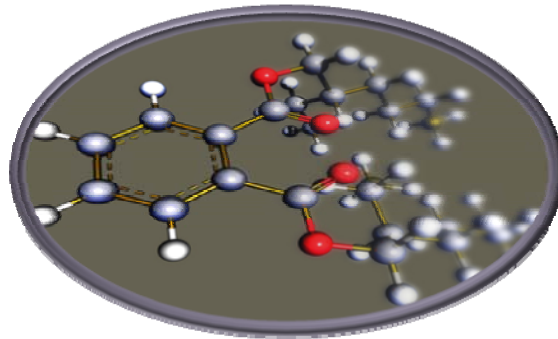


Phthalate leaching comparison study of Polypropylene and X-TEX fabric



Phthalates are a group of chemicals used in the manufacture of plastics. They often are called plasticizers. Phthalates can prolong the lifespan or durability of plastics and increase the flexibility of some plastics. In addition, phthalates have been used as solvents for other materials. They are used in hundreds of products, including vinyl flooring; adhesives; detergents; lubricating oils; automotive plastics; plastic clothing, such as raincoats; and personal-care products, such as soap, shampoo, hair spray, and textiles.

The problem with phthalates is that they have been found to belong to a group of chemicals which can affect the delicate balance of the hormonal system. Their effects have been long-established in animals and are also thought to be endocrine disrupters in humans as well.

The problem is that the chemicals do not chemically bond and can therefore ‘escape’ from the product and enter the environment. Because of their widespread use for over 50 years, they are now very prevalent in the environment – found in homes, rivers, groundwater etc - and have also been found in humans. In addition, rather than biodegrading, phthalates ‘bio accumulate’ because they do not break down easily. So our exposure to them is increasing as the numbers gradually build up.

Xextex the manufacturer of X-Tex, an environmental oil sorbent recycled fabric, determined it was necessary to determine the products contribution to the phthalate problem. A comparison study was performed using the X-Tex fabric and a similar polypropylene fabric. The fabrics were submitted to Test America in Tacoma, Washington, for a TCLP leachate study per EPA method 1311, and EPA method 8270. The study was to determine if phthalates might leach from the material and be released into the environment.

Laboratory results from the testing of both products revealed that neither product produced phthalate levels above the reporting limits of the test method. However analysis of the extract concentrations produced results for comparison of the two products. The results are listed below;

Client: Xextex Job Number: 580-12858-A-1-B

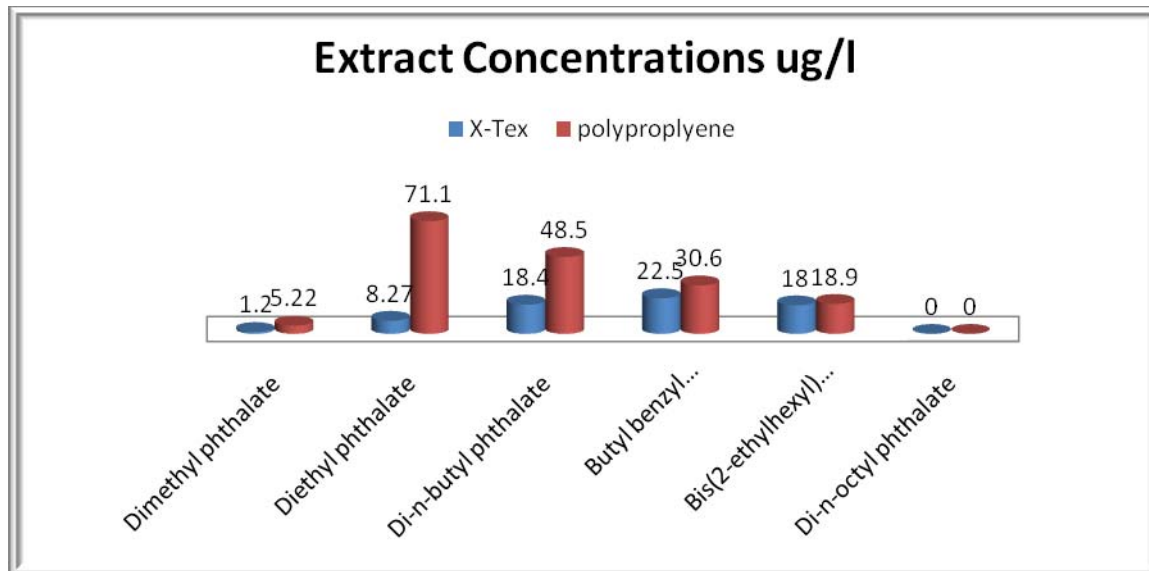
Client Sample ID: X-TEX

Analyte	Reported value	Reporting level ug/l
Diethyl phthalate	ND	20
Dimethyl phthalate	ND	20
Di-n-butyl phthalate	ND	20
Butyl benzyl phthalate	ND	30
Bis(2-ethylhexyl) phthalate	ND	150
Di-n-octyl phthalate	ND	20
Analyte	Extract Concentration ug/l	
Dimethyl phthalate	1.20	
Diethyl phthalate	8.27	
Di-n-butyl phthalate	18.4	
Butyl benzyl phthalate	22.5	
Bis(2-ethylhexyl) phthalate	18.0	
Di-n-octyl phthalate	ND	

Client: Xextex Job Number: 580-12758-a-2-b

Sample ID: Polypropylene

Analyte	Reported value	Reporting level ug/l
Dimethyl phthalate	ND	20
Diethyl phthalate	ND	20
Di-n-butyl phthalate	ND	20
Butyl benzyl phthalate	ND	30
Bis(2-ethylhexyl) phthalate	ND	150
Di-n-octyl phthalate	ND	20
Analyte	Extract Concentration ug/l	
Dimethyl phthalate	5.22	
Diethyl phthalate	71.1	
Di-n-butyl phthalate	48.5	
Butyl benzyl phthalate	30.6	
Bis(2-ethylhexyl) phthalate	18.9	
Di-n-octyl phthalate	ND	



Discussion: The X-Tex and the polypropylene fabric was extracted 18 hours per EPA Method 1311. This test subjects the fabrics to a glacial acetic buffered solution extraction which accelerates the conditions found in a landfill. It is designed to leach out organics and metals that are found in waste materials for profiling. The results from this test confirmed that non-detectable levels were obtained that were below the methods reporting level based on the instrumental method detection limits. However the extract values obtained from this analysis the X-Tex had extracted levels of phthalates that were below the level of polypropylene as illustrated in the above graph. X-Tex gives the environmental community a stellar re-cycled product that is part of the solution and not the problem to our water systems.