Monsanto

FROM (NAME & LOCATION)

DATE: March 25, 1969 CC:

SUBJECT: INDUSTRIAL FLUIDS INFORMATION BULLETIN: IF-3
"Competitive Fire Resistant Fluids"

REFERENCE:

TO :

AKRON - R. A. Garcia
AKRON - W. F. Vogler
ATLANTA - R. C. Hamil
CHICAGO - J. J. Roder
CHICAGO - R. A. Damiani
CINCINNATI - R. C. Meyer
HOUSTON - M. K. Ritterhouse
DETROIT - G. F. Fague
LOS ANGELES - J. H. Davidson
LOS ANGELES - C. L. Bradford
SEATTLE - R.S. Bevacqua
NEW YORK - J. S. Pullman
NEW YORK - G. R. Graham
NEW YORK - T. C. White
ST. LOUIS - C. L. Clay
WILMINGTON - R. P. Sullivan

H. S. Bergen - HBERG
J. R. Fallon
D. A. Hall
N. T. Johnson
D. A. Olson
D. F. Smith

Recently Raleigh Garcia communicated to the Fluids Specialists in his region, a list of fire resistant hydraulic fluids compiled by National Fluid Power Association. This list contains many fluids with which you may or may not be familiar. Attached is a copy of this list.

This list came from an earlier NFPA Fluids Committee meeting and was one of the main subjects under consideration at the meeting. Please note on page 2, Pydraul 135 and Pydraul 312 are listed under the classification "Oil-Synthetics". This terminology had been proposed by Stauffer and Houghton at previous committee meetings.

The subject of classification and nomenclature has been a prime concern of the NFPA Fluids Committee for 18 months. Perseverance, patience and education were rewarded February 4, 1969 at the NFPA Fluids Committee meeting in Milwaukee. The committee adopted the classifications of "Water-Oil Emulsion", "Water Glycol Type", and "Synthetic Base". The vote was unanimous. The "Synthetic Base" classification will include all fluids from pure phosphate esters to formulations such as Pydraul 312.

Dale F. Smith

/pke

DSW 183135

TABLE 1

FIRE RESISTANT HYDRAULIC FLUID LISTING

A) Water-Emulsion Type

COMPANY	TRADE NAME
Shell Oil Company	Irus 902, FRM, 3XF mine fluid
Humble Oil Company	Imol
Mobil Oil Company	Pyrogard ~~S~~, D
Sun Oil Company	Sun-Safe, Mine-Safe
Gulf Oil Company	Gulf FR Fluid
Sinclair Oil Company	Duro FR Fluid
Texaco Oil Company	Texaco, TL4-625
Pure Oil Company	Puro FR Fluid
American Oil Company	Permamul FR
Nalco Oil Company	Fyre-Safe WO
Cities Service Company (CITGO)	Pacemaker FR
E. F. Houghton Company	Houghto-Safe 5040, 5046
Hulbert Oil Company	Hul-E Mul Fluid
D. A. Stuart Oil Company	Dasco FR
Atlantic Refining Company	LSE-1256
Continental Oil Company	
Brooks Oil Company	Fluid B
Tower Oil Company	Safoil

B) Water-Glycol Type

COMPANY	TRADE NAME
Stauffer Chemical Company	Fyrguard 150, 150-M, 200
E. F. Houghton Company	Houghto-Safe 271, 520, 620, 420
Mobil Oil Company	Mobil Nyvac, #20, 30
Cities Service (CITGO)	Pacemaker Glycol FR Fluid 15, 20, 25
Quaker Chemical Company	Quintolubric 702, 702RD, 5702
Metal Lubricants Company	Melsyn FR Fluid 200, Glycol FR Fluid, GW-400R
Mobil Oil Company	Nyvac ~~No. 20, 30~~ FR, FR200
Park Chemical Company	Gly-draul Fluid
Henry E. Sanson & Sons, Inc.	Hydra-Safe 620, 625
Standard Oil Co. of Kentucky	Standard Glycol-FR Fluid
Texaco Oil Company	Safety Fluid 200, 300
Union Carbide	Ucon Hydrolube 150 CP, 275 CP, M-1
Nalco Oil Company	Fyre-Safe 225
Castrol	Hyspin AF-1, AF-2
D. A. Stuart Oil Company	
CHEM-TREND	HF-18

DSW 183136

FINAL CLASSIFICATION FOR C AND D — SYNTHETIC BASE

C) Phosphate Ester Type & Base

COMPANY	TRADE NAME
Stauffer Chemical Company	Fyrquel 90, 150, 220, 300, 550, 1000
E. F. Houghton Company	Houghto-Safe 1010, 1020, 1055, 1120, 1115, 1130
Mobil Oil Company	Pyrogard 53, 55, 190, ~~210~~, 600
Nalco Oil Company	Fyre Safe 1090, 1150, 1220, 1300, 1550
Monsanto Company	Pydraul 60, 150, 625, F-9, A-220
Humble Oil & Refining Company	Imol S 150, 220, 300, 550
Metal Lubricants Company	Melsyn P.E. 150, 220, 300, 550
Quaker Chemical Company	Quintolubric No. 610, 615
Standard Oil of California	Chevron FR Fluid 8, 10, 13, 20

D) Oil Diluted Synthetics

COMPANY	TRADE NAME
Monsanto Company	Pydraul 135, 312 Santo-Safe 300 — (WILL NOT BE LISTED)
GTIFS Service	CHX-604

DSW 183137

9/26/68

FIRE RESISTANT HYDRAULIC FLUIDS

Seller	Trade Mark	Water/Glycol	Water/Oil Emulsion*	Synthetic
Cities Service	Citgo Pacemaker	Glycol FR 15,20,25	FR ~~250,400~~	(oil-synthetic) CAX-604
Castrol	Hyspin			FRA
Chem-Trend		HF ~~16~~ 18		
Filmite		IXL 523		
~~Food Machinery~~ FMC ~~& Chemical~~	Kronitex			280,600
E. F. Houghton	Houghto-safe	271,416,515,520,525 616,620,625,640 620 B, 620 R	5000 series 5046 5046 W	1010,1055 1115,1120,1130, 1140 1145
Humble Oil	Imol		Imol	S 150, S 220, S 300, S 550
Metal Lubricants	Melsyn	FR Fluid 200 Glycol FR Fluid GW-400 R		P.E. 150,220,300,550
Mobil Oil	Pyrogard Nyvac	FR, FR 200	D	51, 53,55,43,160,230,630,210 out out
Monsanto	Pydraul			F9,AC,60,150,625, A200, 312**, 135**
	Santosafe (WILL NOT BE LISTED)			
	Skydrol			500A,7000 (aircraft)
Nalco Chemical	Fyre-Safe	225		1120-E,1150-E
Pennzoil	FR Fluid	2,3 (Calif.)	Maxmul (Pa.)	
Pennsylvania Petroleum	Penn-Mar Hydrol	150,200,300		
Quaker Chemical	Quintolubric	5702,702, 702 RD	5958	610, 615
Royal Lubricants	Royco			857
H. Sanson	Hydra-safe	620,625	W/O	
Shell Oil	Irus		902, FRM, 3KF (concentrate)	FR-2,FR-3
Standard Oil (Calif.)	Chevron			FR Fluid 8,10,13,20
Standard Oil (Kentucky)	Standard	Glycol FR Fluid		
Stauffer Chemical	Fyrquel Fyrguard	150M,150,200		90,150,220,300,550,1000 BLENDG = A60 220A, 550A
D. A. Stuart Oil	Dasco	FR 200	IFR Hydr. Fl.	
Texaco	Hydr. Safety Fl.	200,300	Fire Resistant Hydrafluid	
Union Carbide	UCON Hydrolube	200NM, 300NM, 150CP, 200CP, 550CP, 900CP, 275CP, 300CP, 150LT, 200LT, 275LT, 300LT 150 DB, 275 DB, M-1, ~~AO~~		A = ADDITIVE

m = morphelene

* In addition to those shown, almost all oil companies have an invert emulsion type fluid ... Oil-Synthetic Blend

DSW 183138

STLCOPCB4051055