

# INDION® SIR

## Description

INDION SIR chelating cation exchange resin has a high affinity for heavy metal cations over alkali or alkaline earth metals, such as sodium, potassium, calcium and magnesium. Selectivity is achieved by an iminodiacetic acid functionality chemically bonded to a macro reticular resin matrix. The functional group coordinates heavy metal ions with several sites, binding the ions very tightly. The resin is supplied in sodium form.

The macro reticular structure of INDION SIR resin provides a number of advantages over traditional gel resins. It is highly resistant to osmotic shock, providing greater resin life than gel resins used under the same conditions. Due to the short ion diffusion path, the high porosity of INDION SIR resin improves the kinetics of ion exchange.

## Application

The selective nature of INDION SIR resin may dramatically decrease the cost of waste treatment. When small amounts of toxic metals are in solution with larger amounts of alkali or alkaline earth cations.. INDION SIR resin will prefer the toxic metals over the other cations. This allows removal of the undesirable metal contaminant without the need to completely deionize the waste stream. Regenerant costs and in some cases, capital costs can be reduced, since a smaller system can be used.

INDION SIR resin is ideal for use in non-aqueous media such as chemical process streams, because of its macro reticular structure. The resin is based on a very stable styrene-divinyl benzene matrix.

## Characteristics

Appearance	:	Opaque, off white to beige colour beads
Matrix	:	Styrene divinylbenzene copolymer
Functional group	:	Iminodiacetic acid
Ionic form as supplied	:	Sodium
Total exchange capacity in H <sup>+</sup> form	:	2.2 meq/ml, minimum
Moisture holding capacity	:	52 - 58 %
Shipping weight *	:	710 kg/m <sup>3</sup>
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	:	90° C
Operating pH range	:	1 to 10
Volume change	:	Na <sup>+</sup> to H <sup>+</sup> , -32 % maximum
Resistance to reducing agents	:	Good
Resistance to oxidising agents	:	Generally good, chlorine should be absent

\* Weight of resin, as supplied, occupying 1 m<sup>3</sup> in a unit after backwashing and draining.

## Packing

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

## Storage

Ion exchange resin requires 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 used for regeneration 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.

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.

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