



Description

Sasol's HF®-1000 Solvent is a synthetic high-performance, low-environmental impact alternative to diesel fuel and highly branched isoparaffinic mineral oils. HF®-1000 Solvent is a value-added alternative in high performance industrial applications because of its low toxicity, improved biodegradability over diesel, and the absence of polynuclear aromatics. HF®-1000 Solvent is BTEX free. HF®-1000 Solvent is a blend of paraffins, olefins, and oxygenates which combine to make a low viscosity, pale-yellow liquid with a flashpoint of >175°F (81°C)

Solvent Applications

- Oilfield: drilling fluids, stimulation fluids (slurry concentrates)
- Mining: collector promoters, frother blends, various flotation aids
- I&I: solvent base for cleaners
- Construction: concrete mold release
- Agricultural: emulsifiable

Contact Information

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Composition and Physical Properties

The properties below may vary slightly from lot to lot due to normal manufacturing variability.

Property	Method	Typical Value	
Aniline Point, °C (°F)	ASTM D-611	66 (151)	
Boiling Point, °C (°F)	IBP	213 (416)	
	5%	224 (436)	
	95%	346 (655)	
Average Molecular Weight (amu)	API	210 – 220	
Color, APHA		< 100	
Specific Gravity, @ 20°C (68°F)	ASTM D-287	0.799	
API Gravity	ASTM D-287	47	
Flash Point, °C (°F) (TAG)	ASTM D-56	≥81 (≥178)	
Aromatics - BTEX		Non detectable ¹	
PAH - Polyaromatic Hydrocarbon	EPA 1654 "MI Modified"	Non detectable ²	
Pour Point, °C (°F)	ASTM D-97	-14 (6.8)	
Lubricity (Baroid benchtop meter)		0.111	
Vapor Pressure, mm Hg @ 20°C		<0.3	
Viscosity, cSt	ASTM D-445	20°C	3.23
		40°C	2.20
Autoignition Temp, °C (°F)	ASTM E-659	248 (478)	
VOC	EPA Method 24	74	
Sulfur, ppm	UV	<0.1	

1 – detection limit 43 ppb

2 - detection limit 0.01mg/g

Environmental Profile: Aquatic Toxicity

HF®-1000 Solvent is only slightly soluble in water (~15 ppm). HF®-1000 Solvent shows low aquatic toxicity to freshwater marine species. For example, tests on mysid shrimp show an LC₅₀ on the order of 257,000 ppm for No. 7 drilling fluid spiked with 3% HF®-1000 Solvent (see Table 2).

When HF®-1000 Solvent is used in conjunction with low toxicity esters in oil-field applications, the combined material will meet the leptochirus toxicity and anaerobic biodegradation requirements set by the EPA for specific oilfield applications (see Table 2).

Table 2. Environmental Properties of HF®-1000 Solvent

Test	Organism	HF®-1000	50:50 HF®-1000/Esters	Pass Level	Test Method
Acute, Static 96-Hour Toxicity Test	<i>Mysidopsis bahia</i>	257,000 ppm LC50*	315,200 ppm LC50**	> 30,000 ppm LC50	US EPA. FR 58(41): 12507-12513
Acute, Static 10-Day Sediment Toxicity Test	<i>Leptocheirus plumulosus</i>	-	0.6	(Ratio ≤ 1.0)	ASTM E 1367
275-day closed bottle Anaerobic Biodegradation Test for Base Fluids	N/A	-	0.8	Ratio ≤ 1.0	Modified ISO 11734
Acute Static 48 Hour LC ₅₀	<i>D. pulex</i>	100% of the water accommodated fraction (WAF = 100,000ppm)	-	N/A	US EPA-821-R-02-012: Section 9, Method 2021
Acute Static Renewal 96 Hour LC ₅₀	<i>P. promelas</i>	25.4% of the water accommodated fraction (WAF = 100,000ppm)	-	N/A	US EPA-821-R-02-012: Section 9, Method 2000

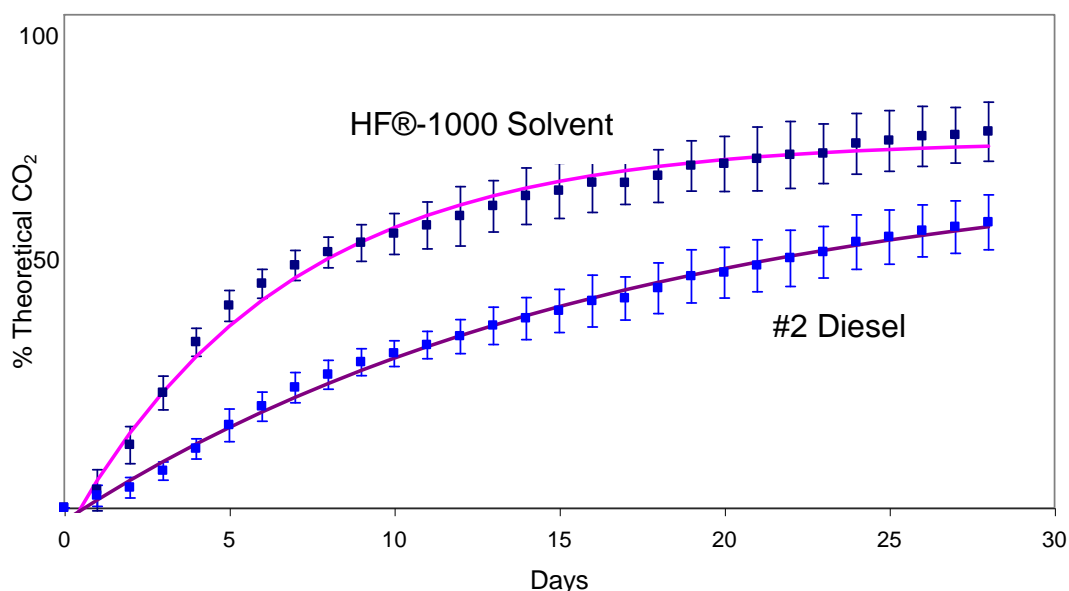
*Testing done on Generic No. 7 drilling fluid with 3% HF®-1000 Solvent

**Testing done on Generic No. 7 drilling fluid with 3% of a 50:50 blend of HF®-1000 Solvent and Esters

Environmental Profile: Aerobic Biodegradation

Biodegradation tests run in accordance with OECD 301-F guidelines show that the HF®-1000 Solvent will exhibit >60% degradation by day 28. When tested together, the HF®-1000 Solvent shows a more rapid and extensive biodegradation than the #2 diesel fuel.

Figure 1. Biodegradation of HF®-1000 Solvent and #2 Diesel Fuel by OECD 301-F Guidelines.



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For detailed safety and handling information regarding these products, please refer to the respective Sasol North America Material Safety Data Sheet.