

Product Data Sheet

DIAION™ USMN1

DIAION™ USMN1 is a nuclear grade mixed resin with strongly acidic cation exchange resin, DIAION™ UBKN1, and strongly basic anion exchange resin, DIAION™ UBAN1. It is used for cleanup system in primary circuit, cleanup system SFP, radwaste, etc.

Product

| | | |
|---------------------------|--|--|
| Grade Name | DIAION™ USMN1 | |
| Type | Mixed | |
| Matrix | Styrene-DVB, Gel | |
| Functional Group | Sulfonic acid / Type I (trimethyl ammonium groups) | |
| Ionic Form | H ⁺ / OH ⁻ | |
| Chemical Equivalent Ratio | 1 / 1 | |

Specification

| Component | | Cation Exchange Resin | | Anion Exchange Resin | |
|--|--------|-----------------------|--|----------------------|--|
| | | DIAION™ UBKN1 | | DIAION™ UBAN1 | |
| Whole Bead Count | - | 90 min. | | - | |
| Salt Splitting Capacity | meq/mL | 2.4 min. | | 1.2 min. | |
| Particle Size Distribution on 1180 μm | % | - | | 0.5 max. | |
| Particle Size Distribution thr. 425 μm | % | 1.0 max. | | 1.0 max. | |
| Particle Size Distribution 425 - 1180 μm | % | 95 min. | | - | |
| Mean Particle Size | μm | 650 ± 50 | | 630 ± 50 | |
| Uniformity Coefficient | - | - | | 1.2 max. | |
| Ionic Form Conversion H Form | eq% | 99 min. | | - | |
| Ionic Form Conversion Na Form | eq% | 0.1 max. | | - | |
| Ionic Form Conversion OH Form | eq% | - | | 95 min. | |
| Ionic Form Conversion CO ₃ Form | eq% | - | | 5 max. | |
| Ionic Form Conversion Cl Form | eq% | - | | 0.2 max. | |
| Metal Content (Ca) | mg/L | 50 max. | | 50 max. | |
| Metal Content (Pb) | mg/L | 10 max. | | 10 max. | |
| Metal Content (Fe) | mg/L | 50 max. | | 50 max. | |
| Metal Content (Cu) | mg/L | 10 max. | | 10 max. | |
| Water Extractables | g/L-R | 0.1 max. | | 0.1 max. | |

Typical Properties

| Component | | Mixed Resin |
|------------------|-----|-------------|
| Shipping Density | g/L | 730 |

Recommended Operating Conditions

| | | |
|-------------------------------|-----|---------|
| Maximum Operating Temperature | °C | 60 |
| Operating pH Range | | 0 - 14 |
| Minimum Bed Depth | mm | 800 |
| Service Flow Rate | m/h | 10 - 60 |



Hydraulic Characteristics

The approximate pressure drop at various temperatures and flow rates for each meter of bed depth of DIAION™ USMN1 resin in normal down flow operation is shown in the graphs below.

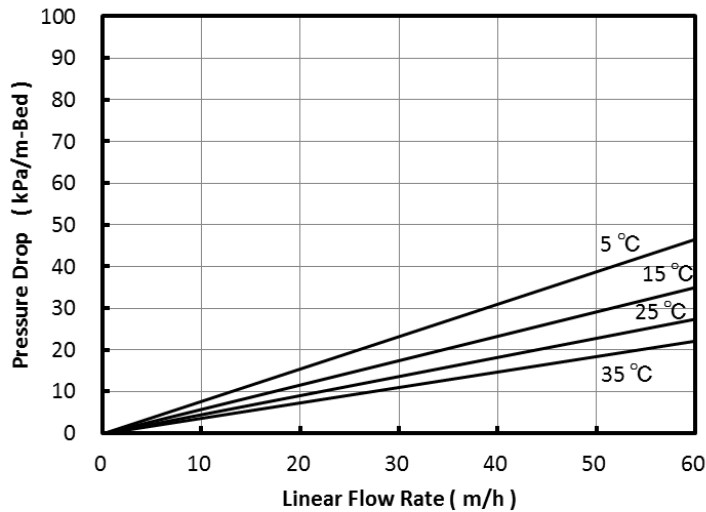


Fig. 1 Pressure Drop of USMN1

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