

RECO-COOL

TECHNICAL BULLETIN 0014/13

## **Distilled vs Demineralised Water**

### **The Differences Explained**

Recochem is a recognised global leader in the manufacture of automotive coolant and car care products and we know intimately the requirements for water-based products in automotive applications. Water purity is critical in automotive applications in use in car batteries and in coolant/radiator systems. The presence of impurities such as hard water ionic material greatly increases the chances of corrosion, scale formation, and other insidious side effects.

As a result, Recochem manufactures purified water to the highest levels of quality for use in automotive systems and products. Water purity is typically measured by test specifications of pH (ie acidity or alkalinity), Conductivity (which measures the degree of contamination with hard water ionic impurities) and Total Dissolved Solids (which is a measure of organic impurity and particulate matter). Our water meets the highest stringent requirements in each of these test specifications.

The actual chemical processes which are used to manufacture purified water for use in automotive application can be varied, and each of these different processes can produce high quality purified water which is suitable for use. In other words, for use as Battery Water, or Radiator Water, or Windscreen Washer Fluid (or, indeed, steaming iron water), the different processes will generate equally identical performance in purified water quality. Each of these processes: Distillation, Demineralisation and/or De-ionisation are therefore identical. The terms distilled water and demineralised water are probably most easily understood when their methods of production are explained.

Demineralised water is essentially water with its minerals removed. The most common way of achieving this is to pass water through an ion exchange resin which strips the incoming water of its ions (minerals) to produce demineralised water. However modern processes also involve passing the water through activated charcoal filters to strip any organic chemicals from the liquid and also to irradiate the water as it passes through the purification process with ultra-violet light to remove bacteria from the water. The product, Demineralised Water, is suitable for premixing coolant concentrate, use in steam irons and batteries.



Distilled water is produced by boiling water in an apparatus called a “still” and then recondensing it in a cooling unit (condenser) to return the water to a liquid state. Distilling is used to purify water leaving dissolved contaminants such as salts behind in the boiling pot as the water vapour rises away. Again, in order to remove all of the impurities, a secondary activated charcoal filtration step may be necessary in order to remove all impurities in the incoming water.

Essentially, for the purposes of automotive applications in Radiators, Coolant systems, Automotive batteries and battery terminals, and also in windscreen washer fluids, both Distilled and Demineralised water are both equally suitable and essentially identical. Both products can also be used in steam irons.

