

## Adsorb-it® Sorbent's Impact on the Environment

Sorbents used in the environment should be environmentally benign. A standard test of potential environmental harm is the Toxicity Characteristics Leachate Procedure (TCLP test) which measures the concentration of chemicals of concern released into the environment from solid substances.

### Method

Adsorb-it® sorbent material was submitted to an analytical laboratory with NELAP (National Environmental Laboratory Accreditation Program) accreditation for the full suite of TCLP analyses. The results of the tests are summarized below.

### Results

#### Volatile Organic Compounds (VOCs) / EPA Method 1311 / 8260B

Parameter	Result	Detection Limit	Units	Maximum Contaminant Level
Vinyl Chloride	ND*	0.2	mg/L	0.2
1,1-Dichloroethene	ND*	0.2	mg/L	0.7
2-Butanone	ND*	1	mg/L	200
Chloroform	ND*	0.2	mg/L	6.0
Carbon Tetrachloride	ND*	0.2	mg/L	0.5
Benzene	ND*	0.2	mg/L	0.5
1,2-Dichloroethane	ND*	0.2	mg/L	0.5
Trichloroethene	ND*	0.2	mg/L	0.5
Tetrachloroethene	ND*	0.2	mg/L	0.7
Chlorobenzene	ND*	0.2	mg/L	100

\* ND=not detected at or above the method detection limit

#### RCRA Metals / EPA Method 1311 / 6010 / 7470

Parameter	Result	Detection Limit	Units	Maximum Contaminant Level
Arsenic	ND*	0.2	mg/L	5.0
Barium	0.25	0.005	mg/L	100
Cadmium	ND*	0.05	mg/L	1.0
Chromium	ND*	0.1	mg/L	5.0
Lead	ND*	0.1	mg/L	5.0
Selenium	ND*	0.5	mg/L	1.0
Silver	ND*	0.2	mg/L	5.0
Mercury	ND*	0.002	mg/L	0.2

\* ND=not detected at or above the method detection limit

**Chlorinated Pesticides / EPA Method 1311 / 8081**

Parameter	Result	Detection Limit	Units	Maximum Contaminant Level
gamma-BHC (Lindane)	ND*	0.001	mg/L	0.4
Heptachlor	ND*	0.001	mg/L	0.008
Heptachlor epoxide	ND*	0.001	mg/L	0.008
Endrin	ND*	0.002	mg/L	0.02
Methoxychlor	ND*	0.01	mg/L	10
Chlordane (technical)	ND*	0.01	mg/L	0.03
Toxaphene	ND*	0.1	mg/L	0.5

\* ND=not detected at or above the method detection limit

**Chlorinated Herbicides / EPA Method 1311 / 8151**

Parameter	Result	Detection Limit	Units	Maximum Contaminant Level
2,4-D	ND*	0.001	mg/L	10
Silvex (2,4,5-TP)	ND*	0.001	mg/L	1.0

\* ND=not detected at or above the method detection limit

**Semivolatile Organic Compounds/ EPA Method 1311 / 8270C**

Parameter	Result	Detection Limit	Units	Maximum Contaminant Level
1,4-Dichlorobenzene	ND*	0.005	mg/L	7.5
2-Methylphenol	ND*	0.005	mg/L	200
3- & 4-Methylphenol	ND*	0.005	mg/L	200
Hexachloroethane	ND*	0.005	mg/L	3.0
Nitrobenzene	ND*	0.005	mg/L	2.0
Hexachlorobutadiene	ND*	0.005	mg/L	0.5
2,4,6-Trichlorophenol	ND*	0.005	mg/L	2.0
2,4,5-Trichlorophenol	ND*	0.005	mg/L	400
2,4-Dinitrotoluene	ND*	0.005	mg/L	0.13
Hexachlorobenzene	ND*	0.005	mg/L	0.13
Pentachlorophenol	ND*	0.005	mg/L	100
Pyridine	ND*	0.005	mg/L	5.0

\* ND=not detected at or above the method detection limit

**Conclusions**

All parameters were well below the limits required by the test, showing that the **Adsorb-it®** sorbent material does not contribute to pollution of the environment.

**Residual Ash and Heating Value**

Samples of the **Adsorb-it®** sorbent material were tested to determine the residue and the heating value. The ash was determined to be 0.65% by ASTM method D482 and the heating value was determined to be 7600 BTU/lb by ASTM method D240.