

INDION® ORC

Description

INDION ORC is a catalyst which enhances electrochemical redox process to remove oxidants such as chlorine and hydrogen peroxide.

Super chlorination of raw water is done in the food and beverage industry. INDION ORC is recommended for dechlorination to reduce the free chlorine level to nil.

INDION ORC is effective for decomposition of

hydrogen peroxide even at a very high concentration of 500 ppm.

Being a catalyst it does not get consumed in the reaction hence, the process becomes cost competitive over existing treatment technologies.

Half dechlorination value of INDION ORC is found far superior over commercially available activated carbon.

Characteristics

Appearance	:	Black beads
Shipping weight *	:	800 kg/m ³ , approximately
Particle size range	:	0.3 to 1.2 mm

Operating Parameters

Minutes bed depth	:	0.8 to 1.0 m
Empty bed contact time (EBCT)	:	1.2 - 1.5
Service flow rate	:	40 - 50 BV/h
Backwash flow rate	:	20 - 30 BV/h
Free board	:	40 - 50 %
pH	:	>7
TSS	:	<5 ppm
Oil and grease	:	Nil
Organic matter	:	<2 ppm
Turbidity	:	<5 NTU

Recharge of Unit

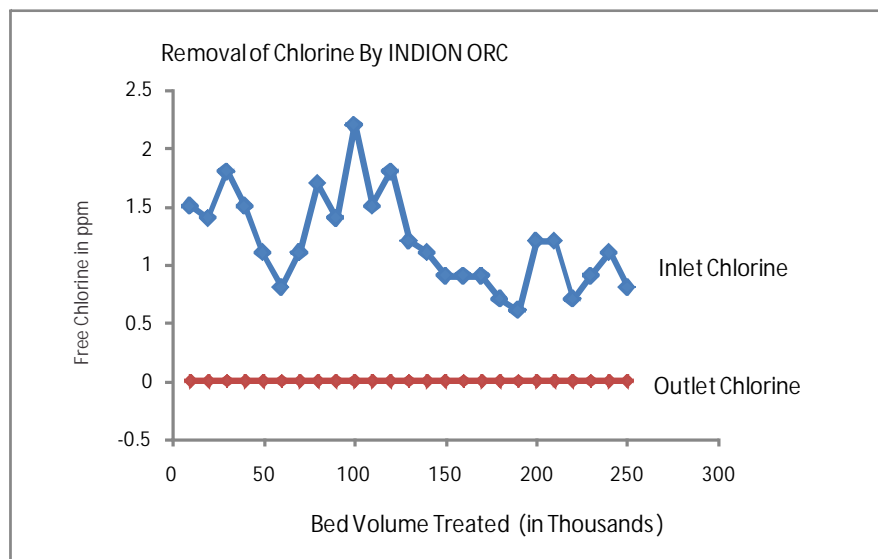
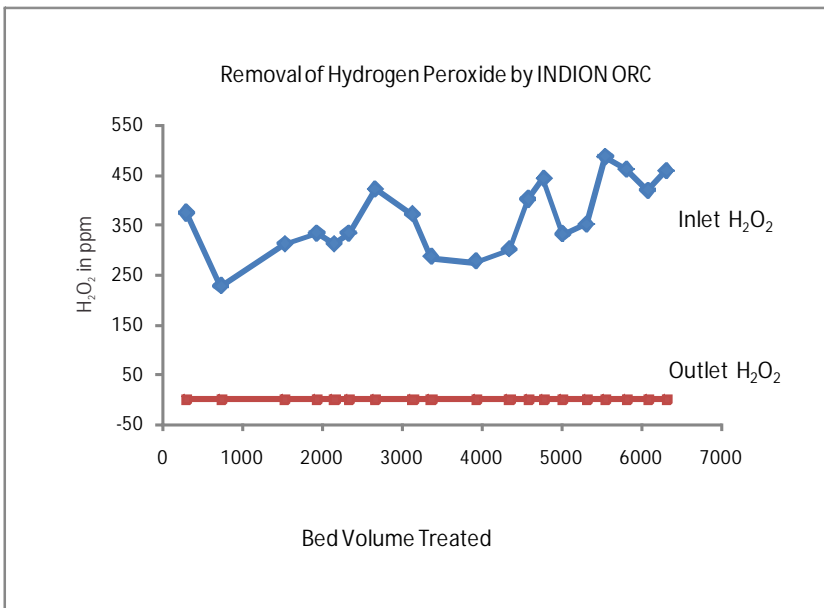
Backwash with chlorine free water is sufficient to recharge the unit.

Backwash for 30 minutes after 8 to 10 hours of service, subject to inlet water quality

Technical Superiority of INDION ORC Media in Comparison with Activated Carbon Filter

Parameters	Activated Carbon with 450 - 500 Iodine value	INDION ORC Media
Life of media (year)	1	2
Empty bed contact time (minutes)	2.5 - 3.0	1.2 to 1.5
Half dechlorination value (cm)	7.0	4 to 4.5
Service flow rate (BV/h)	20	40 - 50
Backwash flow rate (BV/h)	5 - 10	20 - 30

Pilot Scale Performance of Media



Storage

INDION ORC require proper care at all times. The catalyst 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 catalyst drum in the shade. Recommended storage temperature is between 20° C to 40° C.

Packing

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

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. Please contact our regional / branch offices for current product specifications.

INDION is the registered trademark of Ion Exchange (India) Ltd.

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01 MATERIAL SAFETY DATA SHEET

Revision Date : 01/07/2014

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

Identification of the substance / preparation :

Product Name	INDION ORC
Chemical Name	Polymer beads
Ionic Form	NA
Use of the substance/preparation	
Main use	Dechlorination / Removal of oxidants

Identification of the Company :

Company undertaking Identification	ION EXCHANGE (INDIA) LIMITED
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Address	Ion House, Dr. E. Moses Road, Mahalaxmi, Mumbai 400 011.
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Emergency phone number	
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Description	Concentration
Functionalised co-polymer	NA
Moisture content	NA

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.

Ingestion

Seek medical attention if irritation persists.
Give 200 – 300 ml water to drink.

Inhalation

Never give anything by mouth to an unconscious person.
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.

Storage

Risk of static discharge from dry beads.

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 Black 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 1.2, approximately
Solubility In water : virtually insoluble
 In oil : insoluble
Partition coefficient n-octanol/water Not applicable
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.