DEXSORB® – Engineered Systems

PFAS-free water by DEXSORB®

cyclopure

PFAS Adsorption For Every Water Source

DEXSORB is a novel adsorbent made with renewable cyclodextrins and designed for use in engineered applications to remove PFAS (per- and polyfluoroalkyl substances). DEXSORB's uniform 0.78-nm hydrophobic cavities provide molecular selectivity for PFAS. Size-exclusion to natural organic matters (NOM), inorganic ions and other matrix effects enable DEXSORB to perform with equal effectiveness in diverse water systems, such as drinking water, groundwater and surface water, wastewater, RO concentrate, and landfill leachate.

High Capacity

DEXSORB has demonstrated over 25x treatment capacity compared to GAC in packed-bed filtration (PBF) systems. This leads to a lower media use rate, with smaller system footprints, lower amounts of media, and higher volumes of treated water.

Superior Hydraulics

Benefitting from sub-nanometer pore structures, DEXSORB performance is not impacted by competing organics, metals, FOG (fat, oil and grease), bioactivity or disinfectants. Unlike other media that can experience biofouling and other matrix effects, DEXSORB PBF systems provide smooth operating hydraulics, unaffected by metal precipitation, biofilm development, and oxidation. In the presence of high turbidity, DEXSORB supports periodic backwash to remove accumulated solids and restore operating hydraulics.

Concentration of PFAS Waste Streams

DEXSORB is uniquely capable of desorption of PFAS after use. Spent media is processed under ambient conditions by a simple solvent wash, where PFAS waste are separated from the adsorbent and concentrated for destruction. Cyclopure has demonstrated a 5,000x concentration factor from treated water to waste stream. Concentrated PFAS waste is available for processing by destruction technologies. A Certificate of Destruction is provided to confirm end of chemical life, avoiding CERCLA liability exposure from PFAS-laden waste associated with other adsorption media.

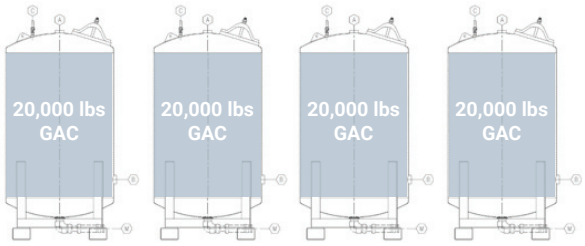
Commercially Ready For Engineered Systems

DEXSORB is commercially produced in large scale volumes. The media is registered under TSCA and is certified for treatment of drinking water under NSF 61. Cyclopure and AECOM have filed a final report to obtain New Technology Approval for water treatment in Massachusetts. To date, DEXSORB has been used to treat over 3 million gallons of PFAS contaminated water in PBF pilot systems throughout the U.S. Cyclopure engineers have broad experience working with engineering firms, government engineers, municipalities, and industrial engineers on projects and installations.

LCA Advantage

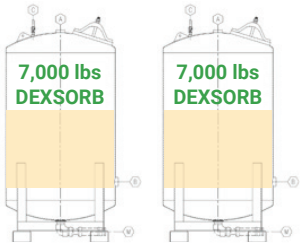
DEXSORB PBF is a highly efficient treatment process for PFAS, with low system costs and CO_2 emissions. DEXSORB is made with renewable cyclodextrins in a low CO_2 process. With high capacity, DEXSORB's media use rate is less than other adsorbents, resulting in reduced media changeout frequency and lower transportation costs. Post treatment desorption of DEXSORB enables separation and concentration of PFAS waste and the regeneration of media for re-use under ambient conditions. Together, these process steps provide a turnkey solution for PFAS treatment with low environmental impact.

GAC Treatment System



GAC packed bed filtration (four 20,000-lb vessels) for removal of **PFOS and 6:2 FTS**; **Replace 20,000 lbs GAC every 6 weeks**

DEXSORB System



DEXSORB packed bed filtration (two 7,000-lb vessels) for removal of **PFOS and 6:2 FTS**; **Replace 7,000 lbs DEXSORB every 36 weeks**