

## ResinTech SIR-900

### INTRODUCTION

**ResinTech SIR-900** is a high-capacity, synthetic absorbent media designed specifically for the removal of lead, arsenic, and fluoride from water. This media leverages adsorption and chemical reaction processes, providing high operating capacity and minimal leakage, making it suitable for diverse water treatment applications.

### COMPOSITION & PHYSICAL CHARACTERISTICS

Chemical Structure:	Crystalline aluminum oxide
Physical Form:	Tough, uniform granules
Particle Size Distribution:	+28 mesh: 10% -48 mesh: 5%
pH Range:	Operates effectively between pH 4 to 10.
Water Retention:	Less than 5%
Solubility:	Nil.
Shipping Weight:	47 lbs/cu.ft.

### FEATURES AND BENEFITS

**Selective Removal** - Effectively removes lead, arsenic, and fluoride.

**Durability** - Minimal shrinkage, swelling, and low pressure loss.

**Versatile pH Range** - Functions efficiently across a wide pH spectrum.

**Stability** - Resistant to physical degradation and operational stresses.

**High Efficiency** - Enhanced surface area and pore distribution maximize capacity.

### OPERATING CONDITIONS

Maximum Temperature:	100°C (212°F).
Maximum Free Chlorine:	1 ppm.
Minimum Bed Depth:	36 inches (preferred depth: 5-7ft)
Backwash Rate:	Ensures 10-25% bed expansion.
Service Flow Rate:	1-2 GPM/cu.ft.



## APPLICATIONS & PERFORMANCE

### 1. Arsenic Removal

- Effective for inorganic arsenic species (arsenite and arsenate).
- Optimal performance at pH 5.5 to 6.0.
- Enhanced capacity with higher temperatures and reduced Total Dissolved Solids (TDS).
- Capacity:
  - Equilibrium: ~0.66 lb/cu.ft. (1,000 ppm TDS, 25°C, 1 mg/L As).
  - Operating: ~10% of equilibrium capacity.
- Regeneration: Sodium hydroxide (2-4%, 3-4 lbs/cu.ft.), followed by pH neutralization.

### 2. Fluoride Removal

- Removed via chemical reaction with the media.
- Optimal at pH 5.5 and 1 GPM/cu.ft. flow rate.
- Capacity: ~0.2 lb/cu.ft.; breakthrough leakage <0.1 mg/L.
- Regeneration: Similar to arsenic removal conditions.

### 3. Lead Removal

- High adsorption efficiency ( $\geq 98\%$  lead removal).
- Capacity: ~0.4 lb/cu.ft.
- pH Range: Above 6.0 for optimal performance; below 10.0 to prevent lead precipitation.
- Regeneration: Not typically feasible.

## SAFETY AND HANDLING

Avoid mixing with strong oxidizing agents (e.g., nitric acid), which may result in hazardous reactions.

Material Safety Data Sheets (MSDS) are available and recommended for detailed safety information.

## CONCLUSION

ResinTech SIR-900 provides a reliable solution for the selective removal of lead, arsenic, and fluoride in water treatment applications. With its robust design, high efficiency, and broad operational adaptability, it serves as an effective medium in both municipal and industrial water purification systems.

**Disclaimer:** Operational data and suggestions are based on reliable information but come with no guarantees. Users are advised to adhere to safety guidelines and consult with technical representatives for specific applications.

