

## DEXSORB+

### A High Affinity Adsorbent for the Removal of PFAS from Water

#### Features and Benefits

DEXSORB+ reduces PFAS (per- and polyfluoroalkyl substances) to non-detect levels (1–5 ppt) in water impacted with environmentally relevant concentrations. It offers advantages of high operating capacity, excellent kinetics, and ambient-condition regeneration. It works efficiently against short and long chain PFAS and performance is not affected by natural organic matter or other water constituents. Isolated in powder form, DEXSORB+ has been adapted to multiple formats (e.g., granules and extruded blocks) for use in Analytical Testing, Household Filtration and Municipal Water Treatment. DEXSORB+ has been applied in diverse water matrices, including drinking water, groundwater, surface water, wastewater, and leachate without loss in performance.

#### Chemical and Physical Characteristics

Polymer Structure	crosslinked cyclodextrin
Appearance	yellow powder & granules
Adsorption Mechanism	hydrophobic & electrostatic
Surface Area	up to 450 m <sup>2</sup> /g
Avg. Apparent Density	0.25 g/cc
Effective Size (powder)	avg. 78 μm
Effective Size (granules)	212 – 500 μm; 500 – 1500 μm
Temperature Limit	300 °C (572 °F)

#### Strong Affinity for PFAS

DEXSORB+ has demonstrated high adsorption and capacity for PFAS. Isotherm data for PFAS on DEXSORB+ indicate q<sub>max</sub> for PFOA and PFOS above 180 mg/g and 90 mg/g for GenX, showing its ability for removal of short and long chain PFAS. Values also correspond to removal data showing high affinity of DEXSORB+ for PFAS at low concentrations, making it suitable for concentration levels found in actual drinking water and wastewater environments.

#### Excellent Kinetics & High Operating Capacity

Kinetic studies show that removal performance for most PFAS reaches equilibrium within five minutes. Furthermore, the efficiency and kinetics of PFAS removal are not affected when DEXSORB+ powder is incorporated in other form factors, which the company has developed for use in short contact water filtration systems.

#### Large Scale Manufacturing

Through a collaboration with Argonne National Laboratories (ANL), DEXSORB+ has been optimized for large scale synthesis. Cyclopure has installed a pilot product facility with capacity of 60 kg per month. Preparations are under way to support the production of DEXSORB+ for large-scale water treatment applications.

#### Form Factor Versatility

DEXSORB+ is made in powder form and can be applied in multiple forms, such as granular, filter paper, and extruded block. All of these form factors are suitable for environmental testing and monitoring applications, as well as drop-in solutions for residential filtration products. Granules can be prepared in various particle size ranges, including standard 12x40 mesh implementation, creating solution opportunities for municipal drinking water and wastewater treatments systems.

#### Highly Effective Across Multiple Water Matrices

Matrix effects of ground water, surface water, and wastewater were evaluated in head-to-head comparison against Granular Activated Carbon (GAC) and ion exchange resins (IX). Benefiting from size-exclusion, DEXSORB+ outperformed GAC and IX for all performance metrics, exhibiting greater capacity and lower susceptibility to fouling, parameters that are critical measures for an efficient large scale treatment.



Home  
Filtration



Industrial  
Purification



Municipal  
Drinking Water



Municipal  
Wastewater



Analytical  
Testing

