Manitowoc Parts & Service Communicator

# Subject: Using De-ionized Water or Reverse Osmosis Water

When water is purified and minerals are removed the water becomes more aggressive and has a lower electrical resistance.

There are three types of pure water:

Weak Base 300,000 to 20,000 ohms - this is the common water for home, drinking and ice machines.

Strong Base 1,000,000 to 300,001 ohms - Although it can be used in ice machine applications, it is very expensive to produce and is overkill for general ice machine usage. This water can be consumed but the ice is generally used for testing procedures.

Lab Quality 18,300,000 to 1,000,001 ohms - ultra pure for hospital or lab use, this water cannot be consumed. Lab quality water is extremely aggressive because of its low ion and mineral content, DI (de-ionized) / RO (reverse osmosis) water is a powerful leaching agent for metals (water steals ions from the metals). Metals in contact with DI / RO water are often eroded in very short periods of time. Evaporators will degrade when exposed to this type of water.

**Specific Conductance Resistance Approximate Electrolyte Content (for de-ionized or distilled water) at 77°F (25°C)**

| Types of Water | Specific Conductance in Micromhos | Specific Resistance in ohms | Approximate Electrolyte Content PPM NaCl |
|---|---|---|---|
| Lab Quality | 0.1 | 10,000,000 | 0.04 |
| | 0.2 | 5,000,000 | 0.08 |
| Strong Base | 1 | 1,000,000 | 0.4 |
| | 2 | 500,000 | 0.8 |
| Weak Base | 4 | 250,000 | 1.6 |
| | 6 | 166,000 | 2.5 |
| | 8 | 125,000 | 3.2 |
| | 10 | 100,000 | 4 |
| | 20 | 50,000 | 8 |
| | 30 | 33,333 | 14 |
| Untreated | 40 | 25,000 | 19 |
| | 50 | 20,000 | 24 |
| | 60 | 16,666 | 28 |
| | 70 | 14,286 | 33 |
| | 80 | 12,500 | 38 |
| | 90 | 11,111 | 43 |
| | 100 | 10,000 | 50 |
| | 200 | 5,000 | 100 |

Q Model and S Model Ice Machines

- All Manitowoc Q and S Model Control Boards, Nickel Plated Evaporators, Stainless Steel Evaporators and Bronze Evaporators function to 1,000,000 ohms.

RN Model Ice Machines

- RN1000 model nugget ice machines function to 100,000 ohms.


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