



IndianOil



IMO 2020

IndianOil – The Energy Solutions Provider

**Committed to the environment.
Committed to delivering excellence.**

The Energy of India's Rise

IndianOil's core business has been refining, transportation and marketing of petroleum products. Company has over the years expanded its operations across the hydrocarbon value chain - upstream into oil & gas exploration & production and downstream into petrochemicals, besides diversifying into natural gas and alternate energy resources.

With 11 refineries, IndianOil is the largest oil refiner in India having a combined refining capacity of 80.55 MMTPA with a turnover of more than USD 97,000 million. IndianOil is among the top 10 strongest Oil and Gas Brands globally.

“ IndianOil is a market leader in Marine Fuels with a market share of 67% having bunkering at all major and minor ports (including Lakshadweep, Andaman and Nicobar islands) across 7517 kms long coastline of India... ”



What Experts say...

Low sulfur fuel oil production through increased blending of fuel components from different sources with different formulations on arbitrary basis can lead to complex quality concerns

IndianOil is one of the few oil companies in the world producing VLSFO after proper research at our R&D Centre Faridabad, thus addressing the fuel compatibility concerns of ship-owners

IndianOil bracing the transition: MARPOL 2020

0.5% S Fuel Oil (VLSFO)



- IndianOil supplies VLSFO produced from Low Sulphur Residue components coming from refining processes
- Viscosity of VLSFO is in the range of 80-300 cst

Specs: ISO 8217 : 2017 RMG380

Lubes: SERVO MARINE 0530 & ME 4050
SERVO MARINE 1540 / 2030 / 2040

0.1% LS MGO

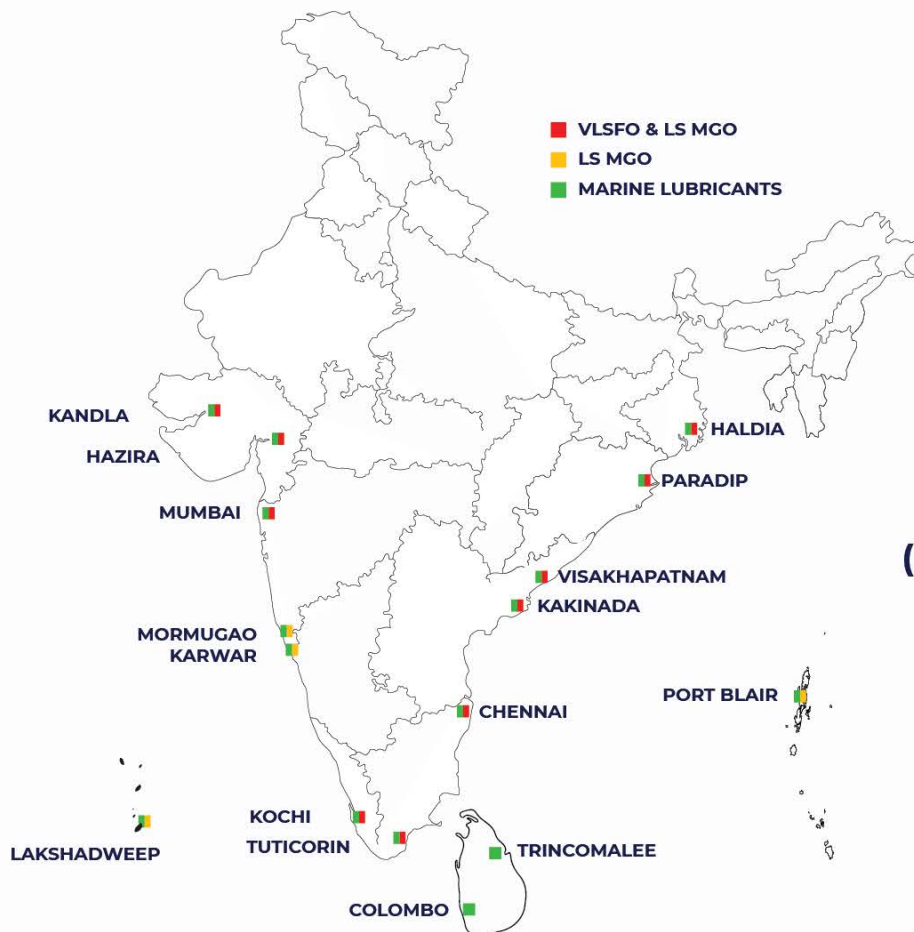


MGO (HFHSD) is a differentiated grade specifically meant for Merchant as well as Naval Vessels' distillate fuel needs

Specs: Exceeds ISO 8217 : 2017 DMA & MIL-DTL-16844M

Lubes: SERVO MARINE 0530 & LB 1750
SERVO MARINE 1030 / 1040

IndianOil Marine Bunker Network



**100 mesh
strainers fitted**
at the delivery end of MGO
(HFHSD) at all ports to ensure
clean fuel supply to ships.

IndianOil bracing the transition: MARPOL 2020

- MGO (HFHSD) quality in India is governed by IS 16861:2018 standards.
- Indian Oil is the only oil company in India which is supplying MGO (HFHSD) that exceeds NATO standard MIL-DTL-16884M specifications.
- IndianOil is meeting 100% MGO (HFHSD) requirement of Indian Navy and Coast Guard and is also a preferred supplier by all Foreign Navy ships visiting India.
- IndianOil has world class R&D centre at Faridabad and an extremely knowledgeable and competent Technical Services Team across all Indian States to resolve any fuel or lubes related issue faced by the marine customers.
- Following Technical Services can be availed from Indian Oil across the country:
 1. Rationalisation of Lube grades for reduction in inventory cost and improvement in efficiency.
 2. Testing and troubleshooting for lubricant related issues and necessary report thereof.
 3. Conducting seminars on Marine Lubes and Fuels.
 4. Trial on alternate fuels in line with Sustainability Initiatives undertaken by major corporates.
 5. Lubrication survey and condition monitoring of identified systems.
- Superior Quality parameters of IndianOil MGO (HFHSD):

- Exceeds NATO standard MIL-DTL-16884M specifications.
- Limits on particulate contamination improves combustion of fuel and reduces choking of filters in the fuelling system.
- Reduction in Sulphur content helps reduce pollution by reducing SOx emissions.
- High Flash Point increases the safety of storage and handling of MGO.
- Lower Acid number helps in reducing corrosion and engine deposits.
- Higher Cetane number improves ignition of fuel.
- Lower Pour Point, Cloud Point and Cold Filter Plugging Point ensures improved cold flow properties.



- Detailed comparison of IndianOil HFHSD specifications with MIL-DTL-16884M, ISO 8217 and IS 16861: 2018 is given below:

SL. No	Characteristics	Unit	Test Methods*	MIL-DTL-16884M	ISO 8217	HFHSD as per IS16861	IOC MIL HFHSD – Typical Values	
1	Appearance	-	ASTM D 4176	Clear, bright, and free from visible Particulates	Clear, bright, and free from visible Particulates	Clear, bright, and free from visible Particulates	Clear, bright, and free from visible Particulates	
2	Demulsification , @ 250C	Minutes	ASTM D1401	Max 10	-	-	5	
3	Density at 15 °C	kg/m3	ASTM D1298 (R), D4052, D287	Max 876	Max 890	Max 860	833.1	
4	Distillation	°C	ASTM D86 (R) , D2887	Report		85% min @ 350 deg C 95% min @ 370 deg C		
	10% V/V recovered at			Report				219
	50% V/V recovered at			Max 357				277
	90% V/V recovered at			Max 385				341
	Final Boiling Point			Max 3.00				366
	Residue + Loss	% Vol						2.00
5	Cloud Point	°C	ASTM D5773 , D2500(R), D5772, D5771	Max. (-) 1	-	-	(-)2	
6	Colour	Number	ASTM D1500 (R), D6045	Max. 1.0	-	-	0.5	
7	Flash Point (PMCC)	°C	ASTM D93 (R) , D6450 , D3828	Min. 66.0	Min 60.0	Min 66.0	69	
8	Particulate contamination,	mg/lit	ASTM D6217 (R), D5452	Max 10	-	-	4.5	
9	Pour Point	°C	ASTM D97 (R), D5949, D5950, D5985 8/	Max. (-) 6	Max. (-) 6	Winter 3	(-)9	
						Summer 15		
10	Kin. Viscosity at 40 °C	cSt.	ASTM D445	1.70 to 4.30		2.0-5.0	3.03	
11	Acid Number (Acidity)	Mg KOH/g	ASTM D974 (R)	Max. 0.30	Max 0.50	Max 0.50	0.1	

- Detailed comparison of IndianOil HFHSD specifications with MIL-DTL-16884M, ISO 8217 and IS 16861: 2018 is given below:

SL. No	Characteristics	Unit	Test Methods*	MIL-DTL-16884M	ISO 8217	HFHSD as per IS16861	IOC MIL HFHSD – Typical Values	
12	Ash content	% wt	ASTM D482	Max. 0.005	Max 0.01	Max. 0.01	0.004	
13	Carbon Residue on 10% bottoms	% wt.	ASTM D524 (R) 10/	Max. 0.20	Max 0.30	Max 0.30	0.13	
			D189, D4530 10/	Max 0.14				
14	Copper Corrosion, 3 hrs at 1000C	Classification	ASTM D130	Max. 1	-	Max. 1	1a	
15	Hydrogen content	Wt%	ASTM D7171 (R), D4808, D5291	Min.12.5	-	-	13.39	
16	Cetane Number	Number	ADTM D:613	Min. 46	-	-	51.1	
	Cetane Index	-	ASTMD 4737, D976	Min. 45	Min 40.0	Min 45	55.8	
17	Storage Stability (total Insoluble)	mg/100ml	ASTM D5304 (R)	Max. 3.0	-	-	1.2	
			ASTM D2274	Max. 1.5				
18	Sulfur content	Wt%	ASTM D4294 (R) , D1266, D1552, D2622, D3120, D5453 (R) , D7039	Max.0.1	Max 1.0	Max 0.2	0.017	
19	Trace metals	ppm	ASTM D7111 (R), D3605	-	-	-	0.5	
	Calcium							Max 1.0
	Lead							Max 0.5
	Sodium+ potassium							Max 1.0
	Vanadium							Max 0.5
20	Lubricity, corrected WSD @ 60oC,	µm	ISO 12156, ASTM D6079, D7688	Max 460	Max 520	Max 520	414	
21	Water and sediment	% v/v	ASTM D2709	Max 0.05	Max 0.05	Max 0.05	0.02	
22	Cold filter plugging point (CFPP)	oC	ASTM D6371	Max 0	-	Max 0	(-) 3	



Contact details for Marine Fuels:

Port	Contact	Contact No	Email
Kandla, Mundra, Sikka, Vadinar	Mr. Arvind Verma	+91 7574021499	vermaa@indianoil.in
Dahej, Hazira, Magdalla	Mr. Naveen Kumar	+91 9426428453	kumarnaveen@indianoil.in
Mumbai	Mr. Sudipto Mitra	+91 9152011313	sudiptomitra@indianoil.in
Mormugao	Mr. Kavita Tickoo	+91 8275067073	ktickoo@indianoil.in
Karwar	Mr. Sandeep Nagpal	+91 9419261551	snagpal@indianoil.in
New Mangalore	Mr. Debabrata Mukherjee	+91 9433045642	mukherjeed@indianoil.in
Kochi	Mr. N Balaji	+91 9443365313	balajin@indianoil.in
Chennai, Ennore, Tuticorin	Mrs. Y Mangaiyarkkarasi	+91 9448280140	ymangaiy@indianoil.in
Krishnapatnam	Mr. Lakshmana Rao	+91 9490958040	lraoa@indianoil.in
Kakinada, Visakhapatnam, Gangavaram	Mr. Surajit Kundu	+91 9434738099	skundu@indianoil.in
Paradip, Dhamra	Mr. Ashokkumar Kundu	+91 9437027804	akkundu@indianoil.in
Haldia, Kolkata, Port Blair	Mr. Devraj Dutta	+91 8377944765	djdutta@indianoil.in

Contact details for Technical Services:

State	Contact	Contact No.	Email
Gujarat	Dr. Rajiv Srivastava	+91 9426416116	srivastavar@indianoil.in
Maharashtra	Mr. P. Pradeep	+91 9442623936	ppradeep@indianoil.in
Karnataka	Mr. Chandrasekhar Poranki	+91 9480886345	cporanki@indianoil.in
Kerala	Mr. Sanoop K	+91 9188667494	sanoopk@indianoil.in
Tamilnadu	Mr. Gaurav Chauhan	+91 9588528833	chauhang1@indianoil.in
Andhra Pradesh	Mr. Saagar V Kondaguli	+91 9449596950	svkondaguli@indianoil.in
Odisha	Mr. Kuldeep Pradhan	+91 9771402363	kuldeep@indianoil.in
West Bengal	Mr. Jayanta Bhoumik	+91 8291923928	jbhowmik@indianoil.in

Head office

Indian Oil Corporation Limited
G-9, Ali Yavar Jung Marg
Bandra (East), Mumbai – 400 051
Phone: +91 22 2644 7963

Website:

www.iocl.com
mkudale@indianoil.in