

Description

Pour point depressants of EX series are polymeric polyesters used to improve cold flow properties of waxy crude oils. These additives reduce the agglomeration and promote the dispersion of wax crystals which appear in crude oils at low temperature. They resist the building of waxy deposits on the pipeline walls. In addition, such additives decrease the dynamic viscosity of crude oils at low temperatures and improve their pumpability.

Mechanism

Pour point depressant additives are polymers containing long chain with pendant side chains giving it a comb structure. The waxes crystallize with the side chains of the pour point depressants and get localized. This prevents them from forming a continuous three-dimensional network, thus resulting in a large free space, which is available for the liquid fraction of crude oil to flow freely. As a result of this, the pour point is reduced and the rheological properties are improved.

Typical specifications¹

Product name	Appearance @ 30°C	Specific gravity @ 30°C	Flash point (COC)	Brookfield viscosity @ 30°C	Solubility
EX 150	Colourless to Pale yellow viscous liquid (@ 40°C)	0,85 – 0,90	28°C	> 150 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water

¹ Specification is subject to change without notice.

EX 250	Colourless to Pale yellow viscous liquid (@ 40°C)	0,85 – 0,90	28°C	>150 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water
EX 350	Colourless to Pale brown viscous liquid	0,88 – 0,93 (@ 25°C)	28°C	> 250 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water
EX 450	Colourless to Pale brown viscous liquid	0,86 – 0,91	28°C	> 250 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water
EX 550	Yellow liquid (@ 40 °C)	0,85 – 0,90 (@ 35°C)	28°C	> 80 cps @ 40 °C	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water

EX 650	Yellow liquid	0,85 – 0,90	28°C	> 150 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water
EX 750	Clear brown liquid	0,90 – 0,95	28°C	> 250 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water
EX 850	Clear yellow to brown viscous liquid	0,88 – 0,93	28°C	> 250 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water
EX 950	Clear yellow to brown viscous liquid	0,88 – 0,93 (@ 25°C)	28°C	> 250 cps	Soluble in hydrocarbon & viscous liquid chlorinated solvents, insoluble in water

Treat ratios

Recommended treatment levels of 100 - 1000 ppm depending on the required pour point specifications of crude oil.

These additives can be also pumped into the pipeline by an injection module consisting of a high-pressure adjustable rate pump, flow meter and instrumentation. Additive treatment level shall be dependent on throughput requirements, fluid properties and pipeline hydraulics.

Advantages

- Minimizes wax deposition in storage tanks and pipelines
- Improves flow characteristics in the pipeline
- Decrease operating pressures
- Increase pipeline profits
- Obviating the need for extra stations and loops
- High activity, low viscosity
- Contains no metals, halogens or sulphur
- Completely organic and ash free

Handling & Storage

EX series PPD's are stable flow improvers and may be stored for several months at moderate temperatures away from flame or other sources of ignition. Do not take internally. Keep away from eyes. Normal precautions in handling organic chemicals should be observed. For further information and instructions read MSDS.