

PIPE-LAX ENV WH

PIPE-LAX ENV WH* is a water-dispersible, low-toxicity spotting fluid designed to free differentially stuck pipe by penetrating between the wall cake and drillstring.

PIPE-LAX ENV WH spotting fluid also offers strong metal wetting characteristics and will act as a lubricant after added into the active system.

Typical Physical Properties

Physical appearance	Dark-brown liquid
Specific gravity.....	0.9-1.3 g/ml
Flash point	190° F (88° C)
Solubility (water)	Insoluble, slightly dispersible

Applications

PIPE-LAX ENV WH additive is a single-package, low-toxicity spotting fluid. It can be used for environmentally sensitive offshore and onshore wells where a low-toxicity, non-oil-base spotting fluid is specified.

Success in freeing differentially stuck pipe is greatest when the spotting fluid is applied as soon as possible after the pipe becomes stuck. A fluid that can be mixed and spotted quickly often frees the drillstring before fishing operations are required. Because PIPE-LAX ENV WH additive is a single package, liquid blend made for fast mixing, it is ideal for spotting situations.

PIPE-LAX ENV WH additive contains no hydrocarbons, is compatible with most mud systems and can be used either weighted or unweighted in wells with differentially stuck pipe. If a density greater than 9 lb/gal (1.08 s.g.) is required, the PIPE-LAX ENV WH spot should be weighted with M-I BAR*, M-I WATE* or FER-OX* weighting materials. If a density less than 9 lb/gal (1.08 s.g.) is required, PIPE-LAX ENV WH additive should be used "neat", without dilution. Water should not be added to a PIPE-LAX ENV WH slurry for any reason. This causes an undesirable increase in viscosity.

After being used as a spotting fluid, up to 3% v/v by volume PIPE-LAX ENV WH additive can be incorporated into the active system to reduce torque and drag and to reduce the possibility of differential sticking.

Mixing Procedure

1. Calculate the volume of spotting fluid required and add at least 10% to compensate for any washout. In addition, include 25 bbl (3.97 m³) to remain in the drill string.
2. In a clean, dry tank, mix the required amount of PIPE-LAX ENV WH additive determined from the Mixing Formulation Chart. When using PIPE-LAX ENV WH additive supply adequate ventilation when opening containers and in enclosed areas. Although some separation of materials can occur in the containers, transferring the product into a pit blends the components, and product performance will not be affected.
3. If the slurry is to be weighted, add the correct amount of M-I BAR*, M-I WATE or FER-Ox* weighting materials until thoroughly blended.
4. Displace the slurry to the zone where the differential sticking is suspected. Leave 25 bbl (3.97 m³) inside the pipe to displace at an hourly rate into the openhole.
5. Work the pipe while the spotting fluid is soaking. Pump 0.5 - 1 bbl (0.08 – 0.16 m³) every ½ hour to assure fresh soak solution is being displaced into the openhole.
6. Allow at least 24 hr for the PIPE-LAX ENV WH additive to free stuck pipe. Generally, unweighted spotting fluids are effective in a shorter period of time.

Note: When using PIPE-LAX ENV WH additive in deviated wells with angles greater than 35°, the spotting fluid should be weighted 0.5 lb/gal (0.06 s.g.) heavier than the original fluid in the well to encourage the spotting fluid to migrate to the lower side of the hole.

Density Lb/gal (s.g.)	Mixing Formulation (per final barrel or per final m ³)					
	PIPE-LAX ENV WH bbl (m ³)	M-I BAR lb (kg)	PIPE-LAX ENV WH bbl (m ³)	FER-Ox lb (kg)	PIPE-LAX ENV WH bbl (m ³)	M-I WATE lb (kg)
8.5 (1.0)	1.000 (0.16)	-	1.000 (0.16)	-	1.000 (0.16)	-
9.0 (1.0)	0.982 (0.155)	28 (12.7)	0.985 (0.155)	26 (11.8)	0.981 (0.155)	28 (12.7)
10.0 (1.2)	0.943 (0.15)	83 (37.6)	0.955 (0.152)	79 (35.8)	0.942 (0.15)	84 (38.1)
11.0 (1.3)	0.905 (0.145)	139 (63)	0.925 (0.147)	132 (59.9)	0.903 (0.145)	140 (63.5)
12.0 (1.4)	0.868 (0.14)	194 (88)	0.895 (0.142)	184 (83.5)	0.864 (0.14)	196 (88.9)
13.0 (1.5)	0.829 (0.13)	250 (113.4)	0.864 (0.137)	238 (108)	0.825 (0.13)	252 (114.3)
14.0 (1.6)	0.793 (0.125)	304 (137.9)	0.835 (0.133)	290 (131.5)	0.786 (0.125)	308 (139.7)
15.0* (1.8)	0.754 (0.12)	361 (163.7)	0.804 (0.128)	343 (155.6)	0.747 (0.12)	363 (164.7)
16.0* (1.9)	0.717 (0.115)	415 (188.2)	0.774 (0.123)	395 (179.2)	0.708 (0.112)	419 (190)
17.0* (2.0)	0.680 (0.11)	471 (213.6)	0.744 (0.118)	448 (203.2)	0.669 (0.106)	475 (215.5)
18.0* (2.1)	0.642 (0.10)	526 (238.6)	0.714 (0.114)	500 (226.8)	0.630 (0.10)	531 (240.9)

Higher density PIPE-LAX ENV WH additive formulations can develop high viscosity and become difficult to pump. Even small amounts of water contamination can aggravate this situation. For densities greater than 15.0 lb/gal (1.80 s.g.), LUBE 945 material should be added to PIPE-LAX ENV WH additive formulations to reduce the final viscosity, then weighted to achieve the desired density. Suggested dilution concentrations are as follows:

Density	LUBE 945 (% by volume)
15 – 16 (1.8 – 1.92 s.g.)	5
16 – 17 (1.92 – 2.04 s.g.)	10
17 – 18 (2.04 – 2.16 s.g.)	15
> 18	20

Advantages

- Effective soak solution that quickly frees differentially stuck pipe
- Can be easily weighted with M-I BAR, M-I WATE or FER-OX products
- Can be incorporated into most water-base mud systems
- Contains no hydrocarbons and is water dispersible
- Aids in lubrication and reduces the coefficient of friction, thus improving the torque- and drag-reduction characteristics of the mud
- Excellent stability at downhole temperatures and pressures

Limitations

- Requires clean, dry tank for mixing
- Water contamination results in an undesirable increase in viscosity

Toxicity and Handling

Bioassay information is available upon request.

Handle as an industrial chemical, wearing protective equipment and observing the precautions described in the Material Safety Data Sheet (MSDS).

Packaging and Storage

PIPE-LAX ENV WH additive is available in bulk or 55 gal (208 l) drums.

Store in a dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.



This information is supplied solely for informational purposes and M-I SWACO makes no guarantees or warranties, either expressed or implied, with respect to the accuracy and use of this data. All product warranties and guarantees shall be governed by the Standard Terms of Sale. Nothing in this document is legal advice or is a substitute for competent legal advice.

P.O. Box 42842
Houston, Texas 77242-2842
www.miswaco.slb.com
Email: questions@miswaco.slb.com