Pipe Pro XT™ lubricant is a drilling mud/fluid additive specifically formulated for cold temperature. It is recommended when torque, drag, and the possibilities for differential sticking are present. The viscosity of Pipe Pro XT™ is tailored to assist in metal to metal friction situations and can also be used as a spotting fluid for stuck pipe applications. It is highly miscible in water allowing for penetration to the point of frictional resistance quicker.

**Typical Performance**

- Outstanding, highly-effective lubricant for horizontal well bores
  - Reduces API filtration and increases the EP film strength of the base fluid as the concentration of the lubricant increases.
  - Reduces corrosivity by 57 to 64% in base muds
  - Reduces friction between all of the components downhole
  - Torque and Drag are common with operations in directional and crooked holes. It can reduce and minimize the torque and friction.
  - Helps Prevent Stuck Pipe Due To Mud Ring
  - Drill bits and drill collars are preserved and noticeably more productive when Pipe Pro is present in the drilling mud

**Applications**

The recommended concentration range of Pipe Pro XT™ is 1 to 3% by volume, or 3.5 to 10.5 lbs/bbl (10 to 30 kg/m³), depending on the fluid density, desired reduction in coefficient of friction, and the mud system.

- Higher concentrations of Pipe Pro XT™ may be required for mud densities greater than 12 lb/gal (1.44 sg)
- Pipe Pro XT™ should be added slowly directly into the mud system by maintaining a small constant stream wherever there is good agitation.

Safety: Always refer to the Safety Data Sheet for detailed information on shipping, handling, storage, and use. Important: The information provided herein is believed to be accurate and reliable, but is presented without guarantee on the part of ViChem. Further, nothing contained herein shall be taken as an inducement to violate any patent rights.

**Packaging, Handling & Storage**

- Packaging: Bulk (tank truck, flexitank, railcar), 275 gal tote, 55 gal. drum, 5 gal bucket. Prices vary upon packaging type.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Coefficient of Friction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gel Mud</td>
<td>0.229</td>
</tr>
<tr>
<td>3% Pipe Pro XT</td>
<td>0.032</td>
</tr>
<tr>
<td>Lube A</td>
<td>0.15</td>
</tr>
<tr>
<td>Lube B</td>
<td>0.12</td>
</tr>
</tbody>
</table>