REV 0421

EDM Mixed Bed Resin

ResinTech Mag-Mixed Bed is a specially formulated mixture of cationic and anionic exchange resins that are fully regenerated and blended in a proportion to give maximum removal of heavy metal ions, maintain high resistivity and low pressure losses in electrical discharge machining (EDM) operations.

The recirculated rinse water used for cooling the electrodes in EDM operations also acts as a dielectric. It is necessary to maintain water with fairly high resistance to electric currents to maintain cutting efficiencies. In most instances, resistance values of 20,000 ohms or higher are required. Initially ResinTech's Mag-Mixed Bed will give much higher figures than this, as high as 10,000,000 ohms or more. While these numbers are impressive they are not useful and should not be thought of when selecting the resistivity value that will determine when the resin is exhausted.

For best operation Mag-Mixed Bed should be used in a recirculated system. The potential operating capacity for Mag-Mixed Bed in recirculated metal cutting systems is in excess of 20 kilograins per cubic foot as calcium carbonate. A simple way to determine the operating life of the resin would be to check conductivity of the bath water, measure the flow rate of the recirculated rinse and use the following formula to calculate the hour flows:

(conductivity in microhmos/CM)
x (flow rate - gpm)
x 1.75
= grains per hour as calcium carbonate

The capacity of 1 cubic foot of Mag-Mixed Bed is approximately 20,000 grains for metal ions. Divide the calculated grains per hour into 20,000 to obtain the number of hours of operation per cubic foot of Mag-Mixed Bed. Then multiply the number of cubic feet of Mag-Mixed Bed being used in the tank or cartridge times this value to determine the life of the cartridge.

In metal cutting operations with significant amounts of make-up water the resin bed may exhaust more rapidly than the above calculations, because the primary load may be due to the mineral content in the make up water. When this happens, ResinTech MBD-10 should be used to gain higher capacity.

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INNOVATIONS IN ION EXCHANGE

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