TREITEL
CHEMICAL ENGINEERING LTD.

Technical Data Sheet

TREION™ HPDI™

Mixed-Bed Resin for High Purity Water Applications
Once-Recycled and Highly-Regenerated

DESCRIPTION

TREION™ HPDI™ is an ionically equilibrated Mixed-Bed Resin. It is a highly-regenerated, ready-to-use mixture of a strong acid cation exchanger with a strong base type 1 anion exchanger.

TREION™ HPDI™ is originally virgin AMBERLITE™ MB20 H/OH Mixed-Bed Resin which had been used only once, specifically, exhausted only once. Subsequently, it was highly-regenerated by Treitel Chemical Engineering for the production of high purity water.

TREION™ HPDI™ can be used for all applications requiring totally demineralized water, free of silica and of carbon dioxide.

PROPERTIES

Composition in volume	Cation component : 38 – 44 % Anion component : 62 – 56 %
Ionic form as shipped	H^+ / OH^-
Shipping weight	715 g/L
Chemical stability	Insoluble in water, dilute solution of acids or bases and common solvents

SUGGESTED OPERATING CONDITIONS

Maximum operating temperature	60°C
Minimum bed depth	700 mm
Service flow rate	20 to 40 BV*/h
Regenerants	Cation component : HCl Anion component : NaOH

** 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin*

PACKAGING

50 Liter drums

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PERFORMANCE

Operating Capacity

The operating capacity of TREION™ HPDI™ Mixed-Bed Resin can be estimated using the following formula, which gives an approximate determination of volume of water that can be treated:

$$BV = \frac{480}{TDS}$$

BV (Bed Volume) is the number of Liters of feedwater containing TDS (Total Dissolved Solids) given in meq/L that can be demineralized with one Liter of the resin when run to exhaustion.

Treated Water Conductivity

In most applications, TREION™ HPDI™ Mixed-Bed Resin provides high-quality demineralized water with conductivity lower than 0.1 µS/cm and neutral pH.

QUALITY ASSURANCE

A Certificate of Analysis specifying operating capacity and residual TOC is available for every regeneration batch of TREION™ HPDI™ Mixed-Bed Resin.

LIMITS OF USE

TREION™ HPDI™ is suitable for industrial uses. For all other specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Treitel Chemical Engineering in order to determine the best resin choice and optimum operating conditions.

TRADEMARKS

TREION™ and HPDI™ are Trademarks of Treitel Chemical Engineering Ltd., Israel.

AMBERLITE™ is a Trademark of DuPont de Nemours Inc., U.S.A.

CAUTION

Ion exchange resins, as produced, contain by-products resulting from the manufacturing process. The user must determine the extent to which organic by-products must be removed for any particular use and establish techniques to assure that the appropriate level of purity is achieved for that use. The user must ensure compliance with all prudent safety standards and regulatory requirements governing the application.

Except where specifically otherwise stated, Treitel Chemical Engineering does not recommend ion exchange resins, as supplied, as being suitable or appropriately pure for any particular use. Consult Treitel Chemical Engineering representative for further information.

Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Nitric acid and other strong oxidising agents can cause explosive type reactions when mixed with Ion Exchange resins. Proper design of process equipment to prevent rapid build-up of pressure is necessary if use of an oxidising agent such as nitric acid is contemplated. Before using strong oxidising agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

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