

**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 454  
**Chemical Name** Crosslinked Polystyrene with quaternary amine functionality  
**Ionic Form** Chloride

**Use of the substance/preparation**

**Main use** Ion Exchange / adsorbent

**Identification of the Company**

**Company undertaking** ION EXCHANGE (INDIA) LIMITED

**Identification**

**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

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Dr. E. Moses Road,  
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**Emergency phone number**

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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

**Description** Concentration  
**Functionalised co-polymer** > 88 % (Styrene / divinylbenzene)  
**Moisture content** < 12 %

**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**

<b>Contact with skin</b>	Remove contaminated clothing. Remove particles and wash affected area with water.
<b>Contact with eyes</b>	Immediately wash out with plenty of water and remove all particles. Seek medical attention if irritation persists.
<b>Ingestion</b>	Give 200 – 300 ml water to drink. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
<b>Inhalation</b>	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**

<b>Personal precautions</b>	Keep people away. Floor may be slippery, take care to avoid falls.
<b>Environmental precautions</b>	Do not allow to enter public sewers and water courses.
<b>Clean up actions</b>	Sweep-up and transfer to plastic containers for recovery or disposal, according to advice in section 13.

**7. HANDLING AND STORAGE**

<b>Handling</b>	The usual precautions for handling chemicals should be observed.
<b>Storage</b>	Risk of static discharge from dry beads.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<b>Exposure controls</b>	No special precautions are required for this product.
<b>Occupational exposure controls</b>	
<b>Respiratory protection</b>	Not required for normal operation
<b>Hand protection</b>	Wear suitable gloves
<b>Eye protection</b>	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**

Off - white coloured powder

**Physical state**

Solid

**Odour**

No odour

### Important information for human health, safety and environment

**pH as supplied**

Neutral

**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**

1.27, approximately

**Solubility**

In water : virtually insoluble

In oil : insoluble

**Partition coefficient**

Not applicable

**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**

No data are available for this material. The information given is based on properties of materials with similar composition.

**Toxicological Information**

LD 50 (Oral, Rat) : 3000 mg/kg of body weight  
 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**
- Mobility**

Information not available.  
 Virtually insoluble in water.  
 The product is not volatile.

- Persistence and biodegradability**
- Risk of bioaccumulation**
- Other adverse effects**

The product is not readily biodegradable  
 None  
 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.

S39 : 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.**