

ION EXCHANGE RESINS

DUOLITE A 101 D

PRODUCT DATA SHEET.

**DESCRIPTION**

Duolite A 101 D is a type 1 strong base Anion Exchange Resin. Its polystyrene matrix is prepared according to a special patented process which gives a homoporous / microporous structure. Duolite A 101 D is characterised by excellent chemical and osmotic stability and good resistance to organic fouling. Its particular use is for water demineralisation when maximum removal of silica is required.

The physical & chemical properties are tested by the method specified in IS : 7330-1988

PROPERTIES

Matrix _____	Polystyrene
Functional groups _____	- N (CH ₃) ₃ +
Physical form _____	Cream coloured beads
Ionic form as supplied _____	See [Available grades]
Total exchange capacity _____	Minimum 1.30 eq / L (Cl ⁻ form)
Moisture holding capacity _____	50 - 55% (Cl ⁻ form)
Specific gravity _____	1.05 to 1.11 (Cl ⁻ form)
Packing density _____	About 700 g /L (Cl ⁻ form)
Particle size _____	See [Available grades]
Maximum reversible swelling _____	Cl ⁻ ↔ OH ⁻ : MAX 17 %
Chemical stability _____	Insoluble in water, dilute solutions of acids or bases and common solvents.

SUGGESTED OPERATING CONDITIONS

Maximum operating temperature _____	60 °c (OH ⁻) 100°c (Cl ⁻)
Minimum bed depth _____	700 mm
Service flow rate _____	5 to 40 BV* / hr
Regenerant _____	Na OH
Level _____	40 to 200 g / L
Concentration _____	3% to 5 %
Flow rate _____	2 to 10 BV / hr (min.contact time30 minutes)
Slow rinse _____	Minimum 2 BV at regeneration flow rate
Fast rinse _____	same as service flow rate

* 1 BV (Bed Volume) = 1 m³ solution per m³ resin

Please refer the check list provided for safe operation and longer durability of resin.
For storage of resin refer our technical data sheet on Duolite storage and handling instructions.

AVAILABLE GRADES

Name	Ionic form	Particle size range (mm)	Effective size (mm)	Max Uniformity Coefficient	Applications
DUOLITE A 101 D	Cl ⁻	0.3-1.2	0.45-0.55	1.80	For conventional uses
DUOLITE A 101 DD	Cl ⁻	0.5-1.0	0.6-0.7	1.40	DUOBED (stratified bed)
DUOLITE A 101 D OH	OH ⁻	0.4-1.2	0.5-0.6	1.80	Ready -for-use resin
DUOLITE A 101 D / U	Cl ⁻ / SO ₄ ⁻	0.4-1.0	0.5-0.65	1.60	Uranium recovery

APPLICATIONS

The main application of Duolite A 101 D is in water demineralisation. Duolite A 101 D is used in conjunction with strong acid cation exchangers to produce high quality demineralised water. Mixed bed units of Duolite C 20 & Duolite A 101 D routinely give specific resistivities which approach the theoretical maximum; a silica level generally below 10 ppb. Other major applications of Duolite A 101 D include:

- Uranium recovery,
- Treatment of electroplating waste,
- Fixation of cyanides, sulphides, borates, etc.
- Removal of iron and anionic metal complexes,
- Catalysis.

PERFORMANCE

The operating capacity of Duolite A 101 D in water demineralisation is a function of the raw water composition, the regeneration level and the required treated water quality. If residual silica levels are important, best results are obtained using hot (50^o C) caustic soda for regeneration.

LIMITS OF USE

Various grades of Duolite A 101 D are suitable for industrial uses. For other specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Auchtel in order to determine the best resin choice and optimum operating conditions

HYDRAULIC CHARACTERISTICS

Figure 1 shows the bed expansion of standard Duolite A 101 D, as a function of backwash flow rate and water temperature.

Figure 2 shows the pressure drop data for standard grade Duolite A 101 D, as a function of water flow rate and water temperature. Pressure drop data are valid at the start of the service run with a clear water and a correctly classified bed.

Figure 1

BED EXPANSION

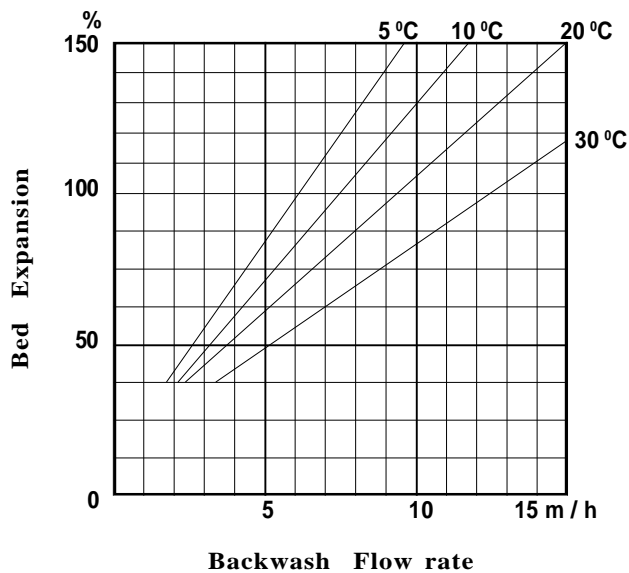
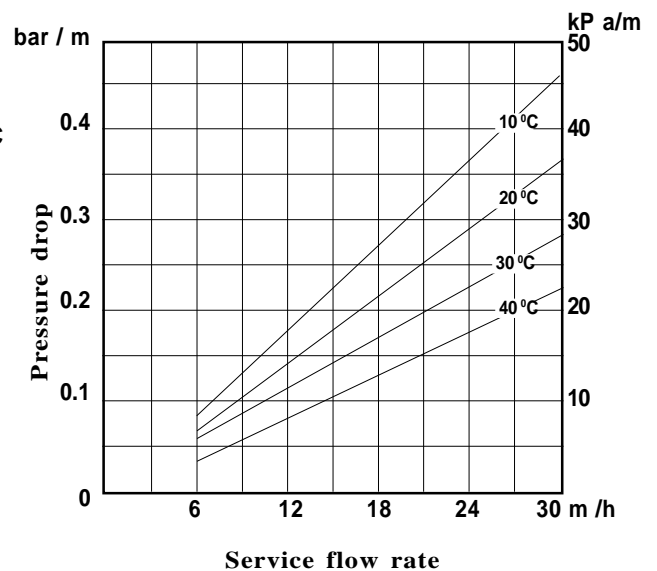


Figure 2

PRESSURE DROP



DUOLITE A 101 D

STRONG BASE ANION EXCHANGER

For further information please contact your nearest Auchtel Sales Office.

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SAFE HANDLING INFORMATION

A Material Safety Data Sheet is available for each product. To obtain a copy contact your Auchtel representative. Ion exchange resins and polymeric adsorbents as produced, contain manufacturing by-products. The user must determine the extent to which these by-products must be removed for any particular use and to establish methods to ensure 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 otherwise stated, Auchtel does not recommend its ion exchange resins or polymeric adsorbents as suitable or appropriately pure for any particular use. Consult your Auchtel technical representative for further information.

CAUTION

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 oxidizing 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 oxidizing agent such as nitric acid is contemplated. Before using strong oxidizing agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

The suggestions and data in this bulletin are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use of our products are beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before adopting them on a commercial scale. The Company maintains a policy of continuous development and reserve the right to amend any specification without notice. DUOLITE is a trademark of Rohm and Hass Company, Philadelphia, U.S.A. and Auchtel Products Ltd. are users of the same in India.

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