NEOFLO™ 1-68i

Olefin & Paraffin Drilling Fluids

Updated: February 2016
SICC Product Code: V1393

Description:

- NEOFLO 1-68i is part of our Premium series of synthetic olefin and paraffin drilling fluids. Suitable for both deep and shallow water applications, NEOFLO 1-68i helps reduce the risks associated with offshore discharges.
- NEOFLO 1-68i biodegrades in both aerobic and anaerobic conditions and has low sediment toxicity.
- The product has a low viscosity and pour point and performs as well or better than traditional oil-based fluids.
- NEOFLO 1-68i is fully compliant with the US EPA Gulf of Mexico nonaqueous-based drilling fluid stock limitation requirements as specified in 77 FR No. 196, pg. 61605.*
- NEOFLO 1-68i is an internal olefin with a carbon chain length between C16 and C18.

Classification:

This product is classified as a synthetic according to the US EPA definition. "Synthetic material as applied to synthetic-based drilling fluid means material produced by the reaction of specific purified chemical feedstock, as opposed to the traditional base fluids such as diesel and mineral oil which are derived from crude oil solely through physical separation processes. Physical separation processes include fractionation and distillation and/or minor chemical reactions such as cracking and hydro processing." *

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* Meets US EPA Gulf of Mexico nonaqueous-based drilling fluid stock limitation requirements as specified in 77 FR No. 196, pg. 61605. (Notice of Final NPDES General Permit for New and Existing Sources and New Dischargers in the Offshore Subcategory of the Oil and Gas Extraction Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico {GMG290000}):

i) PAH <10 ppm according to EPA 1654
ii) Toxicity equal to or less than 65:35 1618IO reference fluid according to ASTM E-1367
iii) Biodegradation equal to or greater than 65:35 1618IO reference fluid according to modified ISO 11734
iv) GMG290000, Section G. Definitions, 77 "Synthetic Material," pg. 62

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Typical Chemical Properties [a]	Property	Unit	Value	Method
	C14 & Lower	%m/m	<3	SRC 00250
	C16	%m/m	50 – 60	SRC 00250
	C18	%m/m	37 – 47	SRC 00250
	C20 & Higher	%m/m	<13	SRC 00250
	Branched Olefin	%m/m	<14	SMS 2976
	Total n-Alpha Olefins	%m/m	<7	SRC 00249
	Total Paraffins	%m/m	<1	SRC 00251
	Appearance		CSFVI[b]	Visual
	Color, Pt-Co		<10	ASTM D1209
	Water	mg/kg	<100	ASTM D1744

a: An official sales specification is available from your local Shell Chemicals representative.
b: Clear and Substantially Free of Visible Impurities

Typical Physical Properties	Property	Unit	Value	Method
	Density @ 20 °C	kg/m^3	791	ASTM D4052
	Flash Point	°C	138	ASTM D93
	Pour Point	°C	-4	ASTM D97
	Kinematic viscosity			ASTM D445
	@ 0°C	cSt	9.4	
	@ 20°C	cSt	5.3	
	@ 25°C	cSt	4.7	
	@ 40°C	cSt	3.4	
	@ 100°C	cSt	1.4	
	Vapor Pressure @ 40°C	mmHg	<0.05	Calculated[1]

[1] Calculated from data on single carbon number olefins.

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Typical Environmental Properties	Property	Method/Endpoint	Value	Notes
	Biodegradation			
	Anaerobic	Modified ISO 11734 275-d	83%	BRR[1] = 0.7
	Aerobic	OECD 306	58%	
	Sediment Toxicity			
	Leptocheirus plumulosus	ASTM E 1367 10-d LC_{50}	614 mg/kg	STR[2] = 0.4
	PAH	EPA 1654A	<5 mg/kg	

[1] BRR = biodegradation rate ratio (% biodegradation of C1618 internal ole fin reference /% biodegradation of test material)
[2] STR = sediment toxicity ratio (C1618 internal olefin reference LC50/test material LC50)

Storage and Handling

NEOFLO products may be stored in carbon steel tanks. Hoses manufactured from polyethylene, butyl rubber, or neoprene liners are suitable for discharging. A nitrogen blanket is recommended to reduce potential for product degradation. Antioxidants can be added, upon request, to enhance the long-term stability. The recommended storage temperature is 20°C, the recommended maximum is 40°C and the recommended minimum is -3°C to prevent freezing. NEOFLO 1-68i is classified as "non-regulated" by the United States Department of Transportation (US DOT). Additional advice on the storage and handling of NEOFLO products can be found on our website at www.shell.com/business-customers/chemicals/our-products/higher-olefins-and-derivatives, or by contacting your local Shell chemicals companies' representative.

Hazard Identification

NEOFLO products have been demonstrated to have a relatively low order of toxicity by the routes of exposure (oral, dermal, inhalation) encountered in normal handling. Like many hydrocarbon liquids, olefins will dry and de-fat the skin on prolonged contact and will result in skin irritation and dermatitis. Also, like other hydrocarbons, this product can be dangerous when aspirated or ingested. Before handling the product, refer to the Safety Data Sheet that is available from your local Shell chemicals companies' representative. Additional information can be found on our website at www.shell.com/business-customers/chemicals/our-products/higher-olefins-and-derivatives in the Safety Data Sheet section.

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Emergency Helpline

For emergency telephone numbers refer to the Safety Data Sheet relevant for your company's country and language.

Shell Warranties

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