

# BLACK MAGIC SFT

Lower nonproductive time with a sacked fishing tool that can be prepared at the rig site

## Applications

- Stuck pipe

## Features and benefits

- Single-sack solution with small footprint
  - Builds a complete oil/mud/spotting fluid that can be prepared at the rig site
  - Provides all properties required for suspension of weight material
  - Can easily be weighted to 18.0 lb/gal (2.16 sg)
  - Stores more conveniently than compounded liquid drum products
- Reduced risk and losses
  - Minimizes nonproductive time
  - Reduces unplanned sidetracks
  - Lessens wear and tear on drilling equipment (jarring)
  - Avoid lost tool

The **BLACK MAGIC™ SFT spotting fluid** from Baker Hughes is a dry, powdered mixture of optimum-sized air-blown asphalt, lime, fatty acids, and dispersants for building variable-density spotting fluids used for stuck pipe.

After the BLACK MAGIC SFT fluid is spotted to the location of the differential sticking, circulation stops, and the BLACK MAGIC SFT fluid begins working to remove the filter cake through wetting and flocculation. After the filter cake is removed, the BLACK MAGIC SFT fluid deposits a thin tough wall cake to minimize differential pressures. In addition, the BLACK MAGIC SFT fluid lubricates the hole to reduce torque and drag, allowing the pipe to be jarred free so that drilling can resume.

## Determining pill volumes

The amount of BLACK MAGIC SFT fluid to be used for freeing differentially stuck pipe should be based on building enough volume to cover the bottomhole assembly in the annulus. In addition, approximately 10.0 to 15.0 bbl (1.19 to 1.79 m<sup>3</sup>) of BLACK MAGIC SFT fluid should be left in the pipe. While working to free the differentially stuck pipe, 0.5 to 1.0 bbl (0.060 to 0.12 m<sup>3</sup>) of BLACK MAGIC SFT fluid should be pumped every 30 minutes.

## Mixing procedure

1. Clean mixing pit and flush pumps and lines.
2. Add required amount of base oil.
3. Add BLACK MAGIC SFT fluid through the hopper with agitation.
4. Add water and agitate until smoothly blended.

5. Add the Baker Hughes **MIL-BAR™ weighting agent** and agitate until a smooth blend.
6. To increase viscosity, add more BLACK MAGIC SFT fluid.
7. To decrease viscosity, add more base oil.

## Spotting procedure

1. Spot the leading edge of the pill at the stuck point, leaving 24 bbls (2.86m<sup>3</sup>) in the drill string.
2. Allot 30 minutes of soak time prior to working pipe.
3. Pull tension and torque the pipe every 30 minutes.
4. After working the pipe, pump 0.5 to 1.0 bbl (0.06 to 0.12 m<sup>3</sup>) of the pill every 30 to 60 minutes.
5. Continue this cycle until the pipe becomes free.

## Safe handling

### recommendations

Use normal precautions for employee protection when handling chemical products. See Safety Data Sheet (SDS) prior to use.

## Packaging

BLACK MAGIC SFT is packaged in 55-lb (25-kg) multi-walled bags.

Typical properties	
Appearance	Gray powder
Hygroscopic	No
Specific gravity	1.04

The tables below show the recommended concentrations of products used to build the spotting fluid for different mud weights. The weighting material could be MIL-BAR or MIL-CARB additives.

<b>MIL-BAR (Based on 100-lb<sub>m</sub> sacks)</b>									
Density, lb <sub>m</sub> /gal	Density, kg/m <sup>3</sup>	Base oil, bbl	Base oil, m <sup>3</sup>	BLACK MAGIC SFT, sacks	BLACK MAGIC SFT, kg	Water, bbl	Water, m <sup>3</sup>	MIL-BAR, 100-lb <sub>m</sub> sacks	MIL-BAR, kg
Unwtd. (7.5)	898.7	70	11	136	3393	12	1.88	0	0
9.0	1078.4	66	10	128	3193	11	1.76	81	3674
10.0	1198.3	64	10	124	3093	10	1.64	135	6123
12.0	1437.9	61	10	113	2819	7	1.08	244	11068
14.0	1677.6	56	9	102	2545	6	0.99	350	15876
16.0	1917.2	54	9	91	2270	3	0.45	459	20820
18.0	2156.9	48	8	81	2021	3	0.40	565	25628

<b>MIL-CARB (Based on 50-lb<sub>m</sub> sacks)</b>									
Density, lb <sub>m</sub> /gal	Density, kg/m <sup>3</sup>	Base oil, bbl	Base oil, m <sup>3</sup>	BLACK MAGIC SFT, sacks	BLACK MAGIC SFT, kg	Water, bbl	Water, m <sup>3</sup>	MIL-CARB, 50-lb <sub>m</sub> sacks	MIL-CARB, kg
8.0	958.6	67	11	136	3393	11	1.80	64	1451
9.0	1078.4	62	10	124	3093	11	1.69	190	4309
10.0	1198.3	61	10	113	2819	7	1.08	324	7348
11.0	1318.1	56	9	102	2545	6	1.00	448	10160
12.0	1437.9	54	9	91	2270	3	0.46	578	13109
13.0	1557.7	49	8	81	2021	3	0.41	702	15921