COPY A

(head) Know Your Hydraulic Fire Tests

Defining fire resistance in precise terms and numbers is extremely difficult and is best done in terms of expected fire hazards. Assessment of hazards should include consideration of all three components required for combustion --- fuel, oxidizer, and source of ignition --- as well as ways in which the three can combine into a fire. Simulative tests are considered most meaningful in assessing fire resistance. Since exposure conditions and sources of ignition vary widely, multiple tests are usually used in fire resistance evaluation. Test conditions should reflect two basic parameters of fire resistance --- the ability to resist ignition and the ability to carry flame from the source of ignition.

An ounce of prevention can be worth the cost of a plant or even the life of a worker. Hazardous plant operations can be isolated --- fire walls can be built; sprinkler systems can be installed.

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COPY A (Continued)

But the simplest and surest way to protect against hydraulic fluid fires is to stop them before they start --- with fire-resistant Pydraul® fluids. Pydraul will not support combustion.

When emergencies occur, Pydraul eliminates the danger of local fires that can injure workmen, spread to other locations, flash back to the line or hose break, or destroy equipment. By their very chemical nature, Pydraul fluids are fire-resistant --- from start-up through every hour of operation.

Know your hydraulic fire hazards ... know the tests and performance levels which are essential for assessing the fire resistance of any hydraulic fluid. The next several pages are presented for this purpose.

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Performance is evaluated based on the ease of ignition, and, if ignition occurs, the distance the flame is carried from the source of ignition.

COPY C

Performance: This test is not commonly used, but is designed to simulate a line break spraying onto an open source of ignition. Criteria of performance is to observe for flame increase, no change, or decrease in intensity.

COPY D

This test is applicable to water-containing fluids, but can also be used to demonstrate the stability of non-evaporating synthetic and synthetic-base fluids.

COPY E

(See attached memo from L. R. Stark for copy, and attached picture and drawing for art direction.)

COPY F

(See attached memo from L. R. Stark for copy and attached slide and drawing for art direction.)

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COPY G

(head) The Tests Described Here...

Show some of the rigorous methods of determining fire resistance. Some Pydraul fluids show intermittent flashing or burning under severe exposure, but they will not support combustion away from an ignition source. Pydraul is the only fire-resistant hydraulic fluid listed by Underwriters' Laboratories, Inc. for hazardous hydraulic applications.

Pydraul fluids are chemically synthesized from materials which resist burning. Water-based hydraulic fluids depend on the water for fire resistance, but the lubricant components are flammable. Glycol (in water-glycol fluids) and light petroleum oils (in water-oil emulsions) will both burn. Compared with new water-based fluids for fire resistance, Pydraul fluids seldom appear more fire-resistant; but tests of used water-based fluids do not show the same degree of fire resistance --- flammability increases as the water snuffer evaporates from the system.

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Residual, or lasting, fire resistance can be tested through this simple demonstration:

1. Dip blotter paper squares in Pydraul, water-glycol fluid, water-oil emulsion, and plain water.

2. Drain off excess fluid and prop on glass dish for an hour or two.

3. Ignite with a paper book match.

4. Pydraul does not evaporate, does not change. It does not burn.

5. Piece dipped in water burns normally.

6. Water-Glycol and water-oil papers burn brighter, hotter, due to the flammable glycol and oil bases of the two fluids.

This demonstration points out the lasting fire resistance of Pydraul fluids that water and oil types do not have. In any hydraulic operation, a break or a leak can spew fluid over equipment, floors, walls, and ceilings producing an "innocent" puddle. Pydraul fluids will remain fire-resistant under these and all conditions.

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COPY H

(head) Pydraul Offers Fire Resistance And Top Performance

Besides fire resistance, Pydraul fluids offer you performance characteristics that will cut your maintenance time and costs drastically. Pydraul lubricates as well as premium grade antiwear oils. And they eliminate rust and corrosion caused by water-base fluids. Machines operating on Pydraul simply require less maintenance; pumps last longer.

If you need the safety of a fire-resistant fluid and want the economies of less maintenance, you need Pydraul fluids. Pydraul is now being used in these applications, but the danger of hydraulic fires exists in many other applications if ignition sources are near.

Die Casting Machines
Hydraulic Presses
Furnace Filters
Regulators
Permanent Mold Casters
Stampers
Extrusion Presses
Scarfers
Ingot Loaders
Plating Machines
Scrap Metal Balers
Electric Furnaces
Injection Molding Machines
Forging Presses
Furnace Door Openers
Elevators and Hoists
Hydraulic Jigs

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