

## Drag Reducing Agent

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**DRA** is a proprietary formulation to optimize throughput for turbulent fluid flow issue in crude oil pipeline transportation system. It is available in aqueous and oil based to apply in Main Oil Line (MOL) or any possible pump discharge point which experiences critical pressure buildup or low expected throughput. DRA performs well in waxy crude oil separation system to eliminate slugging issue.

### Performance Features

- Reduces fluid drag or friction during crude oil transportation.
- Increases system throughput.
- Conserves pumping energy.
- Performs in any size of pipelines.
- Eliminates or reduces the presence of sludge after pigging.
- Oil soluble.
- Provides seasonably good corrosion inhibiting properties.

### Application

DRA is typically applied neat. Continuous application is recommended at the following point for injection:

- Pump Discharge
- Wellhead Header
- Pig Launch
- Outlet Separator
- Metering

Actual volume required depends on the flow-rate, pipe volume, crude oil viscosity, wax content, water content and pipe surface roughness. For further information please consult our technical representative.

### Packaging and Distribution

Available in 209 liters returnable drum.

### Safety and Handling

Avoid contact with skin or eyes. Wash off skin and irrigate eyes with plenty of water in case of accidental splashes occur. Wear appropriate protective clothing. Material Safety Data Sheets is available upon request.

### Typical Physical Properties

Operating Temperature .....	Min 25°C to Max 100 °C
Physical State .....	Liquid
Pour Point .....	>-10°C
Flash Point .....	>150 °C
Evaporation Rate .....	Not determined
Density .....	0.90 – 0.95 kg/L @ 25 °C
Appearance .....	Blackish
Odor .....	Mild Odor
pH .....	Not applicable