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| Ritter | **Packing Fluid for Ritter Gas Meters**<br>**CalRiX**<br>**Data Sheet** | **01.39**<br>V 1.0<br>Rev. 10/03 |

## 1. General

CalRiX is a completely synthetic fluid on a fluorine base. It is of low molecular weight, colourless, clear and odourless.

More detailed information about the chemical composition and molecular structure of this fluid can be obtained upon request.

## 2. Application

CalRiX can be used with all Ritter Drum-type Gas Meters (Wet-type Gas Meters). Because CalRiX is completely inert to most gases including oxygen, it can be used as a Packing Fluid when water or paraffin oil are not suitable. For example, when the gas needs to remain dry, and when the gas is highly reactive to water or paraffin oil. It is appropriate for use with such gases as:

| | |
|---|---|
| Butane | Hydrogen Fluoride |
| Carbon Dioxide | Methane |
| Carbon Tetrafluoride | Nitrogen |
| Carbon Tetrachloride | Nitrogen Trichloride |
| Chlorine | Oxygen |
| Deuterium | Phosphine |
| Fluorine | Propane |
| Helium | Silane |
| Hydrogen | Sulphur Hexafluoride |
| Hydrogen Chloride | |

## 3. Advantages

- Extremely resistant even against highly aggressive gases because of CalRiX's fluorine base,
- less evaporation than water due to its lower vapour pressure, resulting in greater stability of the Packing Fluid level and in more consistent measurement result,
- very smooth rotation of the measuring drum in the Gas Meter because of CalRiX's high density and low surface tension,.

## 4. Properties

| | | | | |
|---|---|---|---|---|
| **Viscosity:** | 20 | °C | 2.7 | cSt (=mm²/sec) |
| | 100 | °C | 0.7 | cSt |
| **Density:** | 20 | °C | 1.80 | g/ml |
| | 100 | °C | 1.64 | g/ml |
| **Vapour pressure:** | 20 | °C | 0.4 | mbar |
| | 100 | °C | 30.8 | mbar |
| | 120 | °C | 65.6 | mbar |
| **Working Temp. Range**: | -50 | °C | to 170 | °C |
| **Boiling Point:** | 200 | °C | | |
| **Pour point:** | -85 | °C | | |
| **Solubility of Water:** | 14 | ppm | | |
| **Solubility of Air:** | 26 | cm³ gas per 100 cm³ liquid | | |

**Volatility:** 34.4 % in 22 hours at 66°C
**Appearance:** Clear, odourless, colourless fluid

## 5. Solubility of Gases (Bunsen coefficient at room temperature)

| | |
|---|---|
| Butane | 8.5 |
| Boron Trichloride | 13.1 |
| Boron Trifluoride | 0.22 |
| Carbon Dioxide | 1.2 |
| Carbon Tetrachloride | 52.6 |
| Carbon Tetrafluoride | 0.68 |
| CFC 114 | 14.9 |
| CFC 12 | 4.25 |
| CFC 133a | 13.9 |
| CFC 134a | 4.7 |
| CFC 21 | 13.1 |
| CFC 22 | 4.86 |
| Chlorine | 3.19 |
| Deuterium | 0.10 |
| Esafluoroethane | 2.12 |
| Fluorine | 0.20 |
| Helium | 0.08 |
| Hydrochloric acid | 0.806 |
| Hydrogen | 0.10 |
| Methane | 0.17 |
| Nitrogen | 0.19 |
| Nitrogen Trichloride | 0.83 |
| Oxygen | 0.29 |
| Phosphine | 0.67 |
| Propane | 3.8 |
| Silane | 0.36 |
| Sulphur Hexafluoride | 3.5 |

The Bunsen coefficient [N ml/ml] is the volume of gas, reduced to Normal condition (1013 mbar, 0°C), dissolved in the volume unit of fluid.