General

Pionier 4281 is a medical paraffinic mineral White Oil containing aromates in trace elements. It is colourless, odourless, and clear.

Safety instructions

- **Swallowing and inhalation:** Can be fatal after swallowing and intrusion into respiratory system. When swallowing the product may be absorbed in the lungs due to its low viscosity and lead within a short time to develop serious lung damage. (The patient must be monitored medically for 48 h.) Immediately contact local or national Poison Information Center (Germany: +49-551-19240) or doctor!
- **Don’t effect vomiting!**
- For further information refer to the Material Safety Data Sheet.
- Disposal according to governmental regulations.
- No dangerous good in terms of transport regulations.

Application

Pionier 4281 can be used with RITTER Drum-type Gas Meters made out of PVC, PVDF and Stainless Steel.

Incompatible substances

- **Not suitable for measurements with oxygen.**
- Contact with strong oxidising agents (e.g. peroxides, chromates) can lead to fire hazard.
- Mixing with nitrates or other oxidising agents (e.g. chlorates, perchlorates, liquid oxygen) can create an explosive compound.

Advantages

- Use under 0°C.
- Less evaporation than water due to its lower vapour pressure.
- Greater stability of the Packing Fluid level.
- Improvement in the repeatability of measurement results.
- Reduction in the required frequency of Packing Fluid level monitoring.
- The gas remains dry.
- In general, a lower chemical reactivity with water.

Solubility of gases

No data available from manufacturer.
## Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Temperature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity</td>
<td>20 °C</td>
<td>6.5 cSt (=mm²/sec)</td>
</tr>
<tr>
<td></td>
<td>40 °C</td>
<td>4.0 cSt</td>
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<tr>
<td>Density</td>
<td>15 °C</td>
<td>0.81 g/ml</td>
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<tr>
<td>Vapour pressure</td>
<td>20 °C</td>
<td>&lt; 0.1 mbar</td>
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<tr>
<td>Pour point</td>
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<td>-9 °C</td>
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<tr>
<td>Flashpoint</td>
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<td>115 °C</td>
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<tr>
<td>Thermal expansion coefficient</td>
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<td>0.0007 K⁻¹</td>
</tr>
<tr>
<td>Appearance</td>
<td></td>
<td>Colourless, odourless, and clear</td>
</tr>
</tbody>
</table>

V 1.0 / Rev. 2020-01-10 / Subject to alterations.

The most recent version of this data-sheet can be found at https://www.ritter.de/en/data-sheet/pionier-4281/

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