PRODUCT DATA SHEET

AMBERIET UP6040 is a semi-conductor grade ion exchange resin mixed bed which is specifically designed and manufactured for final polishing service in the highest purity water treatment applications. This pre-mixed resin product is composed of an equivalent mixture of high capacity, fully regenerated strong acid and strong base gel type ion exchange resins. The resin mixture exhibits no clumping. The particle size of the component resins is specially designed to reduce the natural tendency of cation and anion resins to separate when handled in a water This ensures perfect mixed bed slurry. equilibrium performance, since the resins will remain intimately mixed in the final polishing vessels. The uniform particle size of the resins maximizes the kinetic performance of the mixed bed allowing the use of high service flow rates to

achieve the ultimate balance of pressure drop and purity. All these characteristics are essential to produce water of the highest achievable purity with a minimum volume of rinse water.

AMBERJET UP6040 is specifically designed for use in non-regenerable final polishing mixed beds in ultra-pure water systems in the semiconductor industry and similar demanding applications. The leakage of all ionic species, silica, TOC, and sub-micron particles have all been driven to a new low level with Amberjet UP6040. Free of the limitations imposed by regenerable systems, the characteristics of this new semi-conductor grade mixed bed resin concentrate on optimum properties during service. Amberjet UP6040 is not recommended for use in regenerable mixed bed applications.

BASIC RESIN PROPERTIES

In non-regenerable final polishing applications, UPW performance is much more significant than basic resin properties. It is still important to know that the resins used in the application are of the highest capacity and total quality. The typical properties of the resins used in Amberjet

UP6040 are shown below. These values are listed to show that both the cation and anion resins used to make Amberjet UP6040 meet stringent standards for high capacity, uniform particle size ion exchange resins.

	Cation H ⁺	Anion OH
Moisture holding capacity, %	44.0 - 51.0	54.0 - 60.0
Total exchange capacity, eq/L	≥ 2.00	≥ 1.10
Uniformity coefficient	≤ 1.20	≤ 1.20
H form % of sites	≥ 99	-
OH form % of sites	-	≥ 95.0
Cl form, % of sites	-	≤ 0.5
CO ₃ form % of sites	-	≤ 5.0
SO ₄ form % of sites	-	≤ 0.1

©2000 Rohm and Haas Company PDS 0624 A - Oct. 00 - 1/2

SUGGESTED OPERATING CONDITIONS FOR BEST RESULTS

(Product may be operated successfully outside these conditions, but results may not be optimum)

Feed water temperature	15 to 25° C (60 to 77° F)	
Minimum bed depth	900 mm (3 feet)	
Service flow rate	30 to 50 BV*/h	
Recommended influent water quality		
Inlet Resistivity	> 17 MΩ·cm	
Inlet Silica	< 2 ppb	
Inlet Total Organic Carbon		

* 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin $(1BV/h = 0.125 \text{ gpm/ft}^3)$

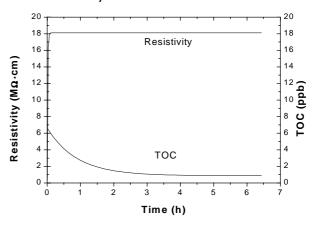
QUALITY ASSURANCE

Amberjet UP6040 is tested by Rohm and Haas for resistivity, TOC, and kinetic performance. This insures that all batches of Amberjet UP6040 will meet stringent UPW performance requirements on these most critical parameters.

Rohm and Haas will fully support the quality and performance of Amberjet UP6040 in UPW applications in order to assure full customer satisfaction that the delivered product is of the highest quality.

Typical TOC and resistivity curves based on our quality control procedure for Amberjet UP6040 are shown below.

Resistivity and TOC Rinse Performance



All our products are produced in ISO 9002 certified manufacturing facilities.

Rohm and Haas/Ion Exchange Resins - Philadelphia, PA - Tel. (800) RH AMBER - Fax: (215) 537-4157 Rohm and Haas/Ion Exchange Resins - 75579 Paris Cedex 12 - Tel. (33) 1 40 02 50 00 - Fax: 1 43 45 28 19

WEB SITE: http://www.rohmhaas.com/ionexchange



AMBERJET is a trademark of Rohm and Haas Company, Philadelphia, U.S.A.

Ion exchange resins and polymeric adsorbents, 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, Rohm and Haas Company does not recommend its ion exchange resins or polymeric adsorbents, as supplied, as being suitable or appropriately pure for any particular use. Consult your Rohm and Haas technical 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 buildup of pressure is necessary if use of an oxidising agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

Rohm and Haas Company makes no warranties either expressed or implied as to the accuracy or appropriateness of this data and expressly excludes any liability upon Rohm and Haas arising out of its use. We recommend that the prospective users determine for themselves the suitability of Rohm and Haas materials and suggestions for any use prior to their adoption. Suggestions for uses of our products of the inclusion of descriptive material from patents and the citation of specific patents in this publication should not be understood as recommending the use of our products in violation of any patent or as permission or license to use any patents of the Rohm and Haas Company. Material Safety Data Sheets outlining the hazards and handling methods for our products are available on request.

©2000 Rohm and Haas Company PDS 0624 A - Oct. 00 - 2/2