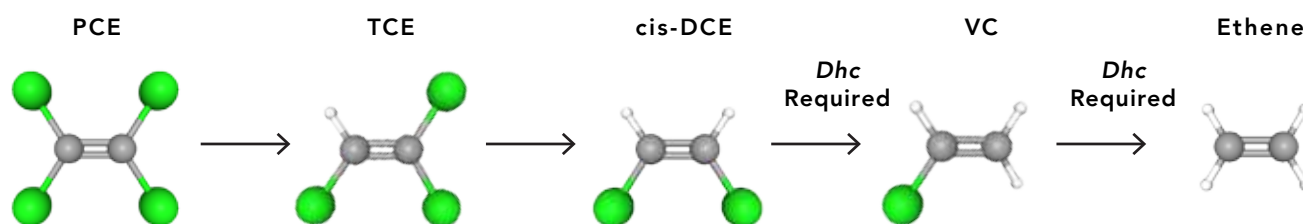


# SDC-9

## Bioaugmentation Culture for Groundwater Remediation

SDC-9™ is a field proven, highly effective consortium of microorganisms for in situ bioremediation of chlorinated solvents. SDC-9 contains multiple strains of *Dehalococcoides mccartyi* (*Dhc*), the primary species known to completely dechlorinate PCE and TCE to non-toxic ethene. For sites where *Dhc* are absent or present at low concentrations bioaugmentation provides the necessary bacteria for complete dechlorination. Even when native *Dhc* are present, bioaugmentation can provide substantial benefits by using electron donor more efficiently and by increasing dechlorination rates to quickly reach your treatment goals.



## Benefits - Higher Dechlorination Rates

SDC-9 contains a natural consortium of bacteria that includes not only dechlorinating microbes but other beneficial bacteria that support *Dhc* growth by supplying required substrates and growth factors. "*Dhc* in mixed cultures exhibit shorter lag times following transfers, grow faster and exhibit higher dechlorination rates than pure *Dhc* cultures" (Bioaugmentation for Groundwater Remediation, 2013).

## Benefits - Low pH Tolerant

SDC-9 continues to perform at pH levels as low as 5.5 (Vainberg and Steffan, 2014), although pH levels above 6.0 are recommended for more effective dechlorination.

## Application

SDC-9 is commonly injected between rounds of anaerobic water and electron donor, which minimizes exposure to oxygen while mixing SDC-9 throughout the treatment area. Recommended dosing for SDC-9 is  $1 \times 10^7$  *Dhc* cells per liter in target zones (Lu et al., 2006).

## Contaminants Treated by SDC-9:

Tetrachloroethene (PCE)	1,1,2,2-Tetrachloroethane (TeCA)
Trichloroethene (TCE)	1,1,1-Trichloroethane (TCA) 1,2-
cis-Dichloroethene (cDCE)	Dichloroethane (DCA) Carbon
trans-Dichloroethene (tDCE)	Tetrachloride (CT) Chloroform
1,1-Dichloroethene (DCE)	(CF) Dichloromethane (DCM)
Vinyl Chloride (VC)	Hydrochlorofluorocarbon (HCFC)
Freon 11	Tetrafluoroethene (TFE)
Freon 113	

## SDC-9 Contains:

*Dehalococcoides mccartyi*  
*Dehalobium chlorocoercia*  
*Dehalobacter*  
*Desulfovibrio spp.*  
*Desulfitobacterium spp.*  
*Methanogenic bacteria*  
*Sulfate Reducing bacteria*

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### Product Characteristics

Parameter	Unit	Specification
Cell Count	<i>Dhc</i> Cells/Liter	$\geq 1 \times 10^{11}$
Density	g/cm <sup>3</sup>	0.9 - 1.1
pH	Standard Units	6.0 - 8.0
Appearance		Light Greenish, Murky Liquid
Odor		Musty



### Packaging

SDC-9 is shipped in 19L (5-gallon) stainless steel kegs. The consortium can also be concentrated up to 10X and shipped in 1.75, 2.5, or 3-gallon kegs. Kegs are pressurized with Nitrogen and stored in chilled coolers. Calibrated delivery system (1, 2 or 3.5 L) and fittings are provided. Users will need to provide an inert gas cylinder (Nitrogen or Argon) and regulator.

### Storage

Keep containers tightly closed in a cool, well-ventilated area. SDC-9 may be stored for up to 3 weeks at temperature 2-4° C. Avoid freezing conditions. Avoid exposure to oxygen.

### Safety

SDC-9 is a non-toxic, non-pathogenic, non-genetically modified, naturally occurring consortium of microbes. No known hazards are associated with exposure to this product. Nevertheless, appropriate Personal Protective Equipment is recommended when handling this product.