Royal HD2 downhole lubricant is made with highly refined mineral base oil and has carriers designed to withstand even the toughest environments in the drilling industry. This lubricant is well suited as a replacement for diesel oil and other products that are not environmentally friendly for oilfield drilling applications, providing non-polluting, high performance and low toxicity. Unlike other downhole fluids, Royal’s HD2 clean drilling fluid meets FDA requirements for purity.

Royal HD2 protects equipment in high pressure applications, and can handle both extreme low as well as high temperatures. This lubricant has low total aromatics and is water white for purity.

**Product Features:**
- BTEX free formula (No Benzene, Toluene, Ethylbenzene, Xylene) [ ]
- Consistent product performance
- Minimal toxins and aromatics
- Low pour point
- Reduced pump failures

**Customer Benefits:**
- Reduces equipment failure and downtime
- Minimizes exposure to hazardous chemicals
- Great value compared to most synthesized downhole fluids

**Applications:**
- This fluid can be used for a variety of down hole applications including friction reducers, gelled fracturing, viscosity modifying emulsifiers, carriers for suspension agents and slurry formations.

**Viscosity @ 40°C**

| Royal MFG CO LP, P.O. Box 693, Tulsa, OK 74101 | 918-584-2671 | www.royalmfg.com | Prod Code 600/09/9/2014 | 1 |
Typical Properties

Royal HD2

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity @ 100°C</td>
<td>2.56</td>
<td>D445</td>
</tr>
<tr>
<td>Specific Gravity, @15.5 °C</td>
<td>0.8618</td>
<td>D1298</td>
</tr>
<tr>
<td>Color (Saybolt)</td>
<td>+25</td>
<td>D1500</td>
</tr>
<tr>
<td>Pour Point, °C</td>
<td>-35 °C</td>
<td>D5950</td>
</tr>
<tr>
<td>Aromatic Content, %wt.</td>
<td>&lt; 2.0</td>
<td>UV</td>
</tr>
<tr>
<td>Flash Point, PMCC, °C</td>
<td>180 °C</td>
<td>D92</td>
</tr>
<tr>
<td>BTEX</td>
<td>Nil</td>
<td>-</td>
</tr>
</tbody>
</table>

These properties are typical of the current production. Variations that do not affect product performance are to be expected depending on blending and manufacturing locations. The information above is subject to change without notice.

Health and Safety:
This product is unlikely to have any adverse health implications or safety hazards when used for its intended application. Avoid contact with skin, use resistant gloves when handling used oil. If skin comes in contact wash immediately with soap and water. For complete information on safe handling and product characteristics please refer to the Material Safety Data Sheet (MSDS) found on our website. [www.royalmfg.com](http://www.royalmfg.com) or call (918)-584-2671.

Packaging options:

- 55 Gal Drums
- 275/330 Gal Totes
- >2000 Gal Bulk