SEPARATION TECHNOLOGIES

ION EXCHANGE RESINS

DUOLITE A 368

PRODUCT DATA SHEET

Auchtel

DESCRIPTION

DUOLITE A 368 is a macroporous polystyrene weak base Anion Exchange Resin. Its polystyrene matrix is prepared according to a special process which gives a macro porous structure ensuring excellent adsorption and desorption of organic matters and imparts exceptional physical and chemical stability. The resin is highly efficient for uptake of strong acids when follwing a Duolite C 20 Cation Exchange Resin in H+ form. The physical & chemical properties are tested by the method specified in IS 7330-1988

PROPERTIES

Matrix	Macroporous polystyrene.
Functional groups	$-N(R)_2$, Min. 85% of TEC
Physical form	Ivory beads.
Ionic form as supplied	Free base.
Total exchange capacity	1.60 eq / L minimum (Free base form)
Moisture holding capacity	43 - 49 % (Free base form)
Specific gravity	About 1.05 (Free base form)
Shipping weight	About 680 g / L (Free base form)
Particle size	See " Available Grades "
Maximum reversible swelling	F.B.® Cl^- : 30 % Maximum.
Operating pH range	0 - 7
Chemical stability	Insoluble in dilute acids or bases and common solvents.

Please refer our Technical Data Sheet on Duolite storage and handling instructions for storage of resin.

SUGGESTED OPERATING CONDITIONS

Maximum operating temperature	60^0C (F.B.), 100^0C (Cl^-)		
Bed depth	700 mm to 1500 mm		
Service flow rate	5 to 40 BV* / hr		
Maximum linear velocity	50 m / hr		
Regenerant	NaOH,	NH_3	Na_2CO_3
Level	40-80 g / L	40-80 g / L	60-130 g / L
(Organic cont. : Negligible)	110 %	150%	200% of Ionic load
Concentration	2-4%	2-6%	4-8%
Flow rate	2 to 8 BV/ hr (Min. Contact time 30 minutes)		
Slow rinse	Min 2 BV at regeneration flow rateS		
Fast rinse	Same as service flow rate & to be taken into service on conductivity basis.		
Influent limitations			
Free chlorine	Nil		
Turbidity	Less than 2 NTU		
Iron & heavy metal	Less than 0.1 ppm		

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

Please refer the check list provided for safe operation and longer durability of resin.

AVOID EXCESSIVE ORGANICS ENTERING DUOLITE IER FOR LONG & HEALTHY LIFE

AVAILABLE GRADES

Name	Ionic form	Particle size *, mm	Applications
DUOLITE A 368	Free Base	0.3 to 1.2	Conventional uses.
DUOLITE A 368 SP	Free Base	0.4 to 1.2	Deashing & colour removal from suger juices and Acid removal from Glyaxol
DUOLITE A 368 PLUS	Free Base	0.4 to 1.2	Variety of Industrial applications

***90% OF THE BEADS WITHIN THE SPECIFIED RANGE.**

APPLICATIONS

Due to its exceptional physical and chemical stability Duolite A 368 is particularly suitable for fixing strong anions and organics normally encountered in water treatement . Duolite A 368 is particularly advantageous for dionising water which has not been decarbonated with lime and a degasifier located downstream from Duolite A368.Other major application of Duolite A 368 include

- Deashing and colour removal from suger juices.

PERFORMANCE

Operating capacity

The operating capacity of Duolite A 368 in water demineralisation is a function of raw water composition, sulphate to FMA ratio , CO_2 concentration and flow rate . Duolite A 368 may be regenerated with caustic soda, ammonium hydroxide or sodium carbonate . Duolite A 368 gives specific chloride leakage less than 0.03 meq / l as chloride. If the regeneration level is to be based on capacity used, the quantity of reagent should be calculated as per the sugessted operating conditions. Whenever the water to be treated, contains significant quantities of organic foulants the amount of regenerant should be

- Caustic Soda..... 130 to 150 % of Theorotical Ionic load
- Ammonia ..... 175 to 200 % of Theorotical Ionic load

Organic matter

Duolite A 368 is extremely effective for the treatement of water containing aggressive organic foulants. Reversibility is good, and Caustic regeneration simulteneously desorbs organic material ensuring protection of subsequent anion from organic fouling. Normally Duolite A 368 is recommended whenever the ratio

$$N = \frac{O.M.}{F.M.A.} < 20.$$

where : O. M. is the Organic content in ppm as $KMnO_4$ and
FMA is the free mineral acidity in meq / l

When the organic load is higher than 25 ppm $KMnO_4$, or in case of detergent it is adivisable to provide column of Scavenger Resin (Duolite A 171 P) in front of deionisation train to assist Duolite A 368

Resistance to osmotic shock

The porosity of Duolite A 368 has been designed to offer a maximum stability under strong osmotic shock.

HYDRAULIC CHARACTERISTICS

Figure 1 shows the bed expantion of standard Duolite A 368 , as a function of backwash flow rate and temperature.

Figure 2 shows the pressure drop data for standard grade Duolite A 368, as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with a clear water and correctly classified bed.

Figure 1

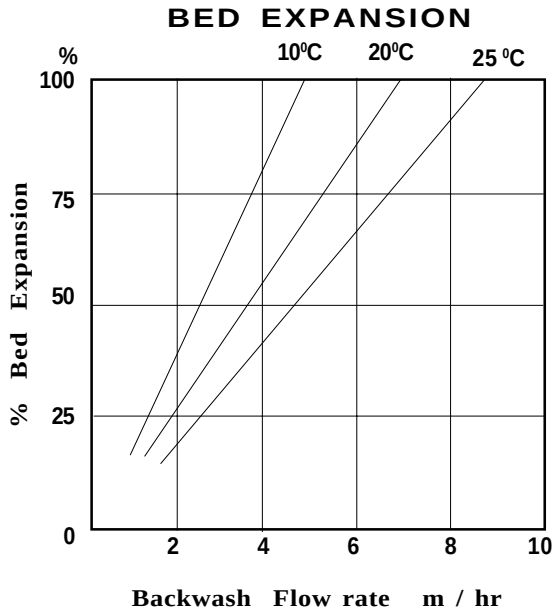
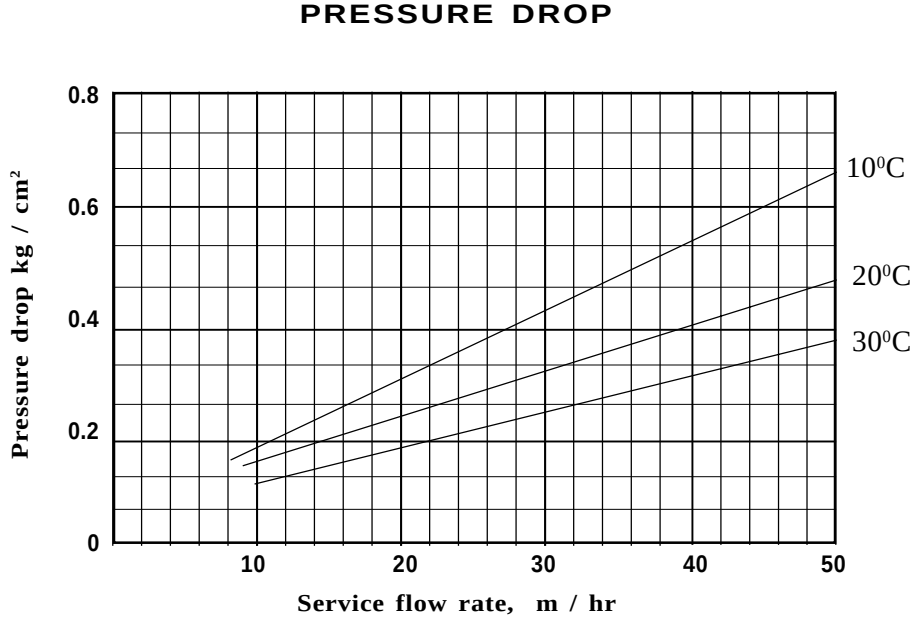


Figure 2



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PRODUCT DATA SHEET

SAFE HANDLING INFORMATION

A Material Safety Data Sheet is available for each product. To obtain a copy contact your Auchtel representative.

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 material.

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