instrAction® T

Resin for the removal of heavy metals from drinking water and aqueous industry waste.

General Description

instrAction® T series resins are a newly developed polyamine hydrogel resin dedicated to the removal of heavy metals from aqueous media. The resin was designed and tested by instrAction. T-type resins comprise a porous crosslinked polyvinyl amine backbone, which forms its binding and capturing sites, thus resulting in high chemical stability. The selectivity of this resin series can be adjusted according to customer needs. They have excellent chemical stability as well as good mechanical stability at moderate back pressure. T-type resins were developed for PoU and industrial applications and can be regenerated.

Performance Benefits

General

- T-Type resins are regeneratable. After 1000 regeneration cycles ca. 85% of starting binding capacity retained
- Homogeneous flow at moderate back pressure.
- Linear pressure drop gradient for the whole bed depth.
- Low rinse water demand.
- Mixing/combination with other filter media like activated carbon or ion exchange resins is possible.

Heavy Metal Removal

- Heavy metals are removed from tap water below the detection limit in a single filtration step.
- Reliable depletion rate with outstanding capacities* and stable bindings.
- Exceptional and tunable selectivity – only heavy metals are addressed.
- Salt tolerance - the capacity for heavy metals will not be influenced by sodium, potassium, calcium or magnesium – minerals remain unaffected.
- Removal of precious metals, rare earth elements and base metals.

About instrAction

instrAction has been committed to implementing breakthrough innovations for the water treatment industry. Since its founding, instrAction has been expanding its activity at a fast pace. The know-how combines the selectivity of absorber resins with the demands for modern water purification.

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* depending on cartridge dimension, particle size and bed height

Typical Application

instrAction® T series resins are especially designed for the use in drinking water systems and filters for commercial and industrial applications. The main application of the instrAction Resin is the removal of heavy metals and special micropollutants through simple filtration, combined with longevity, robustness and high performance.
The salt-tolerant T-series resins can be recycled for more than 1000 cycles without significant loss of performance. Captured metals might be recycled if desired.

Resin Characteristics

Resin Type	instrAction® T
Available Particle Sizes	• 30 – 70 µm, irregularly shaped resin • 100 – 300 µm, irregularly shaped resin • 315 - 500 µm, irregularly shaped resin • 600 – 1400 µm, irregularly shaped resin
Matrix	Crosslinked functionalized polyvinyl amine
Shipment Form	Wet bulk resin, flushed with 1 M NaCl
Appearance	Tan to light brown
Functional Groups	Amino groups

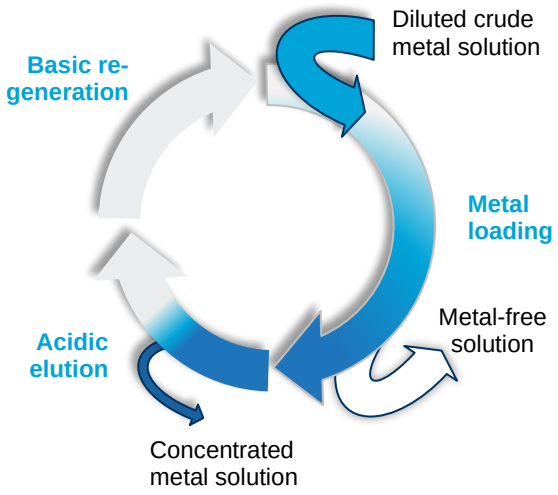
Product Data

Applicable pH range	0 - 14
Water Content	50 to 60 % (w/w) **or** dried to 40 +/- 2% (w/w) for flowability
Bulk Density	≈ 0,5 g/cm³ at 40% moisture
Operating temperature	4 – 60°C
Regeneration	Up to 1000 cycles
Volume Change	Ca. 15%
Pre-Treatment:	Flush with 10 BV water at 10 BV/h
Storage Conditions:	at 10 - 30°C protected from light

Technical Integration

- Preferable separate packed layer of resin to guarantee constant water flow through the resin bed.
- Volume and particle size depend on allowed back pressure, required flow rate and cartridge dimension.
- Resin can be combined with any other filtration technology.

Recycling



- > 1000 cycles with one resin filling
- Frequent replacement unnecessary
- Outstanding resin life time
- High impact on waste volume reduction
- Saving on set-up time and resin
- pH-Stability: 1 - 14

Rinsing with the corresponding bed volume (BV) in the following order:

- 1 M HCl (aq.), 2-5 BV
- Water, 2 BV
- 1 M NaOH (aq.), 2-5 BV
- Water, 2 BV
- Buffer 1 M pH 8 until equilibrated, if necessary

Additional Information & Regulations

Toxicity

The safety data sheet must be followed. It contains additional data on product description, transport, storage, handling, safety and ecology.

Disposal

In the European Community resins for water filtration have to be disposed of according to the European waste nomenclature which can be accessed on the internet-site of the European Union.

Storage

It is recommended to store resin at temperatures above the freezing point of water under the roof in dry conditions without exposure to direct sunlight.

Disclaimer

This document contains important information and must be read in its entirety.

The instrAction resins were developed for the purification of drinking water as well as industrial applications. They are dedicated to the binding of heavy metals or bacteria from solution. The resins exhibit a remarkable buffer capacity, therefore careful control of the pH value is strongly recommended, to ensure reproducible performance.

The instrAction resins are usually applied in cartridges, columns or stirred tanks. The use as bulk material is limited to exceptional cases.

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Our products are sold per the current version of our General Conditions of Sale and Delivery.

If any questions occur, please contact an instrAction specialist!

instrAction. Pioneering water filtration technology.