ELIXORE
Aliphatic Diluents for metal extraction

Taking hydrometallurgy to new levels of purity
Taking into account both environmental responsibility and cost efficiency, hydrometallurgy is the preferred route for extracting metals from ores and other sources. To ensure optimal performance in terms of operator safety, process efficacy and reliability, Total’s Special Fluids division has designed the Elixore range, perfectly defined aliphatic diluents dedicated to liquid-to-liquid extraction processes.

**ELIXORE**

**High flash point and low viscosity:** selecting the right combination

The Elixore range offers a comprehensive choice of perfectly inert, colourless and odourless fluids. Each product gives you access to the specification sets you need to reach the optimal balance between the desired level of efficacy (viscosity) and the necessary level of operator safety (high flashpoint).

**Elixore 180**’s low viscosity is an efficient solution for operations requiring fast phase separation. **Elixore 200 and 205** offer a good balance between low viscosity and high flashpoint. **Elixore 230 and 250**’s high flashpoint and low vapour pressure are often chosen to reduce diluent loss due to evaporation.

**KEY FEATURES**
- High flashpoint
- Narrow distillation range
- Low viscosity
- Low pour points
- Ultra low aromatic contents

**Extraction efficiency based on good selectivity**

An independant R&D program consisted in comparing the copper over iron selectivity by using Elixore and classical aromatic diluent in the same solvent formulation (extractant + diluent). Aromatic free Elixore product showed great performances compared to aromatic diluent.

**Highly stable products for sustainable performance**

Perfectly defined and rigorously constant, the Elixore range gives you access to highly reliable and stable solutions. Moreover, their very low aromatic content makes them specially resistant to organic degradation. Their outstanding properties make them prime choice diluents in the extraction of valuable and/or sensitive metals such as Aluminium, Nickel, Copper, Uranium, Cobalt and Zinc.

**Making a safer working environment**

Elxore products have low vapour pressure, ultra low aromatic and sulfur content and thus offer the safest environment for working operators.
Taking into account both environmental responsibility and cost efficiency, hydrometallurgy is the preferred route for extracting metals from ores and other sources. To ensure optimal performance in terms of operator safety, process efficacy and reliability, Total’s Special Fluids division has designed the Elixore range, perfectly defined aliphatic diluents dedicated to liquid-to-liquid extraction processes.

**ELIXORE**

**High flash point and low viscosity:** selecting the right combination

The Elixore range offers a comprehensive choice of perfectly inert, colourless and odourless fluids. Each product gives you access to the specification sets you need to reach the optimal balance between the desired level of efficacy (viscosity) and the necessary level of operator safety (high flash point).

**Elixore 180**’s low viscosity is an efficient solution for operations requiring fast phase separation. **Elixore 200** and **205** offer a good balance between low viscosity and high flashpoint. **Elixore 230** and **250**’s high flashpoint and low vapour pressure are often chosen to reduce diluent loss due to evaporation.

**KEY FEATURES**

- High flashpoint
- Narrow distillation range
- Low viscosity
- Low pour points
- Ultra low aromatic contents

### Properties Units Methods Elixore 180 Elixore 200 Elixore 205 Elixore 230 Elixore 250

<table>
<thead>
<tr>
<th>Properties</th>
<th>Units</th>
<th>Methods</th>
<th>Elixore 180</th>
<th>Elixore 200</th>
<th>Elixore 205</th>
<th>Elixore 230</th>
<th>Elixore 250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point °C</td>
<td>°C</td>
<td>ASTM D</td>
<td>64 (155)</td>
<td>77 (171)</td>
<td>96 (205)</td>
<td>111 (244)</td>
<td>119 (246)</td>
</tr>
<tr>
<td>Aromatic content</td>
<td>ppm</td>
<td>UV</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Sulphur content</td>
<td>ppm</td>
<td>ASTM D25443</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Vapour pressure at 20°C</td>
<td>kPa</td>
<td>calculated</td>
<td>0.038</td>
<td>0.016</td>
<td>0.016</td>
<td>0.002</td>
<td>0.0003</td>
</tr>
<tr>
<td>Viscosity at 20°C</td>
<td>cSt</td>
<td>ASTM D</td>
<td>2.7</td>
<td>2.4</td>
<td>3.2</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Viscosity at 40°C</td>
<td>cSt</td>
<td>ASTM D</td>
<td>1.4</td>
<td>1.7</td>
<td>1.7</td>
<td>2.4</td>
<td>2.4</td>
</tr>
</tbody>
</table>

### Extraction efficiency based on good selectivity

An independent R&D programme consisted in comparing the copper over iron selectivity by using Elixore and classical aromatic diluent in the same solvent formulation (extractant + diluent). Aromatic free Elixore product showed great performances compared to aromatic diluent.

### Highly stable products for sustainable performance

Perfectly defined and rigorously constant, the Elixore range gives you access to highly reliable and stable solutions. Moreover, their very low aromatic content makes them specially resistant to organic degradation. Their outstanding properties make them prime choice diluents in the extraction of valuable and/or sensitive metals such as Aluminium, Nickel, Copper, Uranium, Cobalt and Zinc.

### Making a safer working environment

Elixore products have low vapour pressure, ultra low aromatic and sulfur content and thus offer the safest environment for working operators.
ELIXORE
Aliphatic Diluents for metal extraction

Taking hydrometallurgy to new levels of purity

Total
SPECIAL FLUIDS DIVISION
24, cours Michelet - La Défense 10 - 92069 Paris La Défense - Cedex
www.totalspecialfluids.com