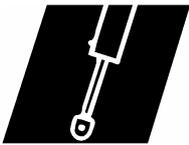


HYDRANSAFE HFDU 46



Lubrication

Biodegradable fire resistant hydraulic fluid.

APPLICATIONS

Hydraulic oil

- **HYDRANSAFE HFDU 46** is an ester-base biodegradable and fire-resistant, high-performance hydraulic fluid.
- **HYDRANSAFE HFDU 46** is recommended for hydraulic equipment operating in locations comprising a fire risk such as iron and steel works (coking plants, blast furnaces, continuous casting), mines, etc... The use of **HYDRANSAFE HFDU 46** lessens the serious risks presented by recourse to a mineral oil on the occasion of rupture of a hose or when a leak gives rise to oil mist, in the immediate vicinity of a flame, a part in the process of melting or a switch cupboard.
- **HYDRANSAFE HFDU 46** is especially recommended when there is the possibility of contamination of waters : offshore, mines.

SPECIFICATIONS

- International specifications
- ISO 6743/4 HFDU
 - ISO 12922

APPROVAL

- FACTORY MUTUAL in accordance with FM Approval Standard 6930 - "Flammability classification of Industrial Fluids".

ADVANTAGES

- With its considerable fire resistance properties must be associated its exceptional lubricating properties which guarantee a substantial reduction in wear and therefore a longer service life of the hydraulic components.
- High flash point and high spontaneous ignition temperature.
- Low pour-point providing good performances at low temperature.
- Very high natural viscosity index guaranteeing a viscosity constantly adapted to the temperature range in which the fluid must be used.
- Very good anticorrosion properties in relation to ferrous and non-ferrous metals making up a hydraulic circuit.
- Very good antioxidation power : enhanced service life.
- The product does not represent a danger to health and is biodegradable.
- Limit temperature of use 120°C.

TYPICAL CHARACTERISTICS	METHODS	UNITS	HYDRANSAFE HFDU 46
Density at 15°C	ISO 3675	kg/m ³	920
Kinematic viscosity at - 20°C	ISO 3104	mm ² /s	1580
Kinematic viscosity at 40°C	ISO 3104	mm ² /s	47.5
Kinematic viscosity at 100°C	ISO 3104	mm ² /s	9.35
Viscosity index	ISO 2909		185
Air release at 50°C	ISO 9120	min	4
Foaming seq.1	ISO 6247	ml/ml	< 50/0
Pour-point	ISO 3016	° C	- 42
Flash point V.O.	ISO 2592	° C	310
Fire point	ISO 2592	° C	358
Auto ignition temperature	ASTM 2155	° C	> 420
Biodegradability	OECD 301B	-	Ultimately biodegradable

Above characteristics are mean values given as an information.

TOTAL LUBRIFIANTS

Industrie & Spécialités

10-09-2007 (Annule et remplace version du 07-03-2007)

HYDRANSAFE HFDU 46

2/2



This lubricant used as recommended and for the application for which it has been designed does not present any particular risk.

A material safety data sheet conforming to the regulations in use in the E.C. can be obtained from your local commercial adviser or down loaded from www.quick-fds.com.

MATERIAL SAFETY DATA SHEET

TOTAL Specialties USA, Inc.. 5 N. Stiles Street, Linden NJ 07036
Phone 1-908-862-9300



Product HYDRANSAFE HFDU
ORIGINAL ISSUE May 10-2010
REVISION DATE Nov 4, 2013

IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME: HYDRANSAFE HFDU (ISO 46) PRODUCT #:
CHEMICAL NAME: Polyolester lubricating oil CAS #'S: Mixture
PRODUCT APPEARANCE AND ODOR: Brownish yellow liquid, low odor CHEMICAL FAMILY: NA
SYNONYMS: Fire resistant hydraulic fluid EMERGENCY TELEPHONE: 1-800-442-5823 or 1-908-862-9300

COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO.	%	HAZARD DATA
1) Fatty acid timethylolpropane ester	57675-44-2	96-98	*
2) Proprietary ingredients	Proprietary	2-4	

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS):
Health 1 Flammability 1 Reactivity 0

TRANSPORTATION INFORMATION

TRANSPORTATION/SHIPPING INFORMATION:

Department of Transportation (DOT): Not regulated

EMERGENCY FIRST AID**EYE CONTACT:**

If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN CONTACT:

As with all petroleum products, if this product contacts skin, wash affected area thoroughly with soap and water to prevent irritations from occurring. Oil soaked clothing should be removed and laundered frequently to minimize skin contact with product. Prolonged contact with skin may cause irritation.

INHALATION:

Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove from exposure and call a physician. If breathing is irregular or has stopped, start resuscitation; administer oxygen if available. If overexposure to oil mist, remove from further exposure until excessive oil mist condition subsides.

INGESTION:

If ingested, do not induce vomiting. Call a physician immediately.

Wide range

Negligible

EVAPORATION RATE @ 1 ATM. AND 25°C
(77°F) (n-BUTYL ACETATE = 1):
< 1.0

SOLUBILITY IN WATER @ 1 ATM. and 25°C
(77°F):
Negligible

POUR, CONGEALING OR MELTING POINT:
n/e

FREEZING POINT:
<-60 F

REACTIVITY

This product is stable and will NOT react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS:

CO₂, CO, smoke, fumes, unburned hydrocarbons and trace oxides of sulfur, nitrogen and phosphorus

CONDITIONS TO AVOID:

Open flames.

TOXICITY

ORAL (Acute)	N/E
DERMAL (Acute)	N/E
EYE	N/E
INHALATION (Acute)	N/E

CHRONIC, SUBCHRONIC, ETC. N/E

Medical Conditions Aggravated by Exposure: Unknown

This product does NOT contain any ingredients identified as carcinogenic by IARC, NTP, or OSHA.

SARA Section 313 Status: This material is not known to contain any chemicals on the SARA Section 313 list at a concentration greater than 1.0 percent or carcinogenic chemical on that list at a concentration greater than 0.1 percent.

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Keep product out of sewers and watercourses by diking or impounding. Absorb with sand or inert material. Sweep or scoop up and remove. Prevent spread of spill. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with local regulations.

WASTE DISPOSAL METHOD: (Consult federal, state, or local authorities for proper disposal procedures.) Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste site or facility.

PROTECTION AND PRECAUTIONS

VENTILATION: (Always maintain below permissible exposure limits.)

Use local exhaust to capture vapor, mist or fumes, if necessary. Provide ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. No smoking, or use of flame or other ignition source

RESPIRATORY PROTECTION: (Use only NIOSH approved equipment.)

Normally not needed at ambient temperatures. Use supplied air respiratory protection in confined or enclosed spaces, if needed. Use filter, dust, fume, or mist respirator type under misting conditions. Use can or cartridge; gas or vapor respirator type under conditions exceeding TWA standard.

PROTECTIVE GLOVES:

Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION:

Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT:

Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES/ENGINEERING CONTROLS:

Keep containers closed when not in use. Do not handle near heat, sparks, flame, or strong oxidants.

PERSONAL HYGIENE:

Minimize breathing vapor, mist, or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean before reuse; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

OTHER REGULATORY INFORMATION
SARA SECTION 313 - TOXIC CHEMICALS:

This product does not contain toxic chemicals under SARA Section 313 and 40 CFR Part 372.

SARA SECTION 311 - HAZARD CATEGORIES:

This product may meet one or more of the criteria for the hazard categories defined in 40 CFR Part 370 as established by Sections 311 and 312 of SARA as indicated below:

NO	IMMEDIATE (ACUTE) HEALTH HAZARD	NO	SUDDEN RELEASE OF PRESSURE HAZARD
NO	DELAYED (CHRONIC) HEALTH HAZARD	NO	REACTIVE HAZARD
NO	FIRE HAZARD		

SARA SECTION 302 - EXTREMELY HAZARDOUS WASTE:

This product is not known to contain any components in concentrations greater than one percent that are listed as Extremely Hazardous Substances in 40 CFR Part 355 pursuant to the requirements of Section 302(a) of SARA.

CLEAN WATER ACT (CWA):

Under the CWA, discharges of crude oil and petroleum products to surface water without proper Federal and State permits must be reported immediately to the National Response Center at (800) 424-8802.

CERCLA HAZARDOUS SUBSTANCES:

As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance.

U.S. TSCA INVENTORY

All components of this material are listed on the U.S. TSCA Inventory.

CALIFORNIA PROPOSITION 65

This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.

NEW JERSEY RIGHT-TO-KNOW LABEL

Lubricating oil (polyolester)

PREPARED BY: Alan Denniston

Technical Services

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS, AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE AND THE CONDITIONS OF HANDLING AND USE, OR MISUSE BEYOND OUR CONTROL, SELLER MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.