



QFT LABORATORY, LLC.

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%
Hexachlorobenze	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	
	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%
Hexachlorocyclopentadiene	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	
	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%
Delta-BHC	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	
	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%
Porpachlor	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	
	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%
Molinate	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	
	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%
Alpha-BHC	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	
	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%
Beta-BHC	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	
	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%
Atrazine	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	
	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%
Heptachlor	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	
	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%
Metolachlor	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	
	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%
Butylate	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	
	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%
2,4-D	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	
	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%
Aldrin	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	
	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%
Heptachlor Epoxide	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	
	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%
Trans-Chlordane (Nonachlor)	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	
	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%
Butachlor	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	
	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%
Endosulfan I	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	
	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%
p,p'-DDE	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	
	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%	99.90%	99.86%	99.80%	99.81%	99.72%



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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%
Endrin	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	
	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	99.83%	99.80%	99.84%	99.78%	99.80%	99.80%	99.78%
Endosulfan II	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	
	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%
p,p'-DDD	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	
	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%
Endrin Aldehyde	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	
	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	99.54%	99.67%	99.81%	99.67%	99.79%	99.77%	99.54%
p,p'-DDT	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	
	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%
Endosulfan Sulfate	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	
	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%
Endrin Ketone	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	
	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%	99.85%	99.81%	99.81%	99.80%	99.81%	99.80%
Methoxychlor	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	
	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%
Bromacil	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	
	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%	99.91%	99.95%	99.92%	99.92%	99.92%	99.91%
Carbofuran	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	
	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%	99.83%	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	
	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%	99.85%	99.88%	99.83%	99.83%	99.80%	99.79%
Chlorthalonil	Influent	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	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	<0.1 ug/L	
	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%
Chlorpyrifos	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%
Cyanazine	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	
	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%
Dichlorvos	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	
	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%
Diphenamid	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	
	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%
Disulfoton	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	
	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%
Fenamiphos	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	
	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%
Fenarimol	Influent	34.48 ug/L	53.37 ug/L	76.16 ug/L	56.4 ug/L	50.05 ug/L	51.35 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	99.71%	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	
	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%
Ethoprop	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	
	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	
	Reduction	99.73%	99.75%	99.86%	99.75%	99.78%	99.77%	99.73%
PCB's	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%
Glyphosate	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	
	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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Chlorine Test Results

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%

Results

The filters provided $\geq 98.9\%$ 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.

Jaime Young

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Lab Director