

# FlowSolve 110 Asphaltene Inhibitor

## Product Information

### Applications

FlowSolve 110 is a medium molecular weight polymeric dispersant formulated in a high flash point aromatic solvent.

FlowSolve 110 has been specifically developed to mitigate asphaltene flocculation and deposition in oil production operations e.g. in the reservoir, production wells and processing units, due to pressure drop or incompatible fluids.

FlowSolve 110 can be used in topside and downhole treatment programmes by continuous injection or specialised batch deployment treatment methods. The product can also be utilised in combination with specialist solvents for asphaltene deposit removal.

Typical treat rates range from 10 to 500 ppm dependant on the crude oil type and the severity of asphaltene deposition tendency. Laboratory testing should be conducted for individual oils to establish an optimum treatment regime.

### Features

- High performance asphaltene dispersant and inhibition characteristics
- Broad spectrum performance across a wide range of crude oil types
- Low viscosity, low pour point and non - shear sensitive liquid
- High temperature stability (>300 C) for downhole applications
- Low environmental impact for marine operations e.g. North Sea, Gulf of Mexico
- Suitable for additional formulation, blending or dilution to meet specific technical and operational requirements
- Long shelf life under recommended storage conditions
- Highly cost effective

### Physical Properties

Appearance	Visual	Clear, brown liquid
Polymer Content	wt%	50
Density @ 15 C	g/cm <sup>3</sup>	0.94
Viscosity @ 40 C	cSt	116
Viscosity @ 20 C	cSt	303
Viscosity @ 4 C	cSt	694
Pour Point	C	-33
Flash Point PMCC	C	62

These data are typical values and should not be considered as specifications.

### Other Information

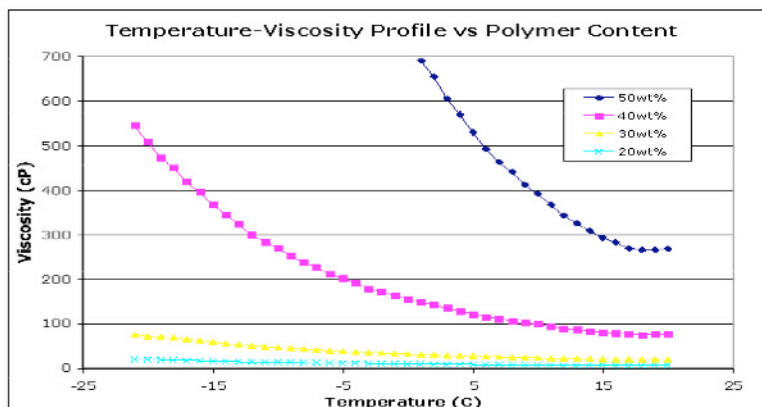
FlowSolve 110 is a member of a product range of asphaltene deposition control additive technologies. It is recommended that FlowSolve 112 and FlowSolve 113 should also be evaluated in asphaltene dispersant or asphaltene inhibitor testing programmes.

JD Horizons maintains Safety Data Sheets (SDS) for all FlowSolve® products. The SDS contains pertinent information required to protect employees and customers against any known health or safety hazards associated with FlowSolve® products. Always consult the relevant SDS before handling the product in the laboratory or in commercial scale operations.

For additional information not covered by this product bulletin contact JD Horizons directly or your local representative.

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## Additional Physical Property Data



## Environmental Data

This is a preparation and information is estimated based on component data and that of similar products.

Toxicity	Marine Invertebrate / Acartia Tonsa	EC 50 (48 hours)	1,131 mg/l
	Marine Alga / Skeletonema Costatum	EC 50 (72 hours)	> 1,000 mg/l
	Juvenile Turbot / Scophthalmus maximus	LC 50 (96 hours)	> 1,000 mg/l
	Sediment Reworker / Corophium Volutator	LC 50 (10 days)	> 10,000 mg/kg
Biodegradation	OECD 306	Polymer	24.6 %
		Solvent	52.9 %
Bioaccumulation	OECD 117	Polymer	logPo/w 3.6 - 5.1
		Solvent	logPo/w 3.6 - 5.2
UK CEFAS Certification (November 2010)			GOLD (No Substitution Warning)

## Transport, Packaging and Storage

Transport	See Safety Data Sheet for detailed information.
Packaging	Bulk road tankers/ISO tanks (approx. 20 mt capacity)
	1,000 litre Schutz type IBC and standard 205 litre steel drums
Storage	Store in a dry, well ventilated area, preferably a covered warehouse facility
	Ensure drum and bulk container seals remain intact until ready for use
	Nitrogen blanket recommended for bulk storage facilities
	Recommended storage temperature range from 10 to 30 C
Shelf Life	24 months

Additional information regarding transport, storage and handling is included in the FlowSolve 110 SDS.

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