Hall Pyke

Water Treatment

Resins and carbons

The SMART choice for filtration

Hall Pyke

Purolite® MB400

Mixed Bed Resin

Purolite MB400 is a high quality resin mixture for direct purification of water. It is suitable for use in regenerable or non-regenerable cartridges and in large ion exchange units. Passage of water at recommended flow rates through the resin as supplied can achieve almost complete reduction of total dissolved solids. The residuals produce average conductivity values of about 0.1 µs cm-1 for a major portion of the service run which may be extended depending upon the final water quality being acceptable. Equivalent volumes of ultra pure water may be obtained after regeneration but only if sufficient regenerant quantities are employed to achieve the percentage conversion levels equivalent to those of the "as supplied" resin. Generally acceptable capacity and quality is obtained economically at lower regeneration.

Activated Carbon

What is Activated Carbon?

Activated carbon is a porous form of carbon which can be manufactured from a variety of carbonaceous raw materials. The principal products are made from coconut shell, coal, peat or wood. The activation process involves treating the raw material with steam or chemicals, thereby developing a pore structure.

Activated carbon is characterized by a vast system of pores of molecular size within carbon particles resulting in the formation of a material with extensive internal surface area.

How Does It Work?

The atoms of carbon comprising the large internal surface area of activated carbon present attractive forces outward from the surface. These forces, known as Van der Waals forces, attract the molecules of the surrounding gas or liquid.

The combination of these attractive forces and those of molecules in the surrounding medium result in absorption of molecules at the surface of the activated carbon. Some molecules have structures which make them more easily adsorbed than others and it is due to this that separation of molecules is achieved.

Activated Carbon Selection

Selection of the most appropriate activated carbon type is based either on known characteristics of the chemicals to be removed in an absorption process or by a series of controlled laboratory tests. Powder carbons are mainly used in batch processes and removed by filtration after an appropriate contact time whereas granular carbons are used in fixed or moving bed filters. In each case of granular carbons, the smallest particle size is normally selected consistent with retention in the filter and acceptable flow resistance since this will provide the best adsorption kinetics. Activated carbon is sometimes chemically impregnated to enhance the performance by chemisorption when the adsorption affinity for particular contaminants is too weak to be effective.

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