8.8
Viscosity, Saybolt SUS at 100°F SUS at 210°F	 227 55.7
Viscosity Index	201
Pour Point, °C(°F)	-74(-101)
Water, vol %	40
Brix Number, refractometer reading	43.5

Typical test data are average values only. Minor variations which do not affect product performance are to be expected in normal manufacturing.