

INDION[®] 220 Na

Description

INDION 220 Na is a high capacity strongly acidic cation exchanger in bead form. It is based on cross linked polystyrene and has a gel structure. The resin contains sulphonic acid functional groups. It is supplied moist in the sodium form.

Applications

INDION 220 Na is used most widely in sodium form for water softening application. It can be used also in two-stage de-ionising as the cation exchanger in the hydrogen cycle.

Characteristics

Appearance	:	Moist golden yellow beads
Matrix	:	Styrene divinylbenzene copolymer
Functional Group	:	Sulphonic acid
Ionic form as supplied	:	Sodium
Total exchange capacity	:	1.8 meq/ml, minimum
Moisture holding capacity	:	50 - 55%
Shipping weight *	:	810 kg/m ³ , approximately
Particle size range	:	0.3 to 1.2 mm
> 1.2 mm	:	5.0%, maximum
< 0.3 mm	:	1.0%, maximum
Uniformity co-efficient	:	1.7, maximum
Effective size	:	0.45 to 0.55 mm
Maximum operating temperature	:	140 °C
Operating pH range	:	0 to 14
Volume change	:	Na to H, 8 % approximately
Resistance to reducing agents	:	Good
Resistance to oxidizing agents	:	Generally good, chlorine should be absent

* Weight of resin, as supplied, occupying 1 m³ in a unit after backwashing and draining.

Typical operating data

Bed depth	:	0.75 m, minimum
Backwash	:	9 m ³ / h m ² for 5 - 10 minutes
Regenerant	:	NaCl
Regeneration level	:	80 - 160 kg/m ³
Regenerant concentration	:	10 to 15 % w/v
Injection time	:	20 - 30 minutes
Rinse volume	:	3 m ³ / m ³
Rinse time	:	50 minutes
Service flow Rate	:	45 bv/h, maximum

Operating capacity and sodium leakage

Table 1 - Figure 1 gives typical operating capacities when regenerated with sodium chloride. These capacities are

based on a typical water containing hardness not more than 500 mg/l CaCO₃ hardness and Sodium less than 50% of total cations. The hardness leakage is less than 5 mg/l CaCO₃.

Pressure drop

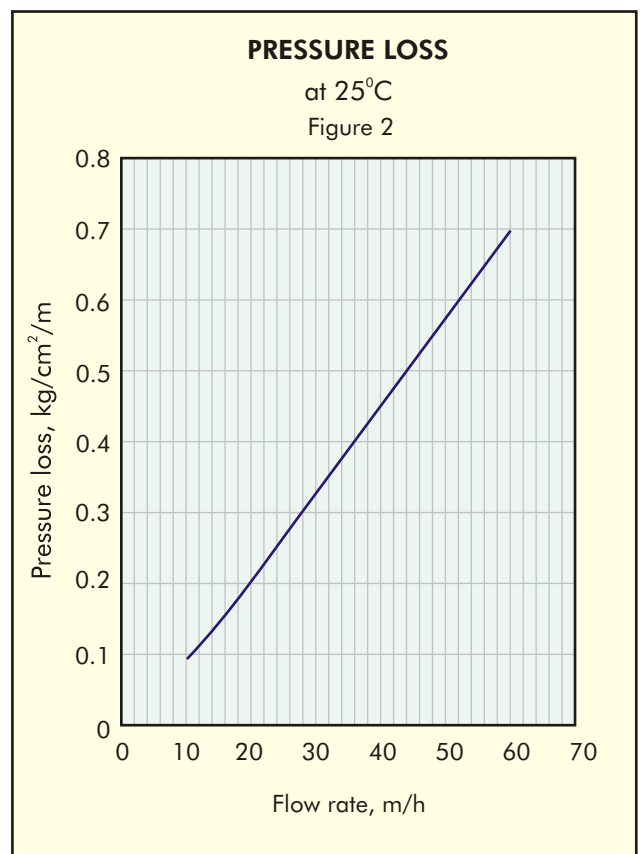
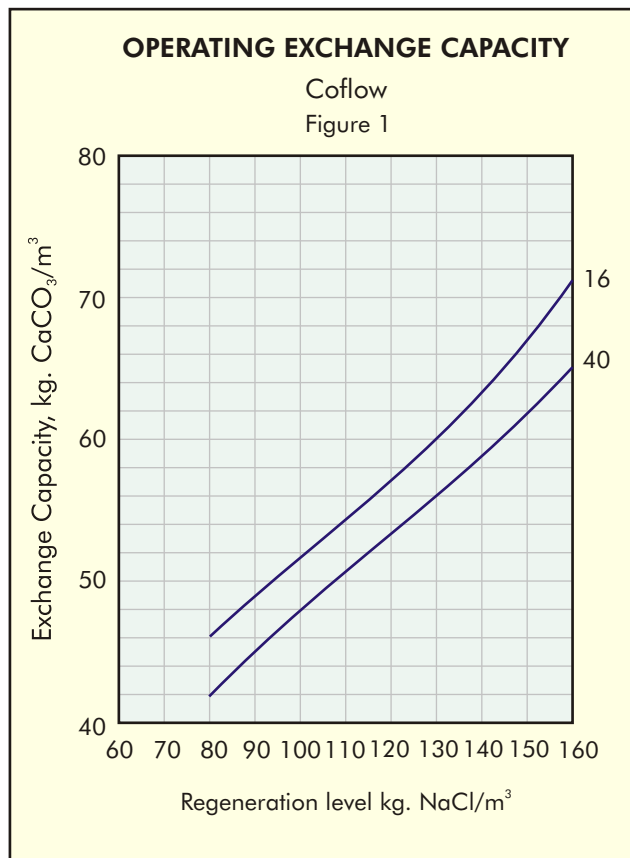
An estimate of pressure loss through a bed of Indion 220 can be obtained from Table 2 - Figure 2.

Table 1

Regeneration level kg NaCl/m ³	Operating capacity kg CaCO ₃ /m ³	
	At 16 bv/h	At 40 bv/h
80	46	42
100	52	48
130	60	56
160	71	65

Table 2

Flow rate m ³ /h m ²	Pressure drop at 25°C kg /cm ² /m of bed depth
10	0.09
20	0.20
40	0.45



Use of good quality regenerants

All ion exchange resins are subject to fouling and blockage of active groups by precipitated iron. Hence the iron content in the feed water should be low and the regenerant must be essentially free from iron and heavy metals. All resins are prone to oxidative attack, resulting in problems such as loss of physical strength. Therefore, the regenerant should have as low chlorine content as possible. Good quality regenerant of technically or chemically pure grade should be used to obtain best results.

Packing

HDPE lined bags	25/50 lts	LDPE bags	1 cft/25 lts
Super sack	1000 lts	Super sack	35 cft
MS drums	180 lts	Fiber drums	7 cft
with liner bags		with liner bags	

Storage

Ion exchange resins require proper care at all times. The resin must never be allowed to become dry.

Regularly open the plastic bags and check the condition of the resin when in storage. If not moist, add enough clean demineralised water and keep it in completely moist condition. Always keep the resin drum in the shade. Recommended storage temperature is between 20° C and 40° C.

Safety

Acid and alkali solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. If any oxidising agents are used, necessary safety precautions should be observed to avoid accidents and damage to the resin.

INDION range of Ion Exchange resins are produced in a state of the art ISO 9001 and ISO 14001 certified manufacturing facilities at Ankleshwar, in the state of Gujarat in India. This product data sheet (issue 09/2008) replaces previous issues.

To the best of our knowledge the information contained in this publication is accurate. Ion Exchange (India) Ltd. maintains a policy of continuous development and reserves the right to amend the information given herein without notice.

INDION is the registered trademark



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