

INDION® CAM 14

Description

INDION CAM 14 is a nuclear grade mixed ion exchange resin. It is a mixture of highly purified and super regenerated INDION 223 H⁺ and INDION GS300 NG in volume ratio of 1:4.

Applications

INDION CAM 14 is recommended in any non regenerable mixed bed application where reliable production of the highest quality water is required and where "as supplied" resin must have an absolute minimum of ionic and nonionic contamination.

Characteristics

Physical

Appearance	:	Spherical beads
Shipping weight *	:	690 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
Microscopic examination	:	Surface cracks not more than 5%

Chemical

Matrix
Type
Functional group
Total exchange capacity
Ionic conversion

Cation resin

Styrene DVB copolymer
Gel
Sulphonic acid
1.9 meq/ml
99% minimum in H form

Anion resin

Styrene DVB copolymer
Gel
Quaternary ammonium
1.1 meq/ml
94% minimum in OH form
1% maximum in Cl form
5% maximum in CO₃ form
46 - 52 %
250 g/bead, (avg)
Up to 60° C

Moisture holding capacity
Bead strength
Thermal stability

47 - 54 %
500 g/bead, (avg)
Up to 120° C

Chemical stability

: Stable in pH range 0 - 14
Resistant to oxidizing and reducing agents
Stable in Radiation field upto 10⁷ rad

Ionic impurities

Iron content	:	20 mg/l, maximum as Fe
Copper content	:	10 mg/l, maximum as Cu
Heavy metals	:	10 mg/l, maximum as Pb
Water soluble organics	:	0.1 mg KMnO ₄ /ml maximum

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

Packing

PVC Jars with inner liner bags	5 / 6 lts
LDPE lined bags	0.5 cft / 1 cft / 25 lts
HDPE lined bags	25 / 50 lts
HDPE drums	50 / 100 / 180 lts

Storage

Ion exchange resins require proper care at all times. The resins must never be allowed to become dry. The drums should therefore be always kept in shade. Since INDION CAM 14 is supplied in highly regenerated

condition, any exposure to atmospheric air must be avoided as this will convert it to the carbonate form. The resin drums should therefore be kept in tightly closed condition.

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 state-of-the-art ISO 9001 and ISO 14001 certified manufacturing facility at Ankleshwar, Gujarat.

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 of Ion Exchange (India) Ltd.

ION EXCHANGE (INDIA) LTD.

Corporate Office

Ion House, Dr. E. Moses Road,
Mahalaxmi, Mumbai 400 011
Tel: +91 22 3989 0909 | Fax: +91 22 2493 8737
E-mail: ieil@ionexchange.co.in

International Division

R -14, T.T.C MIDC, Thane - Belapur Road,
Rabale, Navi Mumbai 400 701
Tel: +91 22 3989 0909 / 3913 2400 | Fax: +91 22 2769 7918
E-mail: export.sales@ionexchange.co.in

OFFICES

Regional	Telephone	Fax	E-mail
Chennai	+91 44 3989 0909 / 3910 2900	+91 44 2815 3361	checro@ionexchange.co.in
Delhi	+91 11 3989 0909 / 3054 3200	+91 11 2577 4837	delcro@ionexchange.co.in
Kolkata	+91 33 3989 0909 / 3043 3400	+91 33 2400 4345	calcro@ionexchange.co.in
Vashi	+91 22 3989 0909 / 3913 2300	+91 22 2788 9839	mumcro@ionexchange.co.in
Branch			
Bengaluru	+91 80 2204 2888	+91 80 2853 2002	bngcro@ionexchange.co.in
Bhubaneswar	+91 674 326 9525 / 257 1491		bbsr@ionexchange.co.in
Chandigarh	+91 172 274 5011	+91 172 274 4594	delcro@ionexchange.co.in
Hyderabad	+91 40 3066 3101 / 02 / 03	+91 40 3066 3104	hydcro@ionexchange.co.in
Lucknow	+91 522 319 9911	+91 11 2577 4837	lko.general@ionexchange.co.in
Vadodara	+91 265 302 7489 / 90	+91 265 2352 932	brdcro@ionexchange.co.in
Visakhapatnam	+91 891 324 6253	+91 891 257 2007	sales.vizag@ionexchange.co.in

Factories: Ankleshwar | Hosur | Patancheru | Rabale | Verna

All India Service and Dealer Network

www.ionindia.com | www.ionresins.com

MATERIAL SAFETY DATA SHEET

Revision Date : 01/06/2011

1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY

Identification of the substance / preparation :

Product Name	INDION CAM 14, CAM 19
Chemical Name	Crosslinked Polystyrene with Sulphonic acid and quaternary amine functionality
Ionic Form	H ⁺ / OH ⁻
Use of the substance/preparation	
Main use	Water Purification

Identification of the Company :

Company undertaking Identification	ION EXCHANGE (INDIA) LIMITED
Address	Ion House, Dr. E. Moses Road, Mahalaxmi, Mumbai 400 011.
Telephone	+91(022) 3989 0909
Telefax	+91(022) 2493 8737
Supplier	ION EXCHANGE (INDIA) LIMITED
Address	Ion House, Dr. E. Moses Road, Mahalaxmi, Mumbai 400 011.
Telephone	+91(022) 3989 0909
Telefax	+91(022) 2493 8737
Emergency phone number	
Telephone	+91(022) 3989 0909

2. COMPOSITION/INFORMATION ON INGREDIENTS

Description	Concentration
Functionalised co-polymer	40 – 50% (Styrene/divinylbenzene)
Moisture content	50 – 60%

3. HAZARDS IDENTIFICATION

Contact with eyes	Irritating to eyes (R36)
Contact with skin	Mildly irritating to skin.
Ecological hazards	May change the pH of receiving waters in case of major spillages.

4. FIRST AID MEASURES

Contact with skin

Remove contaminated clothing.

Contact with eyes

Remove particles and wash affected area with water.

Immediately wash out with plenty of water and remove all particles.

Ingestion

Seek medical attention if irritation persists.

Give 200 – 300 ml water to drink.

Never give anything by mouth to an unconscious person.

Inhalation

Seek immediate medical attention.

Remove patient to fresh air.

Seek medical advice.

5. FIRE- FIGHTING MEASURES

Incase of fire, use foam, carbon dioxide or dry agent.

Substance evolves toxic fumes, wear self-contained breathing apparatus (see Section 10).

Wear full protective clothing including chemical protection suit.

Prevent run off water from entering drains if possible.

If polluted water reaches drainage systems or water courses, immediately inform appropriate authorities.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Keep people away.

Floor may be slippery, take care to avoid falls.

Environmental precautions

Do not allow to enter public sewers and water courses.

Clean up actions

Sweep-up and transfer to plastic containers for recovery or disposal, according to advise in section 13.

7. HANDLING AND STORAGE

Handling

The usual precautions for handling chemicals should be observed.

Risk of static discharge from dry beads.

Storage

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls

No special precautions are required for this product.

Occupational exposure controls

Respiratory protection

Not required for normal operation.

Hand protection

Wear suitable gloves.

Eye protection Wear safety glasses or goggles.
An eyewash facility should be available.

Skin protection Wear chemical protective overalls.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance Yellow to brown coloured spherical beads

Physical state Solid

Odour No odour

Important information for human health, safety and environment

pH as supplied Neutral in aqueous slurry

Boiling point Not applicable

Flammability point The preparation starts burning over 230° C only if ignited.

Flammability The preparation is not flammable before the evaporation of moistening water

Explosive properties None

Burning properties None

Specific gravity 1.15, approximately

Solubility In water : virtually insoluble

In oil : insoluble

Not applicable

Partition coefficient
n-octanol/water

Viscosity Not applicable

Flash point Not applicable

Melting point Not applicable

Auto-ignition temperature Over 500° C

10. STABILITY AND REACTIVITY

Conditions to avoid

This material is considered stable under normal conditions.

Materials to avoid

Incompatible with strong oxidizing agents.
Contact with strong oxidizers, especially nitric acid, may produce low molecular weight organics that may form explosive mixtures.

Hazardous decomposition products

Combustion products may include monomers, residual organics, carbon and sulphur oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological Information

LD 50 (Oral, Rat) : Not applicable
 LD 50 (dermal, rabbit) : Not applicable
 LC50 (inhalation, rat) : Not applicable
 Irritation to eyes (rabbit) : Slightly Irritating
 Skin corrosion / irritation (rabbit) : No data available
 Ignition : No hazards anticipated if material has not
 exchanged hazardous substances.
 No evidence of carcinogenic effects.
 No evidence of teratogenic effects.
 No evidence of mutagenic effects.

Carcinogenicity

Teratogenicity

Mutagenicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

Information not available.

Mobility

Virtually insoluble in water.
 The product is not volatile.

Persistence and biodegradability

The product is not readily biodegradable

Risk of bioaccumulation

None

Other adverse effects

May change the pH of receiving waters in case of major spillages.

13. DISPOSAL CONSIDERATIONS

The product as delivered is a non-hazardous waste.

The used product may be subject to different classifications. In any case the product shall be disposed off, according to local, regional and national regulations.

EU number for exhausted or saturated ion exchange resins used for the preparation of drinking water or water for industrial use is 19 09 05.

EU number for exhausted or saturated ion exchange resins used in waste water treatment plants not otherwise specialized is 19 08 06.

14. TRANSPORT INFORMATION

Ion exchange resins as supplied are not classified as hazardous for transport.

Classification for ROAD and RAIL transport: Not regulated
 (Not dangerous for transport)

Classification for SEA transport: Not regulated
 (Not dangerous for transport)

Classification for AIR transport: Not regulated
(Not dangerous for transport)

15. REGULATORY INFORMATION

Risk phrases

The product as supplied is non hazardous.

R 36 : Irritating to eyes.

S 26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 39 : Wear eye/face protection

16. OTHER INFORMATION

Note :

Industrial grade products are not intended for analytical, food, medical and pharmaceutical applications without preliminary extensive purification.

Whilst every effort has been made to be as accurate as possible, Ion Exchange (India) Limited provides no warranty with respect to this information and disclaims all liability associated with its use.