ION EXCHANGE
Refreshing the Planet

INDION® 190

Description

INDION 190 resin is a macroporous strongly acidic cation exchanger developed for heterogeneous acid catalytic application.

INDION 190 is supplied in dry form as opaque, grey coloured spherical beads. A proper mix of high cross linking and porosity gives this product outstanding physical stability while maintaining the high exchange capacity of conventional gel resins.

The unique structure of INDION 190 provides genuine porosity and a strong matrix together, with small volume change in different solutions and solvents. The large surface area leads to high catalytic activity. The functional groups throughout the entire structure are readily accessible to liquid or gaseous reactants thus ensuring efficient performance. The main applications are alkylation, esterification, etherification, condensation, hydrolysis and also for specialised applications such as MTBE.

Characteristics

Appearance	:	Opaque grey to dark grey beads
Matrix	:	Styrene divinylbenzene copolymer
Functional Group	:	Sulphonic acid
Ionic form as supplied	:	Hydrogen
Concentration of acid sites	:	4.7 meq/dry g, minimum
Moisture content	:	3 %, maximum
Particle size range	:	0.42 to 1.2 mm
> 1.2 mm	:	5.0%, maximum
< 0.42 mm	:	5.0%, maximum
Maximum operating temperature	:	130^{0}C
Operating pH range	:	0 to 7

Reuse of INDION 190

On completion of the catalytic reaction, the resin should be filtered off the products. The solvent as well as unreacted reactants associated with the resin should be washed off by rinsing with either solvent or one of the reactants. These washings can then be reused in subsequent batch processes. If water formation exists in the reaction after filtration, dry the resin. This can be carried out in an oven at about 90ºC to 100°C for 6 to 10 hours to reduce moisture content to less than 5%.

Packing

HDPE carbouys with inner
double plastic liner bags 25 / 50 kgs

Storage

Ion exchange resin catalysts are hygroscopic in nature. Therefore it is essential to store the dry INDION 190 in tightly packed containers, to prevent absorption of atmospheric moisture. In case moisture has been absorbed, it can be dried at 90°C - 100°C as mentioned above.

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.

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		sales.vizag@ionexchange.co.in

Factories: Ankleshwar | Hosur | Patancheru | Rabale | Verna

All India Service and Dealer Network

www.ionindia.com | www.ionresins.com

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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 190**
Chemical Name	Crosslinked Polystyrene with Sulphonic acid functionality
Ionic Form	Hydrogen

Use of the substance/preparation

Main use	Ion exchange / catalyst

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	> 99 % (Styrene/divinylbenzene)
Moisture content	< 1 %

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. Remove particles and wash affected area with water.
Contact with eyes	Immediately wash out with plenty of water and remove all particles. Seek medical attention if irritation persists.
Ingestion	Give 200 – 300 ml water to drink. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Inhalation	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	Gray to dark gray coloured spherical beads
Physical state	Solid
Odour	No odour
Important information for human health, safety and environment	
pH as supplied	Acidic in aqueous slurry
Boiling point	Not applicable
Flammability point	The preparation starts burning over 230^{o} C only if ignited.
Flammability	The preparation is not flammable before the evaporation of moistening water
Explosive properties	None
Burning properties	None
Specific gravity	Not available
Solubility	In water : virtually insoluble In oil : insoluble
Partition coefficient n-octonol/water	Not applicable
Viscosity	Not applicable
Flash point	Not applicable
Melting point	Not applicable
Auto-ignition temperature	Over 500^{o} C

10. STABILITYAND 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.

Carcinogenicity No evidence of carcinogenic effects.

Teratogenicity No evidence of teratogenic effects.

Mutagenicity No evidence of mutagenic effects.

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

The product as supplied is non hazardous.

Risk phrases

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.