

# Shell GTL Saraline 185V

## Synthetic Base Drilling Fluid (Shell)

Shell GTL Saraline 185V is a premium-quality drilling base fluid suitable for use in a range of well conditions and in different environments, from deep water to high temperature wells in the upstream oil and gas industry. Due to its clean natural gas origin, Shell GTL Saraline 185V contains virtually no Sulphur and aromatics. It is thus categorized as Group III NAF (Non-Aqueous Fluid) (OGP, 2009)<sup>1</sup>. Shell GTL Saraline 185V is classified as synthetic base drilling fluid as it is produced from the reaction of purified feedstock from Shell's Malaysia and Qatar plants, as opposed to highly refined/processed mineral oils, which are produced from the distillation or refining of crude oil (OGP, 2003)<sup>2</sup>.

Shell GTL Saraline 185V has low viscosity, low pour point and relatively high flash point making it a versatile base fluid for various invert emulsion drilling fluid formulations. Shell GTL Saraline 185V and/or its variants have been used by more than 40 customers in over 20 countries worldwide since 1997.

Shell GTL Saraline 185V readily biodegrades, is non-toxic in water column and has low sediment toxicity. 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.

### Typical Physical Properties

Physical appearance..... Liquid at ambient temperature  
 Saybolt Colour ..... 30+  
 Odor ..... Odorless

### Typical Chemical Properties

Property	Unit	Value	Test Method
C10 & Lower	%m/m	1.8	GC x GC
C11-C14	%m/m	28.5	GC x GC
C15-C18	%m/m	40.8	GC x GC
C19-C20	%m/m	21.1	GC x GC
C21 & Higher	%m/m	7.8	GC x GC
Total Paraffin	%m/m	99.2	GC x GC

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Eastern Hemisphere	Western Hemisphere
Gamle Forusvei 43	P.O. Box 42842
N-4033 Stavanger,	Houston, Texas 77242-2842
Norway	Phone: 281-561-1300
Phone: +47-51-57-73-00	Fax: 281-561-1441
Fax: +47-51-57-74-51	www.miswaco.slb.com



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## Typical Physical Properties

Property	Unit	Typicals	Test Method
Boiling Range			ASTM D86
IBP	°C	205	
90% recovered	°C	315	
FBP	°C	330	
Vapour pressure @40°C	kPa	<0.1	Calculated
Density @ 15°C	kg/m3	778-785	ASTM D4052
Kinematic viscosity @ 40°C	mm2/s	2.6-2.8	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	-17	ASTM D2500
Flash point	°C	85	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

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**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 <sup>1</sup>	96-hr LC50	>1,000,000	Non-toxic
T. mossambica <sup>2</sup>	96-hr LC50	>145,000	Non-toxic
Mugil persia <sup>2</sup>	96-hr LC50	>98,000	Almost non-toxic
Mugil cephalus <sup>2</sup>	96-hr LC50	>86,500	Almost non-toxic
Penaeus indicus <sup>2</sup>	96-hr LC50	>67,000	Almost non-toxic
Pagrus auratus <sup>2</sup>	96-hr LC50	>100,000	Non-toxic
Nitzschia closterium <sup>3</sup>	72-hr EC50	>83,300	Almost Non-toxic
Pagrus auratus <sup>4</sup>	72-hr EC50	>100,000	Non-toxic
Sediment toxicity			
Corophium volutator	10-d LC50	>50,000 mg/kg (dry)	Non-toxic
Boleophthalmus boddarti	10-d LC50	>235,000 mg/l	Non-toxic
Scylla serrata	10-d LC50	>128,000 mg/l	Non-toxic
Aromatics Content			
PAH Content	US EPA-16 PAHs	0.5 ppm	
BTEX		Non Detectable	

**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.

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