# NRW-37 LC

**Nuclear Grade Mixed-Bed**

(FOR THE PRODUCTION OF HIGH PURITY WATER)

## PRODUCT DESCRIPTION

**Purolite nuclear resins** are processed to the most exacting specifications. They are specially purified to ensure high percentage conversion to their regenerated form, and are offered in closely controlled particle size ranges. All products in the Purolite range have whole perfect beads typically over 95%. They meet the specifications required by major engineering companies throughout the world.

**Purolite's nuclear products** are used in the production of ultra pure water, preparation of condensate, radiation waste treatment and in the manufacture and purification of pharmaceutical products. Mixed bed resins are frequently used in polishers following other types of water treatment. The high product quality ensures that treated water is of the highest purity available - conductivity 0.055 ìS $cm^{-1}$ or resistivity 18.3 Meg Ohm.

The component resins of **Purolite NRW-37 LC**, **Purolite NRW-400 LC** (strong base type1 anion exchanger) and **Purolite NRW-100** (strong acid cation exchanger) are combined in the ratio which for general types of water to be treated yields the optimum exchangeable capacity. Other ratios are available on request. **Purolite mixed bed resins** can be used for both regenerable or non-regenerable (cartridge) systems.

| Typical Chemical and Physical Characteristics | | |
|---|---|---|
| Polymer Structure | Gel polystyrene crosslinked with divinylbenzene | |
| Appearance | Spherical beads | |
| Functional Groups | $R\text{-}SO_3^-$ / $R\text{-}(CH_3)_3N^+$ | |
| Ionic Form - as shipped | $H^+$ / $OH^-$ | |
| Total Exchange Capacity of Components (wet, volumetric) | Cation, $H^+$ form<br>Anion, $OH^-$ form | 1.8 eq/l min<br>1.0 eq/l min |
| Volume Ratio | 1.5 parts NRW 400 LC/1.0 parts NRW 100 | |
| Moisture Retention – as shipped | 60% max | |
| Bead Size Range (microns) | +1200 < 2%: -420 < 2% | |
| Shipping Weight | 705 - 740 kg/$m^3$ [44-46 lb/$ft^3$] | |
| Temperature Limit | non-regenerable bed<br>regenerable bed | 100°C<br>60°C |
| pH Limits | no limitations | |
| Metals Content as ppm by Weight of Dry Resin (max) | Na + K<br>Fe<br>Heavy Metals | 30 ppm<br>80 ppm<br>40 ppm |
| Percent Conversion to Ionic Form | Cation $H^+$<br>Anion $OH^-$<br>$CO_3$<br>Cl | 99.9% min<br>95 % min<br>5 % max<br>0.1 % max |

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## ADDITIONAL PRODUCT VARIATIONS

| *Purolite* | *Special Characteristics* | *Principal Applications* |
|---|---|---|
| NRW 37 Li LC | Cation resin - 99% Li min | Polishing of cooling water circuits conditioned with natural lithium |
| NRW 37 Li-7 LC | Cation resin - 99% Li-7 | Polishing of cooling water circuits conditioned with 99.9% enriched lithium-7 |