VERSATROL M1
Blended asphalitic resin

APPLICATIONS
- Sealing low-pressure and depleted formations

ADVANTAGES
- Reduces HPHT fluid loss in oil-based mud systems
- Enhances emulsion and thermal stability

LIMITATIONS
- Environmental restrictions concerning the use of oils and oil-based fluids should be considered since VERSATROL M1* blended asphalitic resin is used in conjunction with oil
- Temperature limitation of 350 degF [177 degC]

VERSATROL M1 resin reduces the HPHT fluid loss in all oil-based systems. It helps improve the overall emulsion stability and thermal stability characteristics of most oil-based formulations. VERSATROL M1 resin also increases viscosity, especially at lower temperatures.

VERSATROL M1 resin recommended concentrations range from 2 to 8 lb/bbl [5.7 to 22.8 kg/m³], with occasional daily additions in the range from 0.25 to 0.5 lb/bbl [0.71 to 1.43 kg/m³]. High-temperature situations and special applications may require higher concentrations, as much as 10 lb/bbl [28.5 kg/m³].

When used in the initial formulation, it is recommended to add VERSATROL M1 resin last. For existing systems, the product may be added at any time, mixed slowly during at least one complete circulation. Pilot testing is advised to determine the necessary treatment to achieve the desired results and to observe the change in mud properties.

Toxicity and handling
Bioassay information is available upon request. Handle as an industrial chemical, wearing protective equipment and observing the precautions as described in the SDS.

Packaging and storage
VERSATROL M1 resin is generally packaged in 50-lb [22.7 kg] and 55.1-lb [25 kg], multiwall paper bags. Keep containers tightly closed in a dry, cool, and well-ventilated place.

Typical Physical Properties

<table>
<thead>
<tr>
<th>Physical property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical appearance</td>
<td>Brown-black powder</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>2.19</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;590 degF [&gt;310 degC]</td>
</tr>
<tr>
<td>Softening point</td>
<td>&lt;400 degF [&lt;204 degC]</td>
</tr>
</tbody>
</table>