

ION EXCHANGE RESINS

# DUOLITE C 436

ENGINEERING DATA SHEET



Duolite C 436 is weak acid Carboxylic Cation Exchange Resin These data provide information to calculate the operating capacity of Duolite C 436

### OPERATING CAPACITY

The operating capacity is obtained by multiplying the basic value from Table 1 by the correction factors A & B from Tale 2 & 3.

$$\text{Cap} = \text{Cap}_0 \times A \times B$$

Table 1 : Basic Capacity

Exhaustion Time in hours	Exchange capacity eq/litre
6	1.22
7	1.27
8	1.34
10	1.44
12	1.58
15	1.76
16	1.78
20	2.02
24	2.2
25	2.22
30	2.4

TABLE 2 : Capacity correction factor A versus Total Hardness to Total Alkalinity

Total hardness / Total Alkalinity as CaCO <sub>3</sub>	Factor A
0.1	0.25
0.2	0.27
0.3	0.30
0.4	0.32
0.5	0.36
0.6	0.37
0.7	0.42
0.8	0.47
0.9	0.60
1.0	1.0

TABLE 3 : Capacity correction factor B versus water temperature.

Water °C	Factor B
5	0.75
10	0.80
15	0.87
20	0.94
25	1.0

TABLE 4 : Suggested Operating Conditions

Minimum bed depth _____	75 cm / Min
Backwash _____	Flow rate should be selected for minimum 40% bed expansion and should be done till effluent is clear.
Regeneration concentration _____	0.7 - 1.4% H <sub>2</sub> SO <sub>4</sub> or Max. 5% HCl
Injection flow rate _____	2 - 8 bv / hr - HCl
	10 - 20 bv / hr H <sub>2</sub> SO <sub>4</sub>
Rinse flow rate _____	10 - 20 bv / hr
Total volume of rinse water _____	6 - 8 bv
Flow rate ( Exchange cycle ) _____	5 - 40 bv / hr

\* 1 BV ( Bed Volume ) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin

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**Note :** The operating capacity data is given based on methyl orange alkalinity end pH of 30 ppm CaCo<sub>3</sub>

The Capacity correction Factor 'A' is not to be considered when inlet water contains appreciable sodium alkalinity as the weak acid Cation resin in such case is operated to hardness break through.

### SAFE HANDLING INFORMATION

A material Safety Data Sheet, Material handling & storage sheet are available for Duolite products. To obtain a copy contact Auchtel representative Ion exchange resins and polymeric adsorbants, as produced, contain manufacturing by-products. The user must determine the extent to which these by-product 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 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 adsorbants as suitable or appropriately pure for any particular use. Consult your Auchtel representative for further information.

### CAUTION

Acid 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.*

**Auchtel Products Ltd., 142 C, Victor House, N.M. Joshi Marg, Lower Parel(w), Mumbai-400 013  
Tel. 91-22-493 3975, Fax. 91-22-493 9755, 497 4211 E-mail - auchtel@vsnl.com**