

NCS-30[®] ECF[™]

DRILL STRING COMPOUND

Ospar Commission-HOCNF

(Harmonized Offshore Chemical Notification Format)

CLASSIFICATION: "Yellow" rating for Norway

CLASSIFICATION: "E" for The United Kingdom
& The Netherlands

DESCRIPTION

NCS-30[®] ECF[™] is a premium quality, nonmetallic compound containing chemically inert fibers and EXTREME PRESURE and ANTI-WEAR additives. These are blended into Jet-Lube's biodegradable base grease, which gives a wide temperature range, superior adhesion to wet steel surfaces, resistance to water wash off and the ability to withstand invert and high-pH muds.

FROM AN ENVIRONMENTAL STANDPOINT, NCS-30 ECF is biodegradable, bioaccumulation potential-free and non-toxic to all kinds of life forms tested. This compound has the distinction of being the first compound to achieve a "Yellow" HOCNF rating in the Norwegian sector of the North Sea making it permissible in sensitive drilling areas such as the Barents Sea. It also has the distinction of being the first drilling compound to achieve a substitution warning-free HOCNF rating as well as an "E" classification in the UK sector, simplifying the completion of PON15B applications.

ADVANTAGES

- Biodegradable, non-bioaccumulative and nontoxic
- Contains no metals
- Excellent performance on high-chrome or nickel alloys
- Excellent protection against seizing and galling
- Sticks to wet joints
- Consistent rig floor make up
- Nonconductive for MWD applications
- Provides maximum protection on Wedge Thread[™] drill string connection designs
- Designed for optimum performance on all Rotary-Shouldered connections such as Tool Joints and Drill Collars. It can also be used on premium/proprietary thread designs such as Double-Shouldered, Wedge Thread^{™*}, and other types of mechanical seal designs. It may also be used on certain non-interference tubing thread designs when properly torque compensated.

* Trademark of Hydril Company

PRODUCT CHARACTERISTICS

Color	Beige
Thickener	Complex Thickeners
Fluid Type	Synthetic & Vegetable
Dropping Point (ASTM D-2265)	≥450°F (232°C)
Specific Gravity, typical	1.36
Density (lb/gal), typical	11.35
Oil Separation (ASTM D-6184)	<5.0
Wt. % Loss @ 212°F (100°C)	
Flash Point (ASTM D-92)	>450°F (232°C)
NLGI Grade	1 - 1½
Penetration @ 77°F (ASTM D-217)	300 - 330
Copper Strip Corrosion (ASTM D-4048)	1A, typical
Friction Factor* Relative to API RP 7G	1.0 (drill strings)
Salt Fog Resistance (ASTM B-117)	5% NaCl >2000 hrs., 20% NaCl >750 hrs.
Service Temperature	-10°F (-23°C) to 500°F (260°C)

* For premium connections, consult the connection manufacturer, or one should test the torque required for proper make-up prior to running.

PACKAGING

Code No.	Container Size	Container
23715	44 lb. (20 Kg.)	Pail
23729	550 lb. (250 Kg.)	Drum

LIMITED WARRANTY

Jet-Lube, Inc. makes the Limited Express Warranty that at the date of delivery, this product shall be free from defects in Jet-Lube, Inc. materials and workmanship.

This Limited Express Warranty is expressly in lieu of any other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of Jet-Lube, Inc.

The sole remedy for breach of the Limited Express Warranty shall be the refund of the purchase price. All other liability is negated and disclaimed, and Jet-Lube, Inc. shall not be liable for incidental or consequential damages.

CORPORATE LOCATIONS

Houston, Texas—World Headquarters

Maidenhead, England

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MATERIAL SAFETY DATA SHEET

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Product Name: NCS-30® ECF™
Chemical Family: Complex grease base
Use: Thread lubricant and sealant.

Supplier: ReinhardOil.dk ApS
Address: Helleruplund Alle 8
 DK 2900 Hellerup **Phone:** +45 70 26 70 07
Emergency Phone: +45 21 82 59 60 **Fax:** +45 70 26 70 47

Hazardous Components	CAS No.	Wt%	OSHA PEL	ACGIH TLV	Other Limits of Exposure
Nonhazardous Blend	14807-96-6				
	7789-75-5				
	134636-7-7				
	74869-21-9				
	65996-61-4				

Main Hazards—Health Effects
Eyes: May cause irritation. **Inhalation:** Viscous nature may block breathing passages if inhaled. **Ingestion:** May cause diarrhea.
Skin: For hypersensitive persons, may irritate the skin after prolonged periods of contact.

Eyes: Flush with water until all residual material is gone. If irritation persists, seek medical help. **Inhalation:** Clear air passage. If respiratory difficulty continues, seek medical help. **Ingestion:** Wash out mouth immediately. Consult physician. **Skin:** Wash thoroughly with hand cleanser, followed by soap & water. Contaminated clothing should be dry cleaned before reuse.

Extinguishing Media: Foam, dry powder, Halon®, carbon dioxide, sand, earth & water mist. **Unsuitable Extinguishing Media:** Water jet.
Protective Equipment for Fire fighting: Self-contained breathing apparatus.

Personal Precautions: Wear gloves & protective overalls. **Environmental Precautions:** Do not allow it to enter drains. **Spillage:** Scrape up bulk, then wipe up remainder with cloth. To prevent walking hazard, pick up remaining residue with diatomaceous earth.

Handling: No special handling precautions necessary. **Storage:** Do not store at elevated temperatures.

Respiratory Protection: None needed. **Hand Protection:** Protective gloves for hypersensitive persons.
Eye Protection: Glasses, if applied to parts in motion. **Body Protection:** Overalls.

Physical State: Semisolid paste **Color:** Beige **Odor:** Petroleum **pH:** Neutral **Boiling Range/Point °F (°C):** UN
Melting Point °F (°C): >400 (204) **Flash Point (COC) °F (°C):** >430 (221) **Autoignition Temperature °F (°C):** >500 (260)
Explosive Properties: LEL: 0.9% UEL: 7% **Evaporation Rate (Butyl Acetate):** <0.01 **Partition Coefficient (Log Pow):** N/A
Vapor Pressure (kPa): <0.01 **V.O.C. Content:** Nil **Density (g/cm³):** 1.36 **Flammability:** Not flammable at ambient temperature.
OAR Value: N/A **Oxidizing Properties:** None **Water Solubility:** Nil **Vapor Density:** >5

Stability: Chemically stable under normal conditions. No photoreactive agents. **Conditions to Avoid:** Powerful sources of ignition & extreme temps. **Materials to Avoid:** Strong inorganic & organic acids, oxidizing agents. **Hazardous Decomposition Products:** Burning generates smoke, airborne soot, hydrocarbons & oxides of carbon, sulfur & nitrogen. Residue mainly comprised of soot & mineral oxides.

Acute Toxicity: Not known. **Irritancy—Skin:** Very mild. **Skin Sensitization:** Not known. **Subacute/Sub-chronic Toxicity:** Not known.
Genotoxicity: None known. **Chronic Toxicity:** None known. **California Prop 65:** N/A **Carcinogen:** NTP: No **IARC:** No **OSHA:** No
EC Classification (67/548/EEC): No **Allergens:** None known. **LC-50:** >4000mg/l - extrapolated from component data. **LD-50:** N/A


Possible Effects: None
Behavior: Relatively well behaved. Bioaccumulation potential nil.
Environmental Fate: Highly unlikely to cause widespread contamination. Nontoxic to marine or land organisms.

Product Disposal: Do not incinerate. Contact waste disposal company or local authority for advice.
Container Disposal: Pails without liner—see Product Disposal section above. Pails with plastic liner—pail may only be disposed of via standard waste disposal services, recycled or reused. **Liner—see Product Disposal section above.**

Not classified as hazardous for transport. **D.O.T.:** Nonhazardous **UN No.:** Nonhazardous **Air Transport (ICAO & IATA):** Nonhazardous
Sea Transport (IMO & IMDG): Nonhazardous **Road & Rail Transport (ADR/RID):** Nonhazardous

Labeling Information: None needed **EC Annex 1 Classification:** Not Applicable. **R Phrases:** Not classified
S Phrases: S36/37/39 **Ozone Depleting Chemicals:** N/A **TSCA:** All components are listed. **TSCA 12B Components:** None
WHMIS (Canada): Not controlled. **Canadian DSL:** All components listed. **40 CFR Part 372 (SARA Section 313):** N/A
SARA 311/312: None **CERCLA:** Nonhazardous **RCRA Hazard Class:** Nonhazardous

SDS first issued. SDS data revised. **New Jersey Right To Know:** See Section II

Signature: 
Prepared by: Donald A. Oldiges
Date Issued: September 29, 2009

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HMIS SYMBOL

HEALTH	0
FLAMMABILITY	1
REACTIVITY	0
PPI	B

NFPA SYMBOL

FIRE

1
0 0
B

TOXICITY REACTIVITY

PERSONAL PROTECTION INDEX