



## Product Data Sheet

### AmberSep™ GT75 Chelating Resin

Industrial-grade Complexing Resin

#### Description

AmberSep™ GT75 Chelating Resin is alkyl thiol-functionalized, which provides very pronounced selectivity for certain metal ions such as mercury, rhodium, copper, silver, cadmium, and lead.

AmberSep™ GT75 is a uniform particle size resin that has been developed for the rapid removal of mercury from different solutions and gaseous streams. Although it has a lower capacity than AmberSep™ GT74, it can be regenerated more readily and efficiently with hydrochloric acid.

The special properties of AmberSep™ GT75 make it useful for problems where removal of metal ions in addition to Hg—such as Cu, Ag, Pb, and Cd—is also desired. Applications may be found in different fields of chemical technology, for example: wastewater treatment, flue gas desulfurization blowdown, recovery of solutions and metals in the plating industry, recovery of catalysts, and removal of interfering ions in hydrometallurgy.

AmberSep™ GT75 is insoluble in common solvents and stable over the entire pH range. Oxidizing media should be avoided.

#### Applications

- Wastewater treatment
- Flue gas desulfurization blowdown
- Electroplating
- Hydrometallurgy
- Chlor-alkali streams for mercury cell electrodes

#### Typical Properties

##### Physical Properties

|                  |                                       |
|------------------|---------------------------------------|
| Copolymer        | Styrene-divinylbenzene                |
| Matrix           | Macroporous                           |
| Type             | Chelant                               |
| Functional Group | Alkyl thiol                           |
| Physical Form    | White to tan, opaque, spherical beads |

##### Chemical Properties

|                          |                |
|--------------------------|----------------|
| Ionic Form as Shipped    | H <sup>+</sup> |
| Total Exchange Capacity  | ≥ 0.8 eq/L     |
| Water Retention Capacity | 35 – 40%       |

##### Particle Size §

|                        |             |
|------------------------|-------------|
| Particle Diameter      | 575 ± 50 µm |
| Uniformity Coefficient | ≤ 1.1       |

##### Density

|                 |         |
|-----------------|---------|
| Shipping Weight | 675 g/L |
|-----------------|---------|

§ For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 45-D00954-en).

## Suggested Operating Conditions

|                               |                                                                 |
|-------------------------------|-----------------------------------------------------------------|
| Maximum Operating Temperature | 60°C (140°F)                                                    |
| Bed Depth, min.               | 1000 mm (3.1 ft)                                                |
| Flowrates                     |                                                                 |
| Service                       | 10 BV*/h (1.25 gpm/ft <sup>3</sup> )                            |
| Backwash                      | About 12 m/h (5 gpm/ft <sup>2</sup> ) with water at 20°C (68°F) |
| Total Rinse Requirement       | 2 – 3 BV (15 – 22.5 gal/ft <sup>3</sup> )                       |
| Regenerant                    | Concentrated HCl                                                |

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin or 7.5 gal per ft<sup>3</sup> resin

## Application Information

The selectivity sequence of AmberSep™ GT75 Chelating Resin is:

Hg > Ag > Cu > Pb > Cd > Ni > Co > Fe > Ca > Na

The resin has a pronounced preference for copper, lead, and cadmium ions, which are removed in considerable quantities, even from solutions containing only 1 meq/L of metal and a large excess of Na<sup>+</sup> ions.

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Please be aware of the following:

- **WARNING:** Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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