PRODUCT DATA SHEET

ECOPOL-IRA-200
Iron Reducing Agent

PRODUCT DESCRIPTION
ECOPOL-IRA-200 is an iron reducing agent used in acidizing or low pH fluids to control solubilized iron in the presence of asphaltenes, thus reducing the risk of iron/asphaltene induced sludge caused by ferric iron. ECOPOL-IRA-200 is designed to achieve a complete reduction of the ferric iron to the ferrous state.

PHYSICAL & CHEMICAL PROPERTIES
Specific Gravity: 1.31
Appearance: Clear to Pale Yellow Liquid
Ionic Charge: Non-ionic
Odor: Slightly Ammonia

PRODUCT ADVANTAGES
ECOPOL-IRA-200 is nonionic in nature, thus making it compatible with most additives and surfactant packages used during the acidizing process. ECOPOL-IRA-200 is designed in a manner that over-treatment with the product would not pose a detrimental effect as would be the case with certain other alternative reducing agents. ECOPOL-IRA-200 iron reducing agent is designed to be lower in cost than other products used in the industry. Unlike other mercaptan based iron reducers, Ecopol-IRA-200 does not require and addition catalyst to be added.

APPLICATION
Below are suggested loadings in 15% Hydrochloric Acid.

<table>
<thead>
<tr>
<th>Ecopol-IRA-200 Loading</th>
<th>Ferric Iron (Fe^{3+}), ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>3gpt</td>
<td>1250</td>
</tr>
<tr>
<td>12gpt</td>
<td>5000</td>
</tr>
</tbody>
</table>

This information relates only to the material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user’s responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer any warranty against patent infringement.