

Cascade Chemistries

COLLOIDALCHEM™



WHAT IS COLLOIDALCHEM?

ColloidalChem is a group of high mobility and low pressure injectable colloidal activated carbon products designed to target difficult-to-treat contaminants like chlorinated volatile organic compounds (CVOCs), benzene/toluene/ethylbenzene/xylenes (BTEX), per and polyfluoroalkyl substances (PFAS), and other pollutants.

HOW DOES IT WORK?

ColloidalChem is an activated carbon colloid consisting of low micron size particles, which allow for effective delivery and distribution within the subsurface without the need for fracturing. Once injected, the particles create an effective treatment zone for contact with the contaminated groundwater plume. As the water flows, contaminants are captured within activated carbon pores, where their concentrations are reduced through sequestration. Our other ColloidalChem formulations couple sequestration with biodegradation, chemical reduction and anchoring chemistries.

Advantages for distribution, contact & residence time

- High surface area makes it especially effective in adsorbing pollutants
- High persistence in the subsurface allows for greater efficacy against recalcitrant chemicals
- Injectable colloidal activated carbon that is suited for highly specialized high-flow applications

Benefits of activated colloidal carbon

- Shorter time frame to achieving groundwater targets
- Shorter time frame to reducing risk starting during active remediation projects
- Sustainable groundwater reductions
- Minimized breakdown products or metals conversion to a higher risk oxidation state
- Eliminates safety or site infrastructure risks associated with hazardous chemistries
- Easily integrated with other remediation technologies or chemistries



For more information, visit
[www.cascade-env.com/
cascade-chemistries](http://www.cascade-env.com/cascade-chemistries)

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TURNKEY SOLUTIONS

While effective chemistries are a key part of successful remediation solutions, Cascade's turnkey solution meets the overall in situ remediation objective "to make contact with contaminant mass for a long enough period of time to achieve destruction." Cascade adds significant value and higher performance to the application its Chemistries by providing:

- High resolution design optimization through our MIHPT and Waterloo^{APS} subsurface technologies to identify target zones based on mass, lithology, and hydraulic conductivity.
- Bench-scale and column testing as needed.
- Advanced automated injection and fracturing technologies for both liquids and solid slurries.
- Client design support for chemistry dosing and critical injection parameters, including spacing and injection volumes and concentrations based on geology and hydraulic conductivity.
- Water hydraulics testing and field design optimization to eliminate any full-scale unexpected conditions.