

Lubrication Technologies, Inc.

Synthetic Lubricant Cross Reference Chart Series

Synthetic Fire Resistant Hydraulic Fluids

	<i>Name</i>	<i>ISO 32</i>	<i>ISO 46</i>	<i>ISO 68</i>	<i>ISO 100</i>	<i>Remarks</i>
Acculube	see Simmons Synthetics below					
Addinol (Germany)	Hydraulic Fluid HFC 32-46					Water Glycol
	Hydraulic Fluid HFD 46		(46)			Ester HFDR
	Hydraulic Fluid HFDU 68			(68)		Ester HFD U
Advance Petrochem (India)	Fire Resistant Hydraulic Fluid Phosphate					Phosphate Ester
Allegheny Petroleum	Altrasafe PE		200	300	500	Phosphate Ester
	Altra FR 200 WG		(200)			Water Glycol
Aluchem (Italy)	Alusynt Dinal HFR		46	68	100	
Amalie	Water/Glycol FR Fluid		200			Water Glycol
American Agip	FC 200		FC 200			Water Glycol
	PE 200		PE 200			Phosphate Ester
American Chemical Tech.	FR WG		200-D	300-D		Water Glycol
	FR WG		46-HP			Water Glycol
	EcoSafe FR		46	68	100	POE, HF-D
	EcoSafe EHC		46	68		PAG
American Lubricants	Syn WG FR Fluid		(46)			Water Glycol
Anderol	see Chemtura below					
Anglomoil (Australia)	Hydraulic BIO-FR		46	68		Water Glycol
Aral (Germany)	Montral 44		(46)			Water Glycol
Aztec (UK)	Water Glycol Hydraulic 46		(46)			Water Glycol
BASF	Plurasafe WGF 200D	150	200	300		Water Glycol, ethylene
	Plurasafe WGF 200E	150	200	300		Water Glycol, diethylene
BP	Enersyn SF-		C 46			Water Glycol
	Enersyn SF-		E 46	E 68		POE
Bechem (Germany)	Hydrostar TE			68S		Water Glycol
Benz Oil	BFR Fluid		46			Water Glycol
	Petraulic Sure Safe					Water Glycol
	Ultraguard 522			68		POE
Caltex	Hydraulic Safety Fluid		(46)			Water Glycol
	RPM FR		46			Phosphate Ester
Cam2	Fire Resistant Fluid FR 200 WG		(46)			Water Glycol
Castrol	Anvol SWX		46	68		HFDU Polyol Ester
	Anvol SWX FM		46	68		HFDU Polyol Ester, Factory Mutual
	Anvol WG		46			Water Glycol
	Anvol PE XC		46			Phosphate Ester
	Synthetic Fire Resistant (SFR)		46	68		POE

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Castrol (cont')	Hydrasafe 200		(200)			Water Glycol
	Transaqua HT					Water Glycol
	Transaqua DW					Water Glycol
	Tribol 1440					Phosphate Ester
Chem-Sol Chemtool	Tribol 1444-		46	68		POE
	Supreme Performance Fire Retardant Hydraulic Oil (SPFRHF)					Water Glycol
	Chemtolubric					POE
	Lubricast 902 LPC					Water Glycol
	HP-5046					Water Glycol
Chemtura	Reolube HYD 22	32, 32B	46, 46B	68, 68B	100B	Aryl Phosphate
	Reolube Turbofluid	32B GT	46B, 46XC			Phosphate Ester
	Reolube Turbofluid OMTI					Aryl Phosphate
	Bio Guard FRHF		46	68		POE
Chevron	Hydraulic Fluid WG, Safety Fluid		46			Water Glycol
CITGO	FR40XD		(46)			Water Glycol
	5046HP		(46)			Water Glycol, High Pressure
	Breox HL-SC					Water Glycol, Concentrate, Blend with Breox TB grades for HF-C
Cognis (BASF)	see Phillips 66 below					
Conoco	Fire Resistant Hydraulic Fluid (14 cSt at 40C)					
CPC (Taiwan)	Fire Resistant Hydraulic Fluid Type II		(39 cSt at 40C)			
	Hydraulic Oil WG		(41 cSt at 40C)			Water Glycol
	1550-		46			Water Glycol
CPI Engrg. (LZ)	Emkarox HV20 & HV45 base stock					HFC type, Water Glycol
Croda	Prolube 1446, 1556, 1427, 2082, 2031, 1445 base stock					HFD-U type, POE
DA Lubricants	PresurFlo 46 FR		46			Water Glycol
DA Stuart	Dasco FR 204 B		(46)			Water Glycol
	Dasco FR 205 B		(46)			Water Glycol
	UCON ADVANTA™ Hydrolube Concentrate					Water Glycol
Dow Chemical	UCON Trident AW	32	46	68		Anhydrous PAG
	UCON PowerPro AW	32	46	68		Anhydrous PAG
	UCON Hydrolube HP 5046D		(46)			Water Glycol
	UCON Hydrolube DG-	732	746	760		PAG, Dyed
	UCON Hydraulic Fluid WS-34	(32)				Anhydrous PAG
Elf	see Total					
Exxon	Firex		HF-C 46			Water Glycol, no longer available
	Firex			HF-DU 68		POE, no longer available
	See Mobil					
Forsythe	No-Fire HP-WG-46B		46			Water Glycol
	FR Fluid G 200		46			Water Glycol
Frontier	AllSyn FR		46	68		Ester
Fuchs	Hydrotherm 46 M		(46)			HFC, Water Glycol
	Hydrotherm 68 LW			(68)		HFC-E, Water Glycol
	Renosafe DU 46		(46)			HFD-U
	Plantoflux AT-S		46	68		HFD-U
	Turbofluid 46 XC		(46)			Phosphate Ester
Gulf Oil International	H-5000 series	32	46	68		
Habot (South Africa)	Griflube Aquatech FR 200		(46)			Water (Diethylene) Glycol

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Houghton	Houghto-Safe		1055, 1110, 1114, 1115, 1120, 1130			Phosphate Ester
	Cosmolubric HF		122, 130, 144, 1530			POE
	Houghto-Safe		200X, 273CF, 620, 419R, 520, 320			Water Glycol
	Cosmolubric B		220, 230			POE
	Hydrosield FR-395					Ester
	Aqualink 40, 300					Water Glycol
Hydro Safe	Aqualink HT-804					Water Glycol
	Water Glycol 200		(46)			Water Glycol
Hytec Industries	Chemolube H Special		46			Water Glycol
ICI Industrial	srr Solutia below					
Igol (France)	Secur Fluid H		(46)			Water Glycol
	Secur Fluid EO					POE
Imperial (Canada)	FIREXX HF-C 46		(46)			Water Glycol
	FIREXX HF-DU 46		(46)			POE
	FIREXX HF-DR 46		(46)			Phosphate Ester
INA (Croatia)	INA Hidrafluid HFC		46			Water Glycol
Imdian Oil (India)	Servofyress HFDU		46	68		Polyether Polyol
	Servofyress HFDU ES		46	68		Ester
	Servofyress HFDR	32	46	68	100	Triaryl Phosphate
Interlube	Fire Resistant Hydraulic Fluid 59D					
Irving Oil	Hydraulic Safety Fluid WG	(32)				Water Glycol
	Hydraulic Safety Fluid PE	(21 cSt at 40C)				Phosphate Ester
	Hydraulic Safety Fluid PO			(68)		POE
JAX	Pyro Guard Plus					Water Glycol
Kost USA	AchievAL FRH2		46	68		Water Glycol
Larson Chem.	Hydro 1250					Water Glycol
LubePlanet	Fire Resistant Hydraulic Fluid FR-200		(46)			Water Glycol
Lubricants USA	see Total					
Lubrication Engineers	9455 FR Hydraulic Fluid					POE
Lubright (Malaysia)	Lubricast 902 LPC					Water Glycol
Metalworking Lubricants	Metsafe FR-200					Water Glycol
	Metsafe FR-310					Phosphate Ester
Metatron (Mexico)	Metatron 610					Water Glycol
	Metatron 611					POE
	Millmax FRG		46			Water Glycol
Millers Oils (UK)	Millmax FRP		46			Phosphate Ester
	HyJet IV-A plus	(ISO 10)				Aviation Phosphate Ester Type V fluid
Mobil	Nyvac FR 200D		(46)			Water Glycol
	Pyrogard 53					Phosphate Ester
	Pyrotec HFD 46		(46)			
Monsanto	Pydraul	30E		90E	115E	Phosphate Ester
Moresco (Thailand)	Hydol H-200		(46)			Water Glycol
Moroil Technologies			AW 46 PE			Phosphate Ester
			AW 46 FR			Water Glycol
Morris (UK)	Liquisafe 46		(46)			Water Glycol
Nippon Oil	Hydrando FRX					Water Glycol
	Hydrando FRP		46			Phosphate Ester

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Nyco	Hydraunycoil FH	4420	4430	4440	4450		POE, HFDU	
	Hydraunycoil FH			4541	4551		Carboxylic Ester	
Oiltech	Aerolene SHF						POE	
	Hydrofluid HFR			46	68		Ester	
OMV (Austria)	OMV hyd HFC			46			Water Glycol	
	OMV hyd HFD-U			46			POE	
Panolin (Switzerland)	Hydrosafe 1			46			Water Glycol	
Pennzoil	Glycol FR Fluid			46			Water Glycol, no longer marketed	
	Pennzsafe FE						Phosphate Ester, no longer marketed	
	Pennzsafe SL						POE, no longer marketed	
Performance Filters (PFI)	FRHF-FG	22	32	46	68		POE, H1 Food Grade	
Petrofer	Ultra-Safe 1120						Phosphate Ester	
	Envolubric HE			46			POE	
	Envolubric PE			46			Phosphate Ester	
Petronas (Malaysia)	Hidraulik Syn FP			(46)			Phosphate Ester	
	Hidraulik Syn FR 46			(46)			Water Glycol	
Petron Plus (prev Petronomics)	POE FR Recirculating Fluid		54100	54104	54106	54112	POE	
	Water Glycol FR Hydraulic Fl		55250	55254	55256		Water Glycol	
	Water Glycol FR Hydraulic Fl			55260	55262	55264	Water Glycol	
	Water Glycol FR Hydraulic Fl		56020	56022	56024	56026	56028	Water Glycol
	POE FR Hydraulic Fluid			58100	58102	58104	POE	
PetroStar Global	Star FRHF Ester			46			Ester	
Phillips 66	Syndustrial FR Hydraulic Fluid			46	68		POE	
	Quintolubric 822-450 Hydraulic Fluid			46	68		POE (Quaker Chemical product)	
PICO Chemical	FRHH						POE	
	WGHF						Water Glycol	
Prista (Bulgaria)	HFC			(46)			Water Glycol	
PureLube	PureSafe FR-200			(46)			Water Glycol	
	PureSafe FR-310						Phosphate Ester	
Quaker Chemical	Quintolubric 702 RD			46			Water Glycol	
	Quintolubric 822-450					100	POE	
	Quintolubric 822-300 CM				68		Ester	
	Quintolubric 888-			46			POE (replaces Quintolubric 822-220)	
	Quintolubric 888-				68		POE (replaces Quintolubric 822-300)	
	Quintolubric 855			56 cSt at 40C			HFD type	
	Quintolubric 822-200			(46)			POE	
	Quintolubric 822-300				(68)		POE	
	Quintolubric 822-450					(100)	POE	
Ravenol (Germany)	Hydraulikoel L-HFC		32	46	68		Water Glycol	
Repsol (Spain)	Telex Vulcano HFDU				68		POE	
	Telex HFC			46			Water Glycol	
RockValley	WG200			46			Water Glycol	
Royal Manufacturing	FR-40XD			(46)			Water Glycol	
Schaeffer	265 Glygo Fluid			(46)			Water Glycol	
	620 Syquench				(68)		POE	
Sentinel Synthetics	S-FRH		32	46	68		POE	
Sentinel Canada	SenSyn PE		32	46	68		Phosphate Ester	
Setral (Germany)	HYD SE-HFD 46 EP			(46)			Phosphate Ester	

Lubrication Technologies, Inc.
Houston, TX 77082
www.lubritecinc.com

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Shell	Irus Fluid C		(46)			Water Glycol (diethylene)
	Irus Fluid DU		46	68		Ester
	<i>Name</i>	<i>ISO 32</i>	<i>ISO 46</i>	<i>ISO 68</i>	<i>ISO 100</i>	<i>Remarks</i>
	Iris Fluid DR					Tri-aryl Phosphate
	Turbo DR		46			Tri-aryl Phosphate
Shell Canada	No Fire WG 200R		(46)			Water Glycol
Simmons Synthetics	ALH-FR		46	68		Ester
Sinopec (China)	HFC FR Hydraulic Fluid	40		50		Water Glycol
Skydrol Eastman Chemical	Skydrol B4, LD-4, 5, PE-5					Phosphate Ester
SLFi	FRHF-	32	46	68		POE
Solutia	Skydrol MCS 2361					Aviation Phosphate Ester
	Skydrol LD-4					Aviation Phosphate Ester
	Skydrol 500B-4					Aviation Phosphate Ester
	Skydrol 5					Aviation Phosphate Ester
Statoil (Norway)	Hydrocor CC 44 MF		(46)			Water Glycol
	Thermac SB 68			(68)		Phosphate Ester
Stirling	Water Glycol HF					Water Glycol
Summit (Kluber NA)	HySyn FR-		46	68		POE
Super Lube	Non-Flammable Hydraulic Oil					Water Glycol
Supresta	Fyrquel	150	220	300	550	Phosphate Ester
	Fyrquel		220N			Phosphate Ester highly stable
	Fyrquel		220 MLT			Phosphate Ester meets Mil-H-19457D
	Fyrquel EHC, EHC-N, EHC-S		(46)			Phosphate Ester designed for EHC systems
	Fyrquel L					Phosphate Ester for EHC systems in CIS Republics
	Fyrquel GR		46	68		Phosphate Ester R&O
	Fyrquel GT					Phosphate Ester for Gas Turbine Bearings
	Fyrquel LT					Phos. Ester/AB low temp applications
	Fyrlube 15					Phosphate Ester low temp properties
Synco Chemical	Super Lube Fire Resistant Hydraulic Oil		46			Water Glycol
Tashoil (India)	Hydrash FR					Water Glycol
Tecnifos (Argentina)	Lubrisix		200	300		POE
Texaco	Hydraulic Safety Fluid (766)		(46)			Water Glycol No longer marketed
Thermal-Lube	XL-5000	32	46			Water Glycol
	XL5168			68		POE
Total	Hydransafe HFC146		(46)			Water Glycol
	Hydransafe HFDU46		(46)			POE
	Hydransafe FR NSG 38		46			Phosphate Ester
	Hydransafe FRS	32	46			Phosphate Ester
	Hydransafe HFDU LC 168			68		Phosphate Ester
	Hydransafe WG		46			Water Glycol
	FR Biohydran		46			Glycol
Tower	FR Fluid 40		(46)			Water Glycol
Tribology Tech-Lube	FRH 200		(46)			POE
	600 WS					Water Glycol
Tri State Industrial	AFHAW					Water Glycol
Unicorn (Singapore)	Hydraulic HFC 46		(46)			Water Glycol
U.S. Industrial Lubricants	Apollo 46 FRH		(46)			POE
Varouh	FR WG 200-D		46			Water Glycol

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Veloil (Thailand)	Indpro Fire Safe WG 46		(46)			Water Glycol
Verkol (Spain)	Resfluid HFDU			68		POE
	Glynkol		46			Water Glycol
Wallover	WOCOSAFE		46WG			Water Glycol
Yale Selco (India)	Selco Hydrolube SF-315		(46)			Water Glycol
	Selco Hydrolube SF-316		(46)			Water Glycol
76 Lubricants	Syndustrial FR Hydraulic Fluid		46	68		POE
	Quintolubric 822-450 Hydraulic Fluid		46	68		POE (Quaker Chemical product)

Fire Resistant Hydraulic Fluid Legend

HFA	95/5 fluids, or high water content hydraulic fluids, or oil-in-water emulsions
HFB	water in oil emulsions, often referred to as 60/40 or invert emulsions
HFC	water/glycol hydraulic fluid
HFD	water-free synthetic fire resistant hydraulic fluid based on organic esters, typically phosphate ester
HFD-U	water-free synthetic fire resistant fluids based on polyol esters

Notes, disclaimer, and copyright:

1. The intention of this study was to list only finished synthetic lubricants made from Group IV or Group V base oils (Group V base oils and glycols only for this chart); a few of the above, unknown to our knowledge, may possibly contain Group III base oils (not this chart).
2. All the above lubricants are full synthetic (except for water glycol FRHF); none are para-synthetic or semi-synthetic.
3. A few of the above listed lubricants may no longer be marketed, but were intentionally listed so that the user of these charts could determine a suitable replacement for a recently obsoleted lubricant.
4. This chart is only intended as a list of similar synthetic lubricants. Lubrication Technologies, Inc. does not intend to represent that all the lubricants listed herein are necessarily of the same quality or offer the same level of performance in all instances. Quality and performance can vary.
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