

Technical Data Sheet



Omstar DX1 RESIDUAL® Fuel Lubricant for Ships, Trains, and Generators fueled by Diesel 5 or 6, Residual, Bunker, or Heavy Fuel Oil (formerly R-4000)

Description:

Short-chain and long-chain synthetic esters combined with a petroleum distillate carrier.

Function:

Improves furnace performance; increases energy/liter fuel; reduces harmful emissions (SO₂, NO_x, CO, Hydrocarbons/ particulates); cleans exhaust/emissions systems; reduces fuel viscosity for lower pump power required and better cold-weather starting; reduces asphaltenes in fuel tanks, and reduces maintenance of fuel tanks as a result.

Benefits:

- Improves performance of diesel engines by improving combustion efficiency
- Increases Cetane by 4-5%
- Cleans injectors, valves, fuel systems, and exhaust stacks
- Fully combusts (99.99% combustible), no ash or residue
- Adds lubricity to ULSD (Ultra Low Sulfur Diesel) reducing wear of pump components –reduces injection nozzle sizes needed as a result
- Significantly reduces SO₂, NO_x, CO, and hydrocarbons/particulate

Hazard Identification:

Principal Hazards: Combustible liquid, prolonged or repeated skin contact may cause dermatitis, see section 11 on the MSDS for complete health hazard information.

Threshold Limits: The PEL (OSHA) and the TLV (ACGIH) is 5 mg/m³ for oil mists.

Primary Routes of Exposure: Non-Hazardous

First Aid Measures:

ORAL: Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.

EYES: Flush with water at least 15 minutes. Get medical attention if eye irritation develops or persists.

SKIN: Wash immediately with soap and water. Remove soiled clothing. Get medical attention if irritation develops. Launder contaminated clothing.

INHALATION: Remove exposed person to fresh air. If breathing is labored, administer oxygen and obtain immediate medical attention. If irritation persists or if toxic symptoms are observed, get medical attention.

PRODUCT

Omstar DX1 RESIDUAL® (formerly R-4000)

Safety Data Code
SDS No. 21120Omstar-1

NFPA



HMIS (I)	
Health	0
Flammability	1
Reactivity	0
Personal PE	C



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Properties and Compounds:

Appearance:	Yellow Oil Liquid	
Density 60° F	ASTM-D287	0.8324 g/cm ³
Boiling Point	ASTM-D93	> 230° F
Calorific power	ASTM-D240	38,438.24 kj/kg
Cloud Point	ASTM-D2500	-5° C
Pour Point	ASTM-D97	-9° C
Sulfur (%P, S)	ASTM-D129	Less than 0.05
Humidity (%V)	ASTM-D95	Less than 0.01
Total Ashes (%P)	ASTM-D482	Less than 0.001 or 99.99% free of ashes

Metals Spectrograph:

Iron	0.60 ppm
Silicon	0.22 ppm
Magnesium	0.016 ppm
Copper	0.017 ppm
Nickel	0.044 ppm
Calcium	0.21 ppm
Aluminum	Tr < 0.01
Vanadium	0.069 ppm
Other Elements	Nil
Loss on Ignition (%P)	ASTM-D482 99.99976%

Lubricant Application:

FUEL: 30ml of Omstar DX1 RESIDUAL® for each 125 liters of diesel (or 1oz DX1 RESIDUAL® to 30 gallons Diesel, 1:4000).

First Application in fuel (not oil): Recommend a shock treatment of 5 times the normal dose of Omstar DX1 RESIDUAL® or 150ml Omstar DX1 RESIDUAL® for each 40 liters of fuel (1oz: 2 gallons or 5 oz : 10 gallons). This will produce "Iron Soap" more quickly, and clean injectors and exhaust systems more thoroughly.

Shipping:

- **Containers:** 14,000-24,000 liter collapsible bladder in 20' ISO container, 55 gallon drum, 20 liter container. Do not use low-density polyethylene containers, only high-density polyethylene (HDPE), recycling code "2"
- **Transportation Information:** Shipping Classification: DOT "Not Regulated."