Cascade **Chemistries**
COLLOIDALCHEM™

WHAT IS COLLOIDALCHEM?

ColloidalChem is an injectable colloidal activated carbon product designed to target difficult-totreat 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 colloidal carbon product consisting of low micron size particles, which allow for effective delivery and distribution within the subsurface. Once injected, the particles demobilize and 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, neutralization, destruction, and biodegradation.

Advantages for distribution, contact & residence time

- High surface area makes it especially effective in adsorbing pollutants and providing surface oxidation, reduction, biodegradation and metal complexing
- High persistence in the subsurface allows for greater efficacy against recalcitrant chemicals
- Injectable colloidal activated carbon that is suited for transmissive and heterogeneous lithographies.

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

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For more information, visit
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 WaterlooAPS 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.

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