Shell MDS (Malaysia) Sendirian Berhad

Data Sheet

Issued April 2019

Product name

Shell GTL Saraline 185V

Product category

Synthetic Base Drilling Fluid

Description

Shell GTL Saraline 185V is a premium-quality drilling fluid suitable for use in deep water applications. Because of its clean natural gas origin, it contains virtually no aromatics and contaminants such as sulphur and amines. Shell GTL Saraline 185V is classified as a synthetic base drilling fluid as it is produced from the reaction of a purified feedstock from Shell's Qatar or Malaysia manufacturing plant, as opposed to highly refined/processed mineral oils, which are produced from the distillation or refining of crude oil (OGP, 2003)[1]

Shell GTL Saraline 185V readily biodegrades, is non-toxic in the water column and has low sediment toxicity. It has a low viscosity, a low pour point and relatively high flash point making it ideal for deepwater exploration. It is widely used as a non-aqueous base fluid in an invert emulsion drilling mud in the upstream oil and gas industry. Shell GTL Saraline 185V and/or its variants and related products have been used at various times in Malaysia, Thailand, Vietnam, Myanmar, Indonesia, The Philippines, Bangladesh, India, Australia, New Zealand, China and the Caspian Sea since 1997. Under the Offshore Chemical Notification Scheme for the North Seas (OCNS), on the Use of Organic-Phase Drilling Fluids (OPF) and the Discharge of OPF Contaminated Cuttings, Shell GTL Saraline 185V is accredited with Group E, substance ranked with least potential environmental hazard.

Shell GTL Saraline 185V is a mixture of alkanes of carbon chain length of predominantly C10 to C20.

1 International Association of Oil & Gas Producers (OGP). Environmental Aspects of the Use and Disposal on Non-Aqueous Drilling Fluids Associated with Offshore Oil and Gas Operations. Report No. 342, May 2003. Website address: http://www.ogp.org.uk/pubs/342.pdf

2 Group E classification can be found at the Centre for Environment, Fisheries and Aquaculture Science (Cefas) OCNS website

http://cefas.defra.gov.uk/media/557397/20120228%20excel%20ranked%20list.zip

Typical Chemical Properties

Property	Unit	Value	Test Method
Total Paraffin (C9-C24)	%m/m	99	GC x GC

Typical Physical Properties

Property	Value	Test Method
Physical state	Liquid at ambient temperature.	
Saybolt Colour	30+	ASTM D156
Odour	Odourless	

Typical Physical Properties

Property	Unit	Value	Test Method
Boiling Range			ASTM D86
IBP	°C	210	
90% recovered	°C	310	
Vapour pressure @40°C	kPa	< 0.1	Calculated
Density @ 15°C	kg/m^3	780	ASTM D4052
Kinematic viscosity @ 40°C	mm^2/s	2.7	ASTM D445
Vapour density (air=1)		> 5	
Sulphur	ppm	< 3	ASTM D3120
Aromatic	%m	< 0.1	SMS 2728
Pour point	°C	-30	ASTM D97
Cloud point	°C	-20	ASTM D2500
Flash point	°C	90	ASTM D93
Aniline Point	°C	94	ASTM D611
Auto-ignition point	°C	216	ASTM E659
Fire point	°C	114	ASTM D92
Solubility in water		Insoluble	
Copper corrosion 3 hrs at 100°F		1a	ASTM D130

Typical Environmental Properties

Property	Test protocol	Value	Toxicity classification
Biodegradation			
Aerobic	OECD 306 28-d	62%	Biodegrades
Water Column Toxicity		(mg/l, SPP)	
Mysidopsis bahia[1]	96-hr LC_{50}	>1,000,000	Non-toxic
T. mossambica[2]	96-hr LC_{50}	> 145,000	Non-toxic
Mugil persia[2]	96-hr LC_{50}	> 98,000	Almost non-toxic
Mugil cephalus[2]	96-hr LC_{50}	> 86,500	Almost non-toxic
Penaeus indicus[2]	96-hr LC_{50}	> 67,000	Almost non-toxic
Pagrus auratus[2]	96-hr LC_{50}	>100,000	Non-toxic
Nitzschia closterium[3]	72-hr EC_{50}	> 83,300	Almost Non-toxic
Pagrus auratus[4]	72-hr EC_{50}	>100,000	Non-toxic
Sediment toxicity			
Corophium volutator	10-d LC_{50}	> 50,000 mg/kg (dry)	Non-toxic
Boleopthalmus boddarti	10-d LC_{50}	> 235,000 mg/l	Non-toxic
Scylla serrata	10-d LC_{50}	>128,000 mg/l	Non-toxic
Partition coefficient			
OECD 117	Log P_{ow}	> 6.5	Do not readily bioaccumulate if <2 or >6[5]
Aromatics Content			
PAH Content	US EPA-16 PAHs	0.5 ppm	

Typical Environmental Properties	*1 PARCOM 1995* *[2] OECD 203* *[3] OECD 201, PARCOM ISO 10253 (using Nitzschia closterium)* *[4] US EPA 2003* *PARCOM guideline: sediment test results must be read together with biodegradability and bio-accumulation results* *[5] International Association of Oil & Gas Producers (OGP). Environmental aspects of the use and disposal of non aqueous drilling fluids associated with offshore oil & gas operations. Report no.342, May 2003. Website* http://www.ogp.org.uk/pubs/342.pdf
Storage and Handling	Shell GTL Saraline 185V may be stored in mild steel or stainless steel tanks. Seals and gaskets may be made from compressed asbestos fibre, PTFE, Viton A and Viton B. Natural rubbers, PVC, polystyrene and copper alloys are unsuitable materials for use with Shell GTL Saraline 185V. The recommended storage and handling temperature is between 15 and 45°C.
Hazard Identification	Shell GTL Saraline 185V has a relatively low order of toxicity by the routes of exposure (oral, dermal, inhalation) encountered in normal handling. Like many hydrocarbon liquids, Shell GTL Saraline 185V will dry and de-fat the skin on prolonged contact and on repeated contact could 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 Material Safety Data Sheet.
Emergency helpline	+60 (86) 292 222 Refer to the telephone numbers in the Material Safety Data Sheet for emergency and technical support.
Shell Warranties	The information contained in this publication is to the best of our knowledge, true and accurate, but any recommendations or suggestions that may be made are without guarantee, since the conditions of use are beyond our control. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents covering any material or its use. SHELL MDS (Malaysia) Sendirian Berhad makes no representation and extends no warranty or condition, express or implied, and assumes no liability (whether in contract, tort or otherwise) with respect to the completeness, utility or accuracy of any product; merchantability or fitness for a particular purpose; descriptions of the product are for the sole purpose of product identification and do not imply or express any warranty.