

Williamstown, New Jersey PHONE 856-583-0445 www.enviroteklab.com EPA ID # NJ01298 NJ DEP ID # 03048 IAPMO ID #102

TEST RESULTS

FOR

Fairey Industrial Ceramics

LYMEDALE CROSS, LOWER MILEHOUSE LANE STAFFORDSHIRE, UK, ST5 9BT

Ultra Sterasyl Filter Candles NSF/ANSI Standards 42, 53, and 401 Chemical Reduction Tests Results



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ULTRA STERASYL FILTER CANDLES WATER TEST REPORT

Report # 19-119

Report Date: 06/20/2019

Customer Name: Fairey Industrial Ceramics

Introduction

The following test report summarises the performances of Ultra Sterasyl filters tested under gravity using a range of Pesticides, and Chlorine Contaminants to a capacity of 3030 Liters. The influent and effluent levels plus the filtration efficiencies for each contaminant were measured throughout the test and recorded in the following result tables.

Contaminant Tested		10 UV	606 liters	1515 liters	2121 liters	2727 liters	3030 liters	Min Efficiency throughout
Alachlor	Influent	48.25 ug/L	49.39 ug/L	40.32 ug/L	48.8 ug/L	49.58 ug/L	49.25 ug/L	, , ,
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.79%	99.80%	99.75%	99.80%	99.80%	99.80%	99.75%
	Influent	50.58 ug/L	48.66 ug/L	62.11 ug/L	46.54 ug/L	51.25 ug/L	52.35 ug/L	
Hexachlorobenze	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.80%	99.79%	99.84%	99.79%	99.80%	99.81%	99.78%
	Influent	48.55 ug/L	64.22 ug/L	79.28 ug/L	62.66 ug/L	52.45 ug/L	52.74 ug/L	
Hexachlorocyclopentadiene	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.79%	99.84%	99.87%	99.84%	99.81%	99.81%	99.79%
	Influent	50.57 ug/L	48.65 ug/L	62.09 ug/L	46.53 ug/L	49.57 ug/L	51.24 ug/L	
Delta-BHC	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.80%	99.79%	99.84%	99.79%	99.80%	99.80%	99.78%
	Influent	50.57 ug/L	48.65 ug/L	62.1 ug/L	46.53 ug/L	53.26 ug/L	52.36 ug/L	
Porpachlor	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.80%	99.79%	99.84%	99.79%	99.81%	99.81%	99.78%
	Influent	49.43 ug/L	33.59 ug/L	53.29 ug/L	58.24 ug/L	48.58 ug/L	49.61 ug/L	
Molinate	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	0.1	
	Reduction	99.80%	99.70%	99.81%	99.83%	99.79%	99.80%	99.66%
	Influent	50.57 ug/L	48.65 ug/L	62.09 ug/L	36.53 ug/L	49.65 ug/L	51.23 ug/L	
Alpha-BHC	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1 ug/L	
	Reduction	99.80%	99.79%	99.84%	99.73%	99.80%	99.80%	99.73%
	Influent	45.15 ug/L	48.26 ug/L	40.05 ug/L	51.54 ug/L	51.42 ug/L	48.56 ug/L	
Beta-BHC	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.78%	99.79%	99.75%	99.81%	99.79%	99.79%	99.75%
Gama BHC (Lindane)	Influent	46.57 ug/L	38.31 ug/L	45.19 ug/L	49.57 ug/L	47.23 ug/L	48.52 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1 ug/L	
	Reduction	99.79%	99.74%	99.78%	99.80%	99.79%	99.79%	99.69%
	Influent	45.13 ug/L	48.26 ug/L	40.1 ug/L	51.54 ug/L	49.85 ug/L	48.58 ug/L	
Atrazine	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.78%	99.79%	99.75%	99.81%	99.80%	99.38%	99.38%



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Contaminant Tested		10 UV	606 liters	1515 liters	2121 liters	2727 liters	3030 liters	Min Efficiency throughout
Simazine	Influent	49.58 ug/L	48.05 ug/L	64.63 ug/L	44.7 ug/L	46.78 ug/L	49.85 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.80%	99.79%	99.85%	99.78%	99.79%	99.80%	99.74%
Metribuzin	Influent	46.82 ug/L	49.68 ug/L	60.43 ug/L	47.82 ug/L	51.24 ug/L	50.24 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1 ug/L	0.3 ug/L	
	Reduction	99.79%	99.80%	99.83%	99.79%	99.80%	99.40%	99.40%
	Influent	46.77 ug/L	41.83 ug/L	49.64 ug/L	65.19 ug/L	48.75 ug/L	50.24 ug/L	
Heptachlor	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.79%	99.76%	99.80%	99.85%	99.79%	99.80%	99.35%
	Influent	73.8 ug/L	49.86 ug/L	51.67 ug/L	45.53 ug/L	48.75 ug/L	49.52 ug/L	
Metolachlor	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.86%	99.80%	99.81%	99.78%	99.79%	99.80%	99.78%
	Influent	65.51 ug/L	89.98 ug/L	71.56 ug/L	109.3 ug/L	84.57 ug/L	70.45 ug/L	
Butylate	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.85%	99.89%	99.86%	99.91%	99.88%	99.86%	99.85%
	Influent	49.75 ug/L	59.32 ug/L	40.02 ug/L	56.85 ug/L	51.45 ug/L	50.25 ug/L	
2,4-D	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.80%	99.83%	99.75%	99.82%	99.81%	99.80%	99.75%
	Influent	56.35 ug/L	56.04 ug/L	50.77 ug/L	51.42 ug/L	58.45 ug/L	54.12 ug/L	
Aldrin	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.82%	99.82%	99.80%	99.81%	99.83%	99.82%	99.80%
	Influent	111.31 ug/L	199.18 ug/L	97.85 ug/L	172.73 ug/L	130.25 ug/L	125.25 ug/L	
Heptachlor Epoxide	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.91%	99.95%	99.90%	99.94%	99.92%	99.92%	99.90%
	Influent	34.98 ug/L	50.77 ug/L	66.03 ug/L	42.99 ug/L	44.52 ug/L	48.57 ug/L	
Trans-Chlordane (Nonachlor)	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	
	Reduction	99.71%	99.80%	99.85%	99.77%	99.78%	99.79%	99.71%
	Influent	95.18 ug/L	185.07 ug/L	165.73 ug/L	151.15 ug/L	130.25 ug/L	132.45 ug/L	
Butachlor	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.89%	99.95%	99.94%	99.93%	99.92%	99.92%	99.89%
	Influent	52.35 ug/L	48.92 ug/L	53.25 ug/L	42.9 ug/L	48.58 ug/L	49.57 ug/L	
Endosulfan I	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	0.1	
	Reduction	99.81%	99.80%	99.81%	99.77%	99.79%	99.80%	99.75%
Cis-Chlordane	Influent	52.35 ug/L	51.23 ug/L	51.24 ug/L	52.24 ug/L	50.65 ug/L	51.45 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	
	Reduction	99.81%	99.80%	99.80%	99.81%	99.80%	99.81%	99.80%
	Influent	35.76 ug/L	66.82 ug/L	104.25 ug/L	71.76 ug/L	50.65 ug/L	51.45 ug/L	
p,p'-DDE	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.72%	99.85%	<0.1 ug/L 99.90%	99.86%	99.80%	<0.1 ug/L 99.81%	99.72%
	Neuliciion	33.1270	33.03%	33.30%	33.00%	<i>3</i> 3.0U%	JJ.0170	33.1270



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Contaminant Tested		10 UV	606 liters	1515 liters	2121 liters	2727 liters	3030 liters	Min Efficiency throughout
Dieldrin	Influent	73.68 ug/L	105.07 ug/L	85.27 ug/L	85.77 ug/L	70.45 ug/L	65.58 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.56 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.86%	99.90%	99.88%	99.35%	99.86%	99.85%	99.35%
	Influent	59.72 ug/L	50.97 ug/L	62.56 ug/L	46.45 ug/L	49.58 ug/L	50.25 ug/L	
Endrin	Filtered	<0.1 ug/L						
	Reduction	99.83%	99.80%	99.84%	99.78%	99.80%	99.80%	99.78%
	Influent	50.6 ug/L	53.49 ug/L	67.23 ug/L	49.8 ug/L	51.45 ug/L	50.32 ug/L	
Endosulfan II	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	0.1	
	Reduction	99.80%	99.81%	99.85%	99.80%	99.81%	99.80%	99.80%
	Influent	20.25 ug/L	21.56 ug/L	19.44 ug/L	19.45 ug/L	22.45 ug/L	24.85 ug/L	
p,p'-DDD	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	0.1	
	Reduction	99.51%	99.54%	99.49%	99.49%	99.55%	99.60%	99.49%
	Influent	21.6 ug/L	29.9 ug/L	52.92 ug/L	30.32 ug/L	46.85 ug/L	42.85 ug/L	
Endrin Aldehyde	Filtered	<0.1 ug/L						
	Reduction	99.54%	99.67%	99.81%	99.67%	99.79%	99.77%	99.54%
	Influent	22.18 ug/L	33.36 ug/L	57.83 ug/L	33.22 ug/L	30.52 ug/L	31.45 ug/L	
p,p'-DDT	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1 ug/L	0.1 ug/L	
	Reduction	99.55%	99.70%	99.83%	99.70%	99.67%	99.68%	99.55%
	Influent	37.86 ug/L	53.66 ug/L	93.49 ug/L	54.26 ug/L	52.45 ug/L	53.65 ug/L	
Endosulfan Sulfate	Filtered	<0.1 ug/L	0.85 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1 ug/L	
	Reduction	99.74%	98.42%	99.89%	99.82%	99.81%	99.81%	98.42%
	Influent	65.25 ug/L	68.53 ug/L	52.03 ug/L	51.56 ug/L	50.85 ug/L	51.98 ug/L	
Endrin Ketone	Filtered	<0.1 ug/L	0.1 ug/L					
	Reduction	99.85%	99.85%	99.81%	99.81%	99.80%	99.81%	99.80%
	Influent	111.41 ug/L	119.63 ug/L	108.38 ug/L	131.58 ug/L	124.56 ug/L	120.45 ug/L	
Methoxychlor	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1 ug/L	0.1 ug/L	
	Reduction	99.91%	99.92%	99.91%	99.92%	99.92%	99.92%	99.91%
	Influent	115.53 ug/L	113.43 ug/L	213.44 ug/L	130.91 ug/L	120.58 ug/L	121.85 ug/L	
Bromacil	Filtered	<0.1 ug/L						
	Reduction	99.91%	99.91%	99.95%	99.92%	99.92%	99.92%	99.91%
	Influent	36.49 ug/L	58.34 ug/L	59.5 ug/L	76.89 ug/L	52.85 ug/L	59.62 ug/L	55.5170
Carbofuran	Filtered	<0.1 ug/L						
	Reduction	99.73%	99.83%	99.83%	99.87%	99.81%	99.83%	99.73%
Chlorneb	Influent	47.55 ug/L	67.64 ug/L	81.61 ug/L	58.55 ug/L	58.95 ug/L	50.45 ug/L	55.7570
	Filtered	<0.1 ug/L						
	Reduction	99.79%	99.85%	99.88%	99.83%	99.83%	99.80%	99.79%
	Influent							55.13/0
Chlorthalonil		75.42 ug/L	49.87 ug/L	73.9 ug/L	66.86 ug/L	52.85 ug/L	50.48 ug/L	
	Filtered	<0.1 ug/L	00.80%					
	Reduction	99.87%	99.80%	99.86%	99.85%	99.81%	99.80%	99.80%



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Contaminant Tested		10 UV	606 liters	1515 liters	2121 liters	2727 liters	3030 liters	Min Efficiency throughout
Chlorprophane	Influent	33.89 ug/L	19.16 ug/L	60.22 ug/L	69.57 ug/L	53.45 ug/L	50.51 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.70%	99.48%	99.83%	99.86%	99.81%	99.80%	99.48%
Chlorpyriphos	Influent	49.76 ug/L	49.7 ug/L	54.93 ug/L	53.4 ug/L	51.52 ug/L	51.58 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.80%	99.80%	99.82%	99.81%	99.81%	99.81%	99.77%
	Influent	45.71 ug/L	41.77 ug/L	69.26 ug/L	41.53 ug/L	51.78 ug/L	52.65 ug/L	
Cyanizine	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.78%	99.76%	99.86%	99.76%	99.81%	99.81%	99.76%
	Influent	50.23 ug/L	63.21 ug/L	121.79 ug/L	51.86 ug/L	54.03 ug/L	51.35 ug/L	
Dichlorvos	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.80%	99.84%	99.92%	99.81%	99.81%	99.81%	99.80%
	Influent	36.83 ug/L	49.3 ug/L	71.24 ug/L	61.16 ug/L	53.65 ug/L	52.05 ug/L	
Diphenamid	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.73%	99.80%	99.86%	99.84%	99.81%	99.81%	99.73%
	Influent	15.72 ug/L	19.62 ug/L	76.14 ug/L	26.09 ug/L	20.63 ug/L	20.51 ug/L	
Disulfoton	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.36%	99.49%	99.87%	99.62%	99.52%	99.51%	99.36%
	Influent	56.43 ug/L	69.56 ug/L	70.27 ug/L	45.84 ug/L	49.85 ug/L	48.57 ug/L	33.3070
Fenamiphos	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
·	Reduction	99.82%	99.86%	99.86%	99.78%	99.80%	99.79%	99.76%
	Influent	34.48 ug/L						99.70%
Fenarimol		-	53.37 ug/L	76.16 ug/L	56.4 ug/L	50.05 ug/L	51.35 ug/L	
i charinioi	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	00.71%
	Reduction	99.71%	99.81%	99.87%	99.82%	99.80%	99.81%	99.71%
Fluoridone	Influent	72.54 ug/L	50.25 ug/L	87.52 ug/L	53.65 ug/L	53.62 ug/L	54.36 ug/L	
Huohuohe	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.86%	99.80%	99.89%	99.81%	99.81%	99.82%	99.80%
5 .1	Influent	51.54 ug/L	71.97 ug/L	62.67 ug/L	74.02 ug/L	60.25 ug/L	63.32 ug/L	
Ethoprop	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	Reduction	99.81%	99.86%	99.84%	99.86%	99.83%	99.84%	99.81%
Toxaphene	Influent	36.65 ug/L	39.89 ug/L	73.32 ug/L	39.56 ug/L	46.36 ug/L	43.52 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	0.1	
PCB's	Reduction	99.73%	99.75%	99.86%	99.75%	99.78%	99.77%	99.73%
	Influent	10.25 ug/L	12.42 ug/L	10.45 ug/L	10.35 ug/L	11.98 ug/L	11.75 ug/L	
	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.1	0.1	
	Reduction	99.02%	99.19%	99.04%	99.03%	99.17%	99.15%	98.93%
	Influent	810.2 ug/L	803.4 ug/L	804.8 ug/L	806.8 ug/L	803.6 ug/L	804.9 ug/L	
Glyphosate	Filtered	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	0.3 ug/L	0.5 ug/L	
	Reduction	99.99%	99.99%	99.99%	99.99%	99.96%	99.94%	99.94%



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Accumulated Volume	Influent Chlorine	Effluent Chlorine	% Reduction
10 UV	1.90 mg/L	<0.01	99.47%
303 Liters	2.20 mg/L	<0.01	99.55%
606 liters	1.80 mg/L	<0.01	99.44%
909 liters	1.90 mg/L	<0.01	99.47%
1212 liters	1.80 mg/L	<0.01	99.44%
1515 liters	1.80 mg/L	<0.01	99.44%
1818 liters	1.80 mg/L	<0.01	99.44%
2121 liters	2.00 mg/L	<0.01	99.50%
2424 liters	2.20 mg/L	<0.01	99.55%
2727 liters	1.80 mg/L	<0.01	99.44%
3030 liters	1.80 mg/L	<0.01	99.44%

Chlorine Test Results

Results

The filters provided <u>>98.9%</u> filtration efficiency of all contaminants throughout the testing.

CERTIFICATION OF RESULTS:

I certify in writing that all analyses, and reporting performed herein, comply with all requirements set forth in N.J.A.C. 7:9E and N.J.A.C. 7:18, and hereby certify that this laboratory is in compliance with all laboratory certification and quality control procedures and requirements as set forth in N.J.A.C. 7:18; the NYCRR Subpart 55-2, the National Environmental Laboratory Accreditation Conference (NELAC) Institute Standards, and the ISO 17025.

Disclaimer: The test results are only related to the filter cartridges tested, in the condition received at the laboratory.

laime Young

Jaime Young Lab Director