

United States Department of Labor  
M S H A  
Mine Safety and Health Administration

COMMERCIALY AVAILABLE FIRE-RESISTANT HYDRAULIC FLUIDS  
APPROVED BY MSHA UNDER CODE OF FEDERAL REGULATIONS  
TITLE 30, PART 35

ORIGINATION OFFICE:

Mine Safety and Health Administration  
Approval and Certification Center  
Materials and Explosion Testing Branch  
765 Technology Drive  
Triadelphia, West Virginia 26059

Amoco Oil Company  
200 East Randolph  
Chicago, IL 60680

30-12-1  
Amoco FR Fluid WO  
Date Approved: 4/2/71  
Invert Emulsion

BASF Wyandotte Corporation  
P.O. Box 181  
Parsippany, NJ 07054

30-42-1  
WGF 200D  
Date Approved: 2/7/74

30-42-2  
WGF 200E  
Date Approved: 5/22/75  
Water-glycol

30-42-3  
Plurasafe P-1000  
Date Approved: 7/18/84  
HWBF Concentrate

30-42-4  
Plurasafe P-1000  
Date Approved: 7/16/84  
HWBF Concentrate

30-42-5  
Plurasafe P-1200  
Date Approved: 7/18/84  
HWBF Concentrate

30-42-6  
Plurasafe P1200/P1400  
Date Approved: 7/18/84  
HWBF Concentrate

30-42-7  
Plurasafe P1210  
Date Approved: 3/13/85  
HWBF Concentrate

Century Lubricants Co.  
2140 South 88th Street  
Kansas City, KS 66111-8701

30-4-1  
Hulsafe 600  
Date Approved: 6/6/72  
Invert Emulsion

30-4-2  
Soluble Oil 40  
Date Approved: 6/28/79  
HWBF Concentrate

Century Lubricants Co.  
2140 South 88th Street  
Kansas City, KS 66111-8701  
(Continued)

30-4-3 (**Withdrawn**)  
Aquacent Heavy Hydraulic Fluid  
Date Approved: 5/28/80  
Invert Emulsion

30-4-4  
Phosphate Ester NTP  
Hydraulic Fluid  
Date Approved: 5/28/80

30-4-5  
Solcenic 2  
Hydraulic Fluid  
Date Approved: 5/28/80  
HWBF Concentrate

30-4-6  
Solcenic 3-A  
Hydraulic Fluid  
Date Approved: 5/28/80  
HWBF Concentrate

30-4-7  
Solcenic 4  
Hydraulic Fluid  
Date Approved: 6/9/80  
HWBF Concentrate

30-4-8  
Solcenic 7  
Hydraulic Fluid  
Date Approved: 5/28/80  
HWBF Concentrate

Century Lubricants Co.  
2140 South 88th Street  
Kansas City, KS 66111-8701  
(Continued)

30-4-9  
Solcenic 3B  
Longwall Fluid  
Date Approved: 3/3/89  
HWBF Concentrate

30-4-11  
Solcenic 2B  
Date Approved: 3/5/90  
HWBF Concentrate

30-4-12  
Solcenic 2B-W  
Date Approved: 4/24/91  
HWBF Concentrate

30-4-13  
Solcenic 801E  
Storage Fluid  
Date Approved: 1/22/92

30-4-14  
Solcenic HL  
Date Approved: 5/5/92  
HWBF Concentrate

30-4-15  
Solcenic Ecosyn 2001  
Date Approved: 10/18/94  
HWBF Concentrate

30-4-16  
Solcenic Ecosyn 2002  
Date Approved: 10/18/94  
HWBF Concentrate

30-4-17  
Solcenic Ecosyn 2003  
Date Approved: 10/18/94  
HWBF Concentrate

30-4-18  
Solcenic Ecosyn 3002  
Date Approved 10/18/94  
HWBF Concentrate

Century Lubricants Co.  
2140 South 88th Street  
Kansas City, KS 66111-8701  
(Continued)

30-4-19  
Solcenic Ecosyn 3010  
Date Approved: 3/21/95  
HWBF Concentrate

30-4-20  
Solcenic 2B-DF  
Date Approved: 4/14/95  
HWBF Concentrate

30-4-21  
Solcenic 3B-DF  
Date Approved: 4/14/95  
HWBF Concentrate

30-4-22  
Ecosyn 2001-DF  
Date Approved: 4/14/95  
HWBF Concentrate

30-4-23  
Solcenic Ecosyn 3050  
Date Approved: 4/23/96  
HWBF

30-4-24  
Solcenic Ecosyn 3060  
Date Approved: 4/25/96  
HWBF Concentrate

30-4-25  
Solcenic Ecosyn 2000 M  
Date Approved: 9/2/97  
HWBF Concentrate

30-4-27  
Solcenic 2012  
Date Approved: 11/20/98  
HWBF Concentrate

35-A040002  
Solcenic 2060  
Date Approved: 08/06/04  
Hydraulic Fluid Concentrate

Chempet Corporation  
1750 Armitage Court  
Addison, IL 60101

30-52-1  
Chempet FRF 3300  
Date Approved: 9/3/81  
Invert Emulsion

Chrysler Corporation  
5437 West Jefferson Avenue  
Trenton, MI 48183

30-46-1  
L-799  
Date Approved: 2/28/75  
Invert Emulsion

Cincinnati-Vulcan Company, Inc.  
5353-5363 Spring Grove Avenue  
Cincinnati, OH 45217

30-39-1  
Vulcan FR Fluid  
Date Approved: 11/29/72  
Invert Emulsion

Cities Service Tech. & Computer Center  
4500 South 129 East Avenue  
Tulsa, OK 74102

30-16-1  
Citgo Glycol FR 40XD  
Date Approved: 1/16/73  
Water-glycol

Conoco, Inc.  
P.O. Box 2197  
Houston, TX 77001

30-32-2  
Conoco Hy-Chock Oil  
Date Approved: 4/26/78  
HWBF Concentrate

30-32-3  
Conoco FR Hydraulic Fluid  
Date Approved: 8/12/80  
Invert Emulsion

Condat SA  
BP16  
38670 CHASSE SUR RHONE  
FRANCE

35-A040001  
Condat SH4 B Fire-  
Resistant Hydraulic Fluid  
Concentrate  
Date Approved: 03/30/04

35-A150001  
Condat D68 Synthetic  
Polyol Ester Hydraulic Fluid  
Date Approved: 02/04/15

D.A. Stuart Oil Company of America  
7575 Plaza Court  
Willowbrook, IL 60521

30-13-1  
Stuart's Dasco IFR  
Hydraulic Fluid  
Date Approved: 10/2/61  
Invert Emulsion

Last Updated 11/18/21

D.A. Stuart Oil Co. Of America  
7575 Plaza Court  
Willowbrook, IL 60521  
(Continued)

30-13-2  
Stuart's Dasco IFR  
Hydraulic Fluid Base  
Date Approved: 10/2/61  
Invert Emulsion Base

30-13-3  
Isosynth  
VX 110 BF2  
Date Approved: 6/4/93  
HWBF

30-13-4  
Hydraulic Fluid Concentra  
Isosynth  
VX 110 BF5  
Date Approved: 7/28/98

30-13-5  
Hydraulic Fluid Concentrate  
Isosynth  
VX 110 BF5  
Date Approved: 05/04/00

35-A070001  
Hydrocor GS 460NH  
High Water Base Concentrate  
Hydraulic Fluid  
Date Approved: 08/10/07

Houghton International Inc.  
Madison and Van Buren Avenues  
Valley Forge, PA 19482

30-21-3  
Houghto-Safe 5046W  
Date Approved: 10/16/73  
Invert Emulsion

30-21-5  
Cosmolubric HF-130  
Date Approved: 12/14/83  
Synthetic Ester

30-21-6  
Hydrolubric 141-M  
Date Approved: 12/14/83  
HWBF Concentrate

30-21-7  
Hydrolubric 120-M  
Date Approved: 12/14/83  
HWBF Concentrate

30-21-8  
Hydrolubric 120-B  
Date Approved: 12/14/83  
HWBF Concentrate

30-21-9  
Cosmolubric B-230  
Date Approved: 12/17/96  
Natural Ester

30-21-10  
Hydrolubric 123-M  
Date Approved: 09/28/00  
HWBF Concentrate

E/M Lubricants Inc.  
P.O. Box 2200  
Highway 52 North West  
West Lafayette, IN 47906

Eraquimicos S.A.de C.V.  
Ave. Del Acero 109  
Parque Industrial Escobedo  
Gral. Escobedo, N.L.  
CP. 66062  
MEXICO

Exxon Company USA  
P.O. Box 2180  
Houston, TX 77001

30-47-1  
RFR-150  
Date Approved: 9/10/75  
Invert Emulsion

35-A180001  
Ecodrive 130  
HWBCF  
Date Approved: 10/26/18

30-10-2  
Firexx I  
Date Approved: 11/27/72  
Invert Emulsion

30-10-3  
Firexx 95/5  
Date Approved: 9/15/81  
HWBF Concentrate

30-10-4  
Firexx M 95/5  
Date Approved: 2/10/88



Far Best Inc.  
1401 Greenleaf Avenue  
Elk Grove Village, IL 60007

Fuchs Lubricants Co.  
17050 Lathrop Avenue  
Harvey, IL 60426

WBF Concentrate

30-51-1  
FR 40 M  
Date Approved: 11/20/79  
Invert Emulsion

35-A060002  
Solcenic GM 20  
Date Approved: 12/21/06  
HWB Concentrate

35-A090003  
Solcenic 801E  
Date Approved: 05/27/09  
Storage Fluid

35-A090004  
Plantoflux FR 68 HOC  
Date Approved: 07/21/09  
Hydraulic Fluid

35-A100002  
Date Approved: 06/09/12  
Solcenic GM 15  
HWB Hydraulic Fluid

35-A120005  
Date Approved: 11/02/12  
Solcenic GM/D  
Hydraulic Fluid Concentrate

35-A130002  
Date Approved: 9/26/13  
Solcenic TS  
HWBC Hydraulic Fluid

35-A130003  
Date Approved: 12/3/13  
Solcenic TS/D  
HWBC Hydraulic Fluid

35-A140002  
Date Approved: 04/17/14  
Solcenic Eco Pro Glycerine  
Base Hydraulic Storage Fluid

35-A140003

Date Approved: 05/15/14  
Solcenic GM 20 NA  
HWBC Hydraulic Fluid

35-A150002  
Date Approved: 04/14/15  
Synthetic FireProtect 46  
(HFDU) Hydraulic Fluid

Gulf Research and Development Company  
P.O. Drawer 2038  
Pittsburgh, PA 15230

30-7-7  
Gulf FR Fluid LS 6914  
Date Approved: 11/12/75  
Invert Emulsion

Keenan Oil Company  
2350 Seymour Avenue  
Cincinnati, OH 45212

30-38-1  
KFR-R1  
Date Approved: 6/16/72  
Invert Emulsion

30-38-2  
KFR-RZ  
Date Approved: 11/15/72  
Invert Emulsion

30-38-3  
KFR-RA  
Date Approved: 11/15/72  
Invert Emulsion

Kodiak, LLC

35-A210001  
HYDRACLEAN HFA-S  
Date Approved: 9/23/21  
HWB Concentrate  
35-A210002  
HYDRACLEAN HFA-E  
Date Approved: 9/23/21  
HWB Concentrate

Lubrication Engineers, Inc.  
P.O. Box 16447  
Wichita, KS 67216

30-44-2  
6455 Monolec  
Date Approved: 4/21/77  
Invert Emulsion

Last Updated 11/18/21

Lubrizol Corp.  
29400 Lakeland Blvd.  
Wickliffe, Ohio 44092

30-54-2  
Lubrizol 5662A, 5662B  
Date Approved: 6/23/87  
HWBF Concentrate

30-54-4  
Microzol T30  
Date Approved: 3/6/87  
HWB Fluid

30-54-5  
Microzol T46  
Date Approved: 3/6/87  
HWB Fluid

Lubrizol Corp.  
29400 Lakeland Blvd.  
Wickliffe, Ohio 44092  
(Continued)

30-54-6  
Microzol T70  
Date Approved: 3/6/87  
HWB Fluid

30-54-7  
Longwall Concentrate 5665  
Date Approved: 11/25/88

Lyondell Petrochemical Co.  
Div. of Atlantic-Richfield Co.  
12000 Lawndale  
P.O. Box 2451  
Houston, Texas 77252-2451

30-32-3  
Arco Duro FR-HD  
Date Approved: 12/12/69  
Invert Emulsion

30-5-2  
Emulsiplex  
Date Approved: 5/8/86  
HWBF Concentrate

Mason Oil Company, Inc.  
Box 8343  
Pittsburgh, PA 15218

30-24-1  
Masol FR Mine Fluid  
Date Approved: 10/9/64  
Invert Emulsion

Metalworking Lubricants Company  
6785 Telegraph Road  
Suite 200  
Birmingham, MI 48010

30-48-1  
Metsafe IFR-100  
Date Approved: 9/10/75  
Invert Emulsion

Last Updated 11/18/21

Mobil Oil Corporation  
3225 Gallows Road  
Fairfax, VA 22037

30-3-2  
Mobilmet S-122  
Date Approved: 1/21/81  
Concentrate

30-3-3  
Mobilmet S-127  
Date Approved: 1/21/81  
HWBF Concentrate

30-3-4  
Pyrogard D  
Date Approved: 3/17/83  
Invert Emulsion

30-3-5  
Hydrasol LW 18  
Date Approved: 7/7/89  
HWBF Concentrate

Nalco Chemical Company  
Metal Industries, Chemical  
9165 Harbor Avenue  
Chicago, IL 60617

30-27-1  
Fyre-Safe W/O  
Date Approved: 4/18/65  
Invert Emulsion

National Petroleum Products  
North Urania Avenue  
Greensburg, PA 15601

30-55-1  
NPP  
Date Approved: 4/21/87  
Invert Emulsion

NYCO  
66 Avenue Des Champs Elysees  
BP 414 - 75366  
Paris Cedex 8  
France

35-A130001  
Hydraunycoil FH 4551  
Date Approved: 11/07/13  
Synthetic Ester HF

Pennzoil Company-Industrial Department  
Reno Building  
P.O. Box 808  
21 Seneca Street  
Oil City, PA 16301

30-19-2  
Maxzol Soluble  
Date Approved: 7/79  
HWBF Concentrate

30-19-3  
Maxmul FRP  
Date Approved: 6/5/86  
Invert Emulsion

Last Updated 11/18/21

Piedmont Chemical Company  
P.O. Box 382  
Bridgeville, PA 15017

30-45-1  
Fire Resistant Hydraulic  
Fluid 300  
Date Approved: 2/14/75  
Invert Emulsion

Quaker Chemical Corporation  
Conshohocken, PA 19428

30-20-1  
Quintolubric 958-50  
Date Approved: 12/17/63  
Invert Emulsion

30-20-2

Quintolubric 958-30  
Date Approved: 11/19/65  
Invert Emulsion

30-20-3  
Quintolubric 822-450  
Date Approved: 12/23/71  
Synthetic

Quaker Chemical Corporation

30-20-4  
Quintolubric 19-LWM  
Date Approved: 1/16/91  
HWBF

30-20-5 (Retired)  
Quintolubric 814-01  
Date Approved: 7/17/96  
HWBF  
(See 35-A080005, 35-A080006)

35-A060001-0  
Quintolubric 818-02  
Date Approved: 12/21/06  
HWB Concentrate

35-A080001  
Quintolubric 818-04  
Date Approved: 1/25/08  
HWBF Concentrate

35-A080002

Quintolubric 818-02ND  
Date Approved: 04/24/08

35-A080003  
Quintolubric 814-01ND  
Date Approved: 06/16/08  
HWBF Concentrate

35-A080004  
Quintolubric 888-68  
Date Approved: 7/23/08  
Synthetic Organic Ester HF

35-A080005  
Quintolubric 814-01  
Date Approved: 10/15/08  
HWBF Concentrate

35-A080006  
Quintolubric 814-02  
Date Approved: 10/15/08  
HWBF Concentrate

Quaker Chemical Corporation  
(continued)

35-A080007  
Quintolubric 814-02ND  
Date Approved: 11/5/08  
HWBF Concentrate

35-A090001  
Quintolubric 714-25  
Date Approved: 03/09/09  
Hydraulic Storage Fluid

35-A090002  
Quintolubric 814-01-F  
Date Approved: 04/03/2009  
"HWBF Concentrate"

35-A090005  
Quintolubric 818-02  
Date Approved: 08/26/09  
HWBF Concentrate

Quaker Chemical Corporation  
(continued)

35-A090006  
Quintolubric 818-02  
Date Approved: 10/28/09  
HWBF Concentrate

35-A090007  
Quintolubric 806-LW  
Date Approved: 11/24/09  
HWBF Concentrate

35-A100001  
Minetech Protection Fluid  
Date Approved: 03/15/10  
Glycerol Based Hydraulic  
Storage Fluid

35-A120001  
Quintolubric 818-02ND  
Date Approved: 06/22/12

35-A120002  
Quintolubric 818-02  
HWBHF Concentrate  
Date Approved: 07/22/12

35-A120003  
Quintolubric 914 A  
HWBHF Concentrate  
Date Approved: 07/23/12

35-A120004  
Quintolubric 814ND  
HWBHF Concentrate  
Date Approved: 08/08/12

35-A140001  
Quintolubric 818-02 Quintoglow  
HWBCHF Concentrate  
Date Approved: 03/31/14

35-A160002  
MINETECH PROTECTION  
FLUID PTZ  
Glycerol BHF  
Date Approved: 5/31/16

35-A190001

Quintolubric ShieldSafe ME  
HWBCHF Concentrate  
Date Approved 1/14/19

35-A190002  
Quintolubric ShieldSafe FS  
HWBCHF Concentrate  
Date Approved 1/14/19

Shell P & T Depot  
Shell Technology Center Houston  
3333 Highway 6 South  
Houston, TX 77082

35-A130001  
Shell Irus Fluid DU 68  
Data Approved: 01/31/14  
Synthetic Ester HF

35-A140004  
Shell Naturelle HF-E 68  
Name changed to now include  
Shell Naturelle Hydraulic  
Fluids S2 68  
Shell Fire Resistant Hydraulic  
Fluid S2 DU 68  
Data Approved: 08/25/14  
Synthetic Ester HF

Singer and Hersch  
P.O. Box 19  
Sasolburg 9570  
South Africa

30-53-1  
Senfluid HF7  
Date Approved: 6/16/83  
HWBF Concentrate

Southwest Grease and Oil Company  
1400 South Harrison  
Olathe, KS 66061

30-35-1  
Code 18306  
Date Approved: 3/13/72  
Invert Emulsion

30-35-2  
Fire Resistant Hydraulic  
Code 8X120  
Date Approved: 9/29/80  
Invert Emulsion

Suntech, Inc.  
P.O. Box 1135  
Marcus Hook, PA 19061

30-8-8  
Sun Sol (X996-216)  
Date Approved: 8/6/81  
HWBF Concentrate

Last Updated 11/18/21



Standard Oil Co.  
200 Public Square  
Cleveland, Ohio 44114-2375

Texaco, Inc.  
Research and Technical Department  
P.O. Box 509  
Beacon, NY 12508  
Transferred to Equilon  
Transferred to SOPUS Products  
(Shell Oil Products US)

Texas Refinery Corporation  
One Refinery Place  
Fort Worth, TX 76101

Tower Oil and Tech. Company  
4300 Tripp Avenue  
Chicago, IL 60632

Last Updated 11/18/21

30-8-9  
Sunsafe F (X196-143)  
Date Approved: 10/28/81  
Invert Emulsion

30-54-3  
Staysol 19  
Date Approved: 11/21/86  
HWBF Concentrate

30-9-2  
1670 LWM/786 Sol. Oil D  
Date Approved: 12/4/86  
HWBF Concentrate

30-9-3  
1666 LWM  
Date Approved: 6/26/89  
Aquashield 18

30-9-4  
LMW Shield Storage  
Date Approved: 6/6/96

30-54-2  
LWM Concentrate 19  
Date Approved: 6/23/87  
HWBF Concentrate

30-34-1  
TRC Fire Resistant HD  
Date Approved: 7/13/71  
Invert Emulsion

30-50-1  
Safoil No. 22  
Date Approved: 10/22/79  
Invert Emulsion

30-50-2  
Safoil No. 33  
Date Approved: 10/22/79  
Invert Emulsion

Trueblood Oil Co., Inc.  
11792 N US Hwy 41  
Farmersburg, IN 476850

35-A160001-0  
Tru Elite FR 46  
Date Approved: 05/15/16  
SHF

Union Carbide Corporation  
Technical Center  
Saw Mill River Road  
Route 100C  
Tarrytown, NY 10591

30-15-1  
UCON Hydrolube CC-732  
Date Approved: 12/18/61  
Water-glycol

30-15-2  
UCON Hydrolube CC-760  
Date Approved: 12/18/61  
Water-glycol

Union Oil Company of California  
1650 E. Golf Road  
Schaumburg, IL 60196

30-14-1  
Union FR Fluid  
Date Approved: 6/8/71  
Invert Emulsion

Unocal Refining & Marketing Division  
Unocal Corporation  
1650 East Golf Road  
Schaumburg, IL 60196-1088

30-10-3  
Soluble Oil MS  
Date Approved: 9/15/81  
HWBF Concentrate