

10

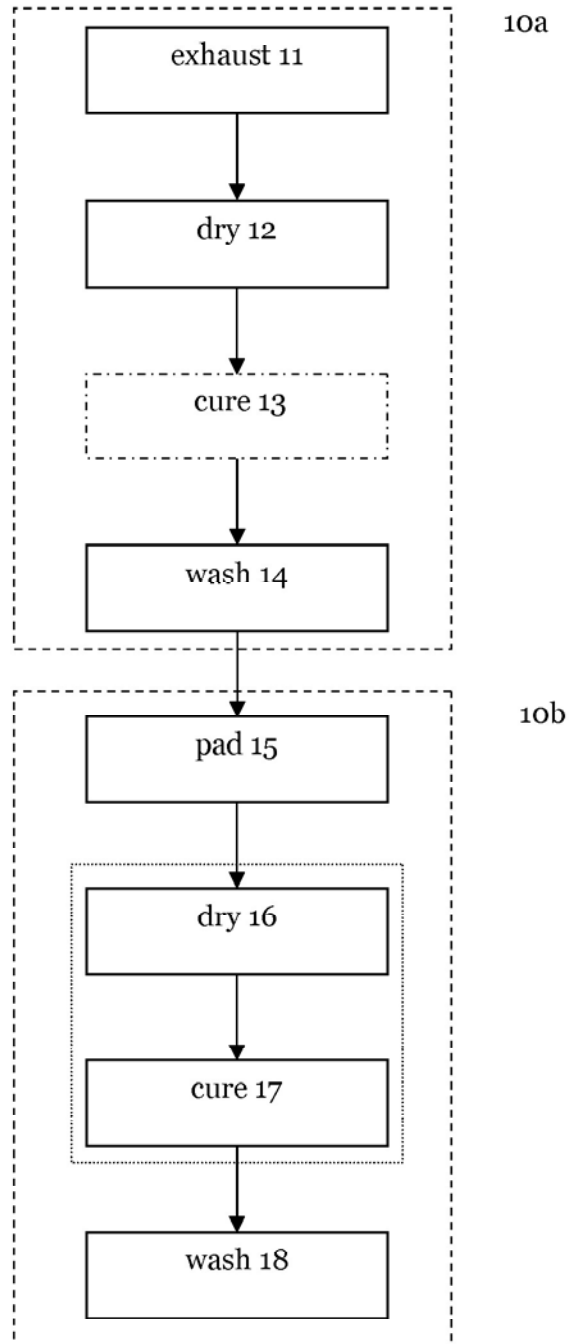


Fig. 1

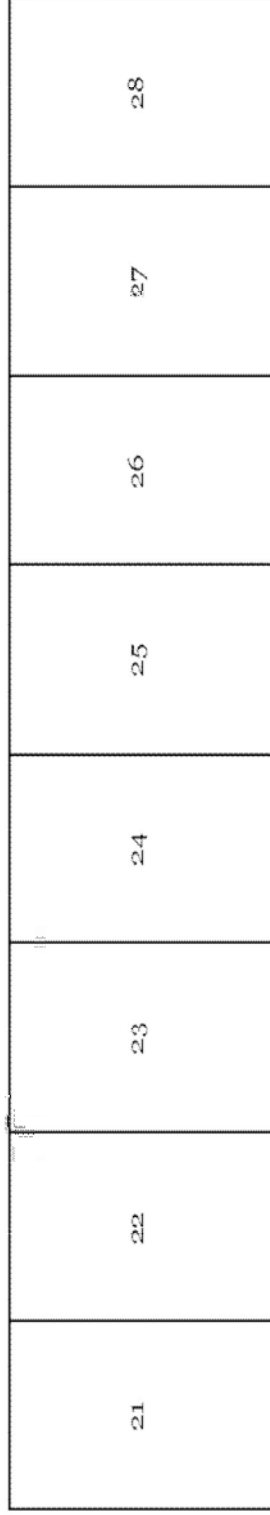


Fig. 2

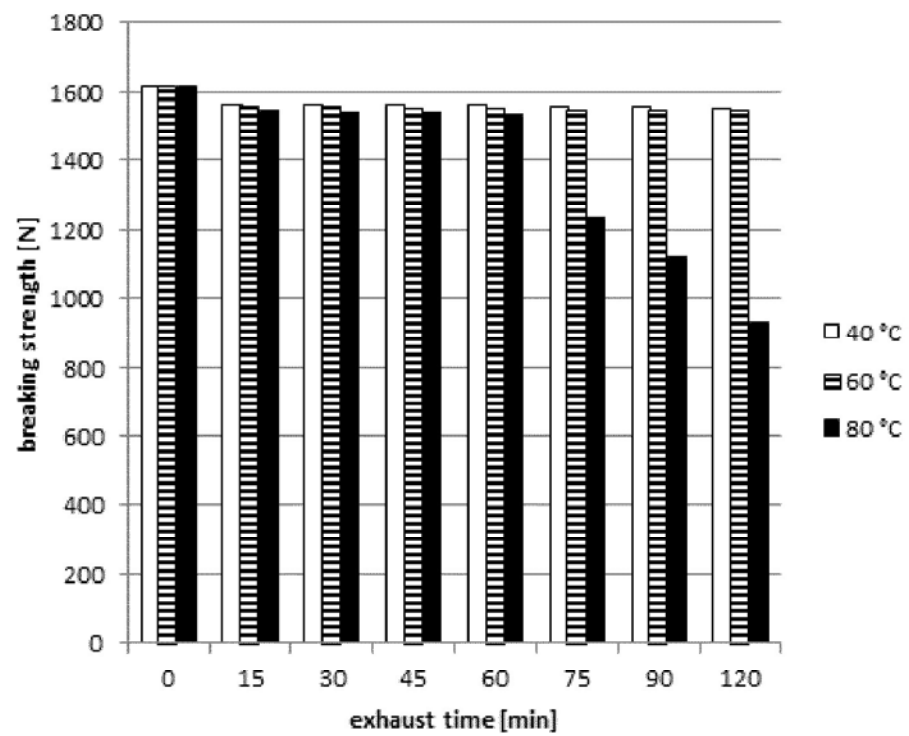


Fig. 3

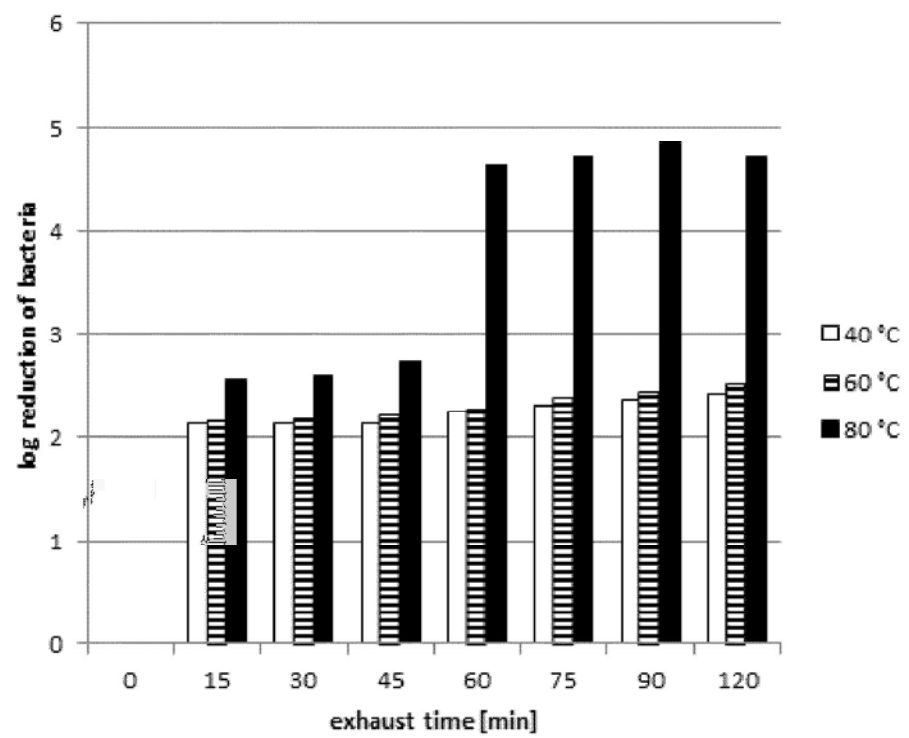


Fig. 4

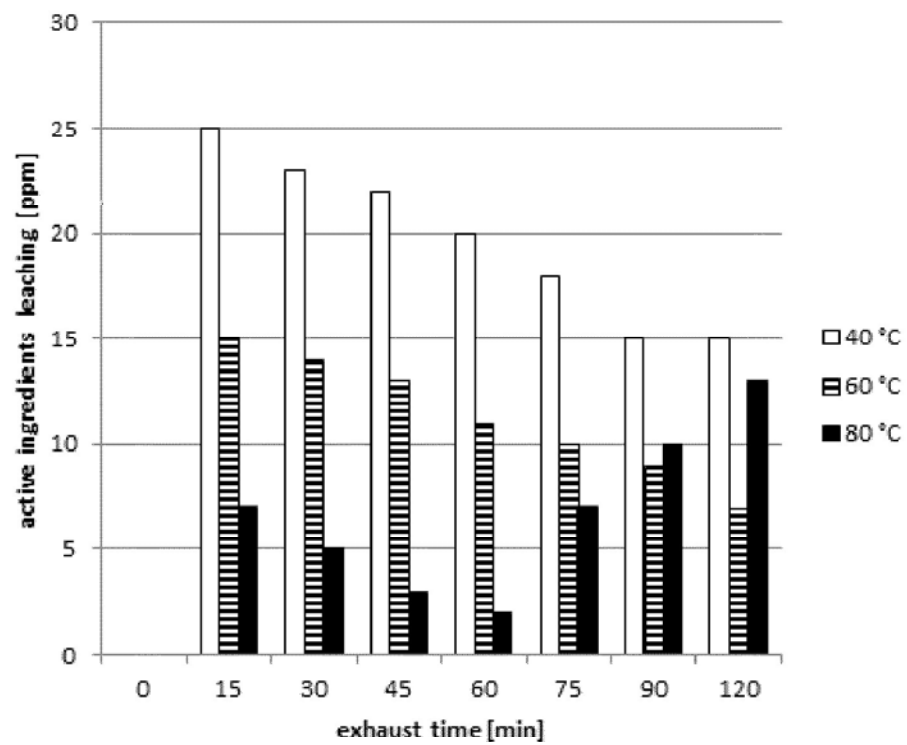


Fig. 5

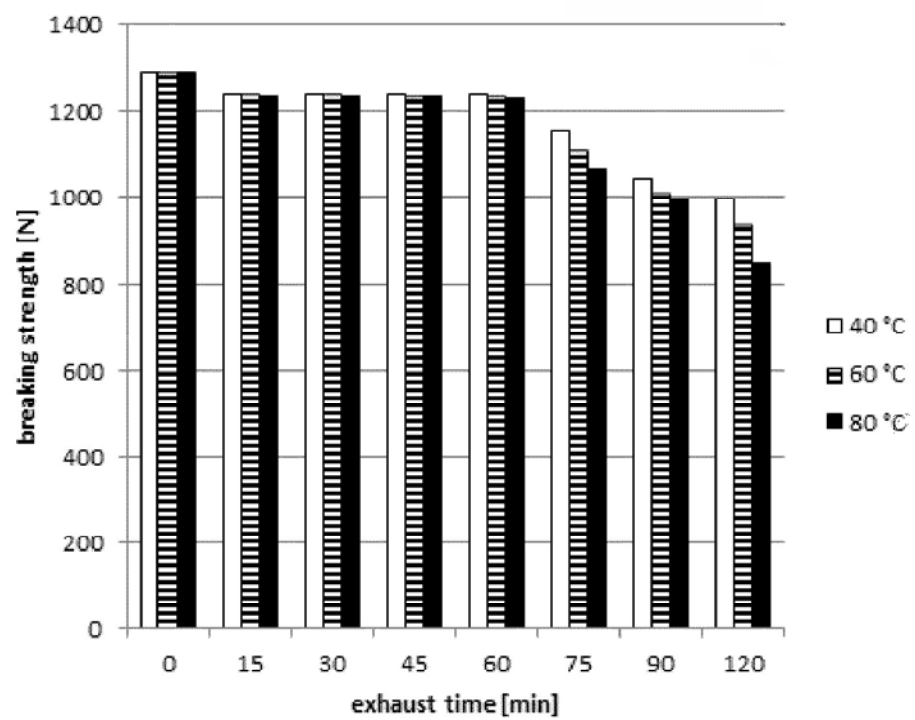


Fig. 6

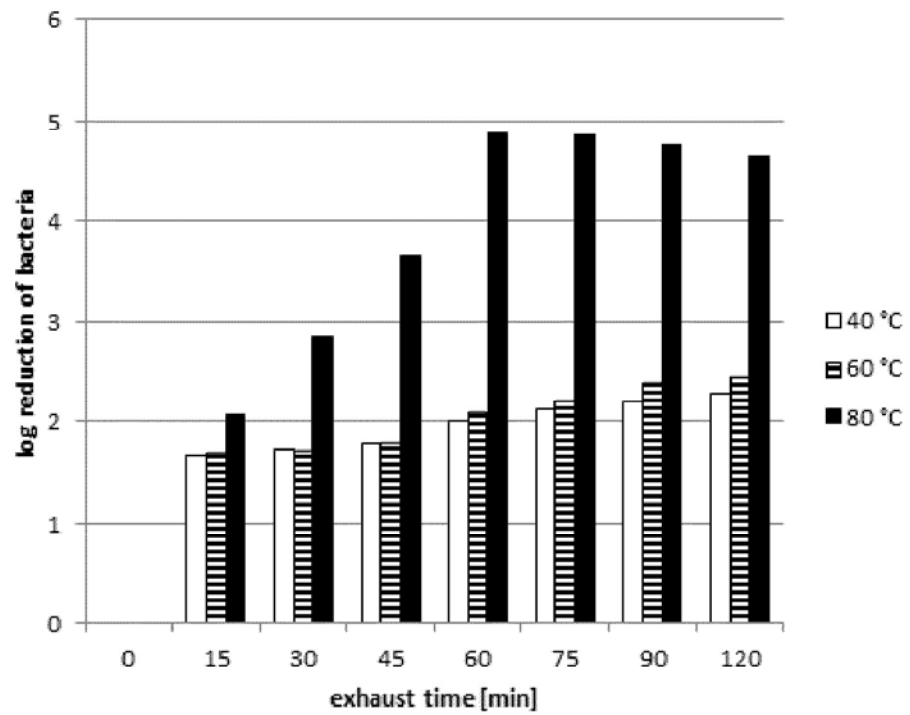


Fig. 7

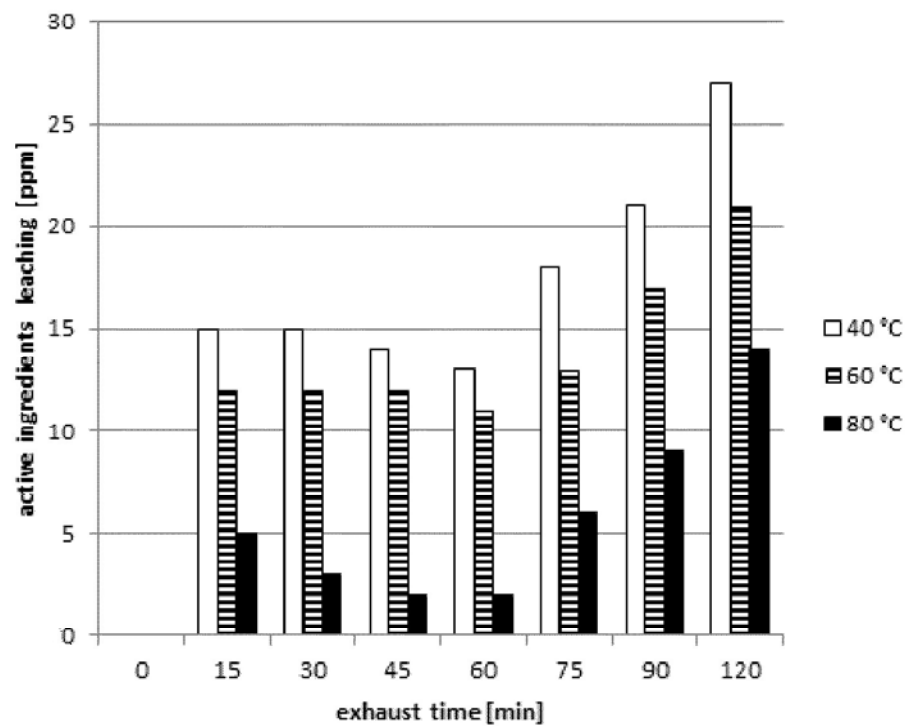


Fig. 8

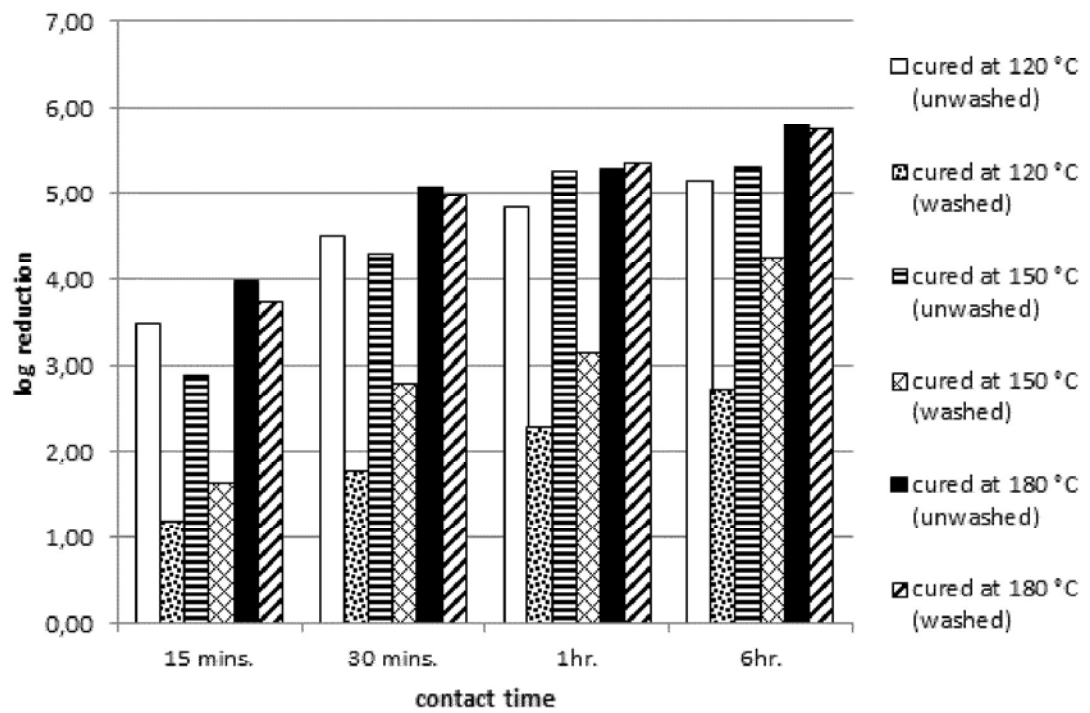


Fig. 9

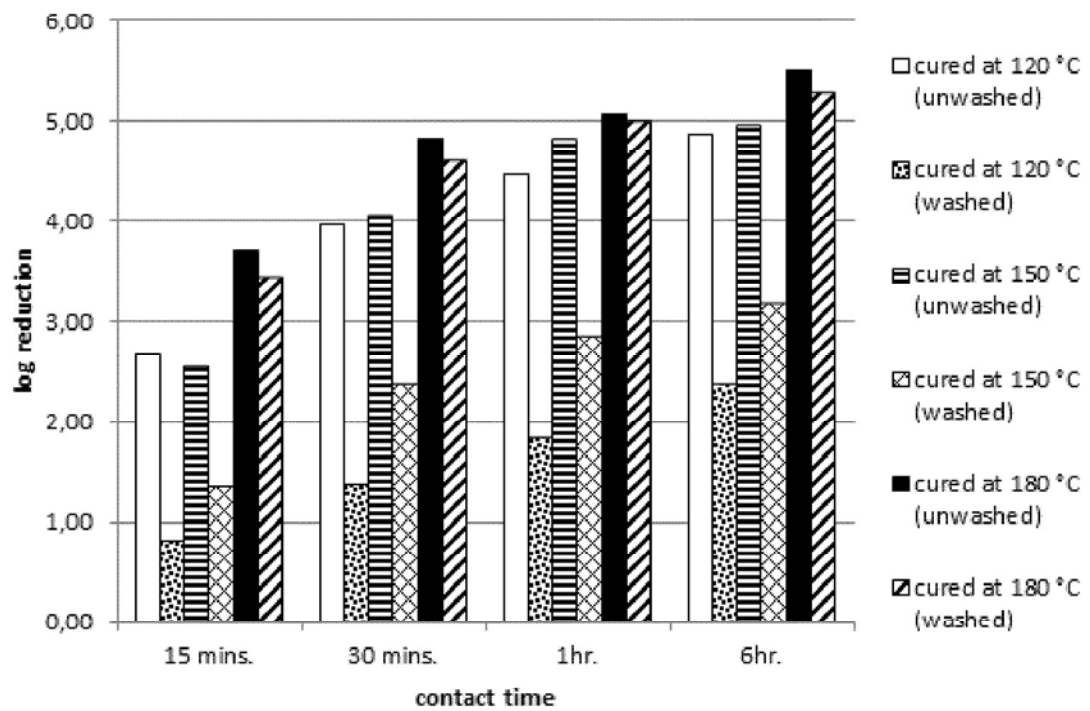


Fig. 10

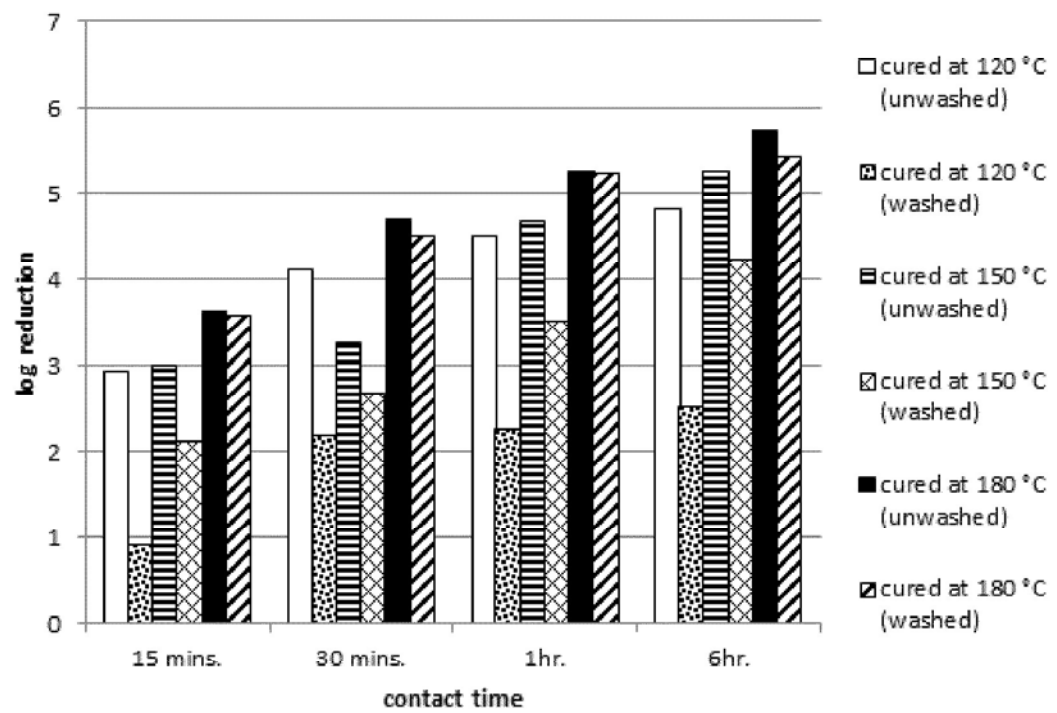


Fig. 11

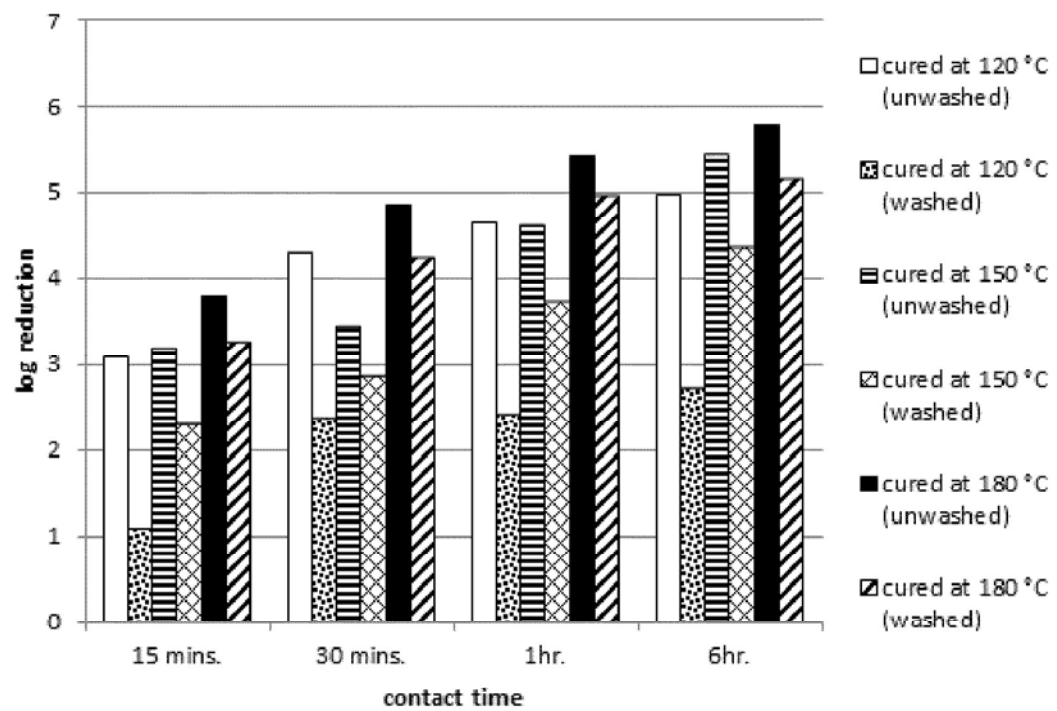


Fig. 12

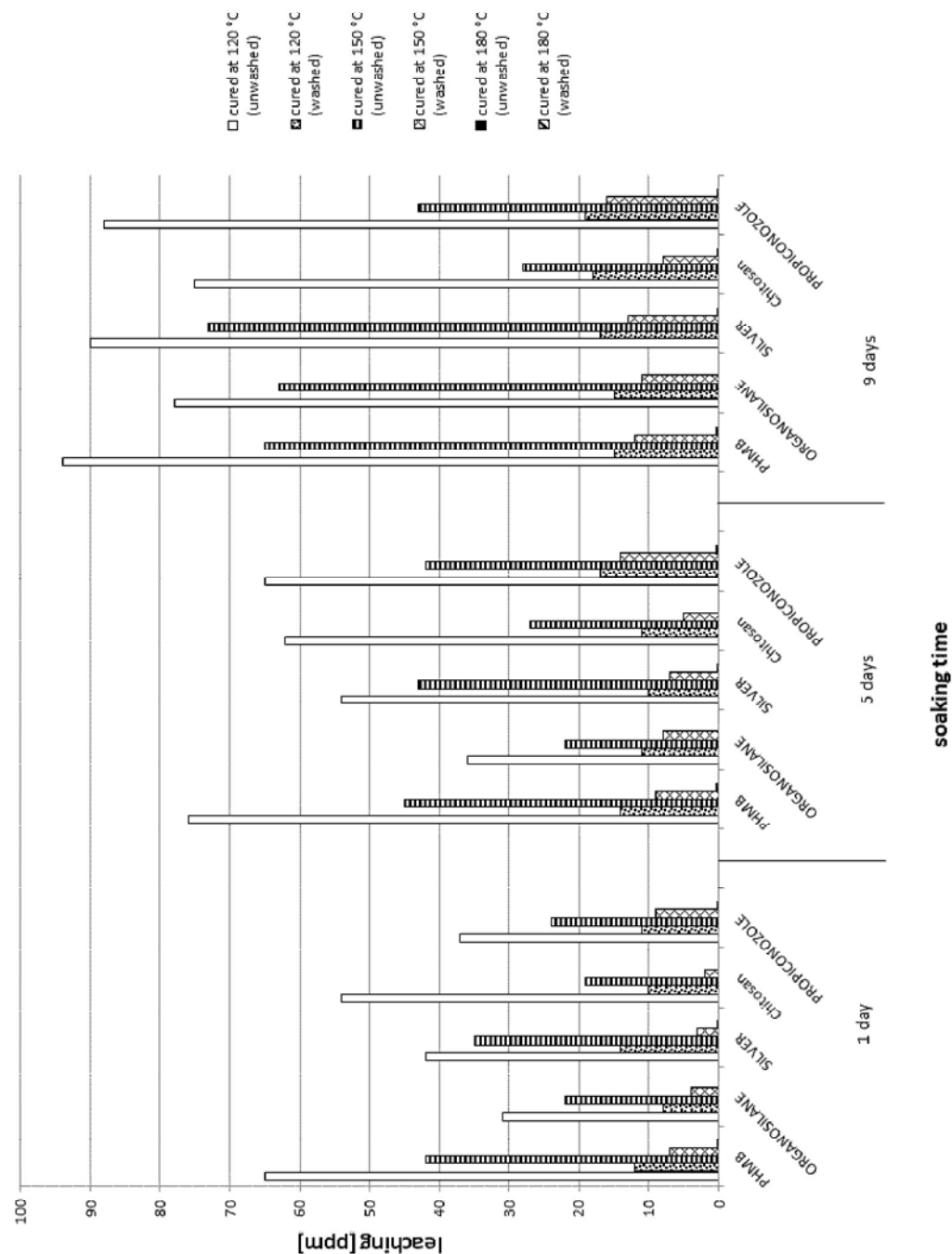


Fig. 13

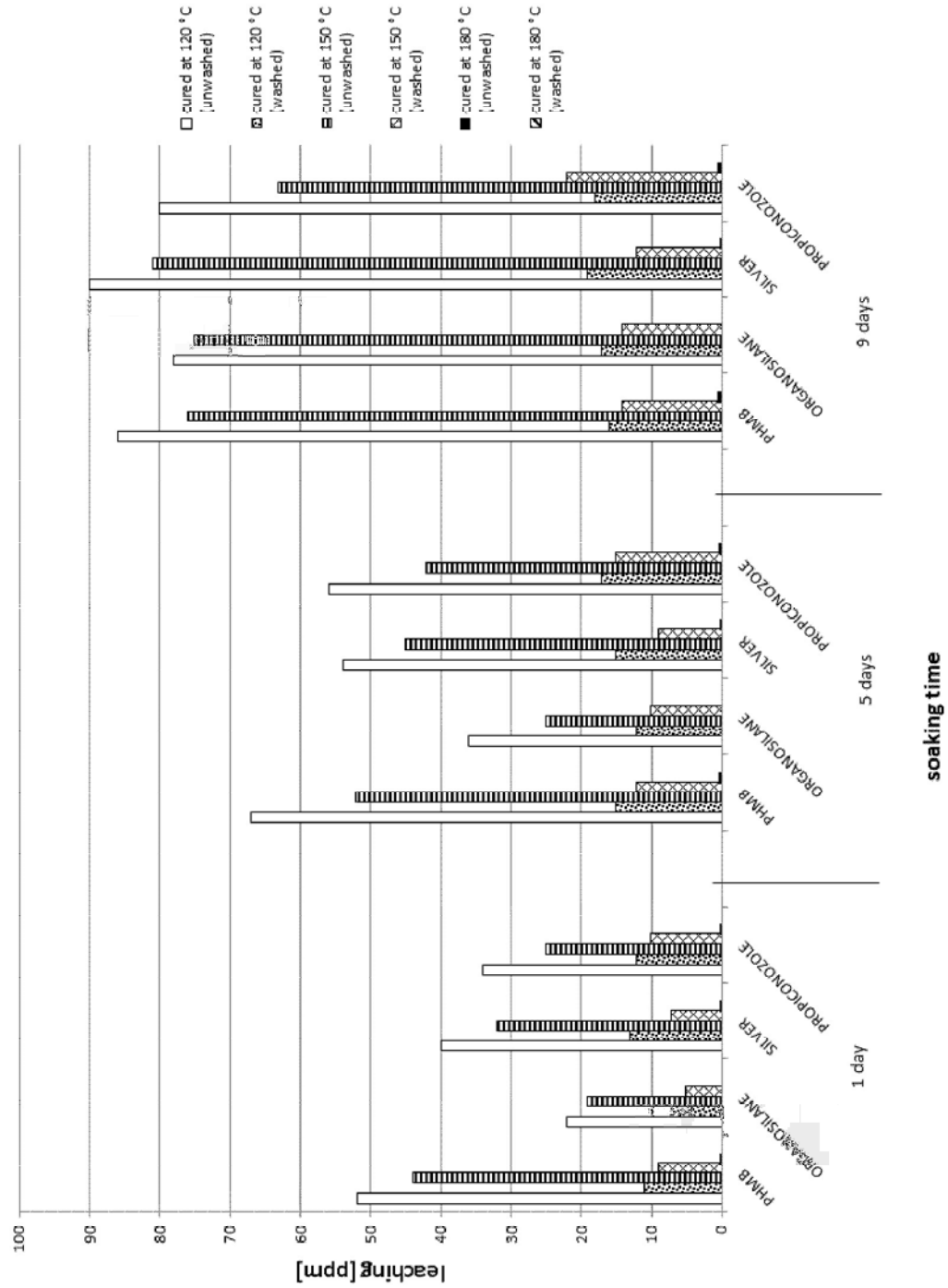


Fig. 14

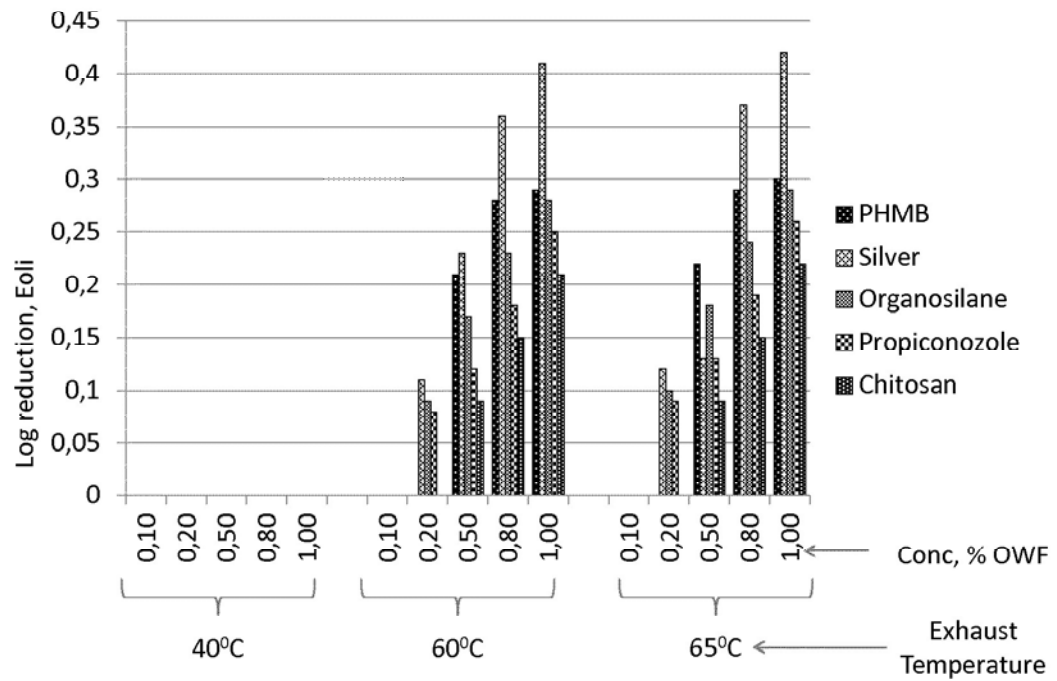


Fig. 15A: Performance Test - Active Ingredients in Exhaust process

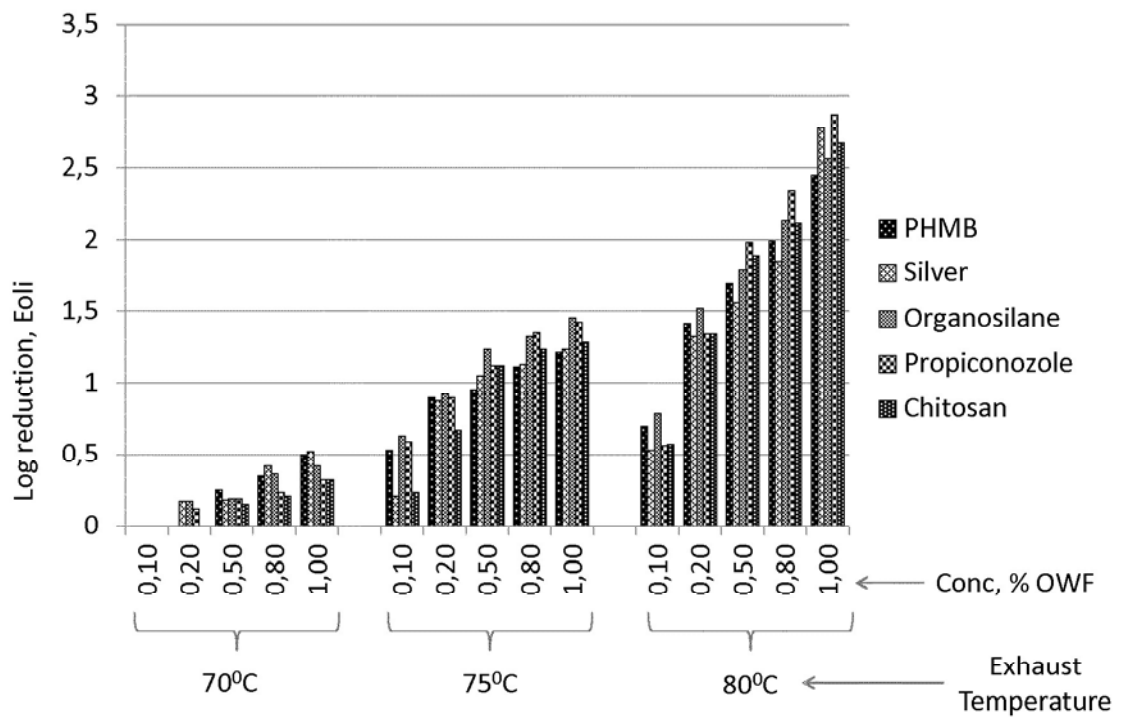


Fig. 15B: Performance Test - Active Ingredients in Exhaust process

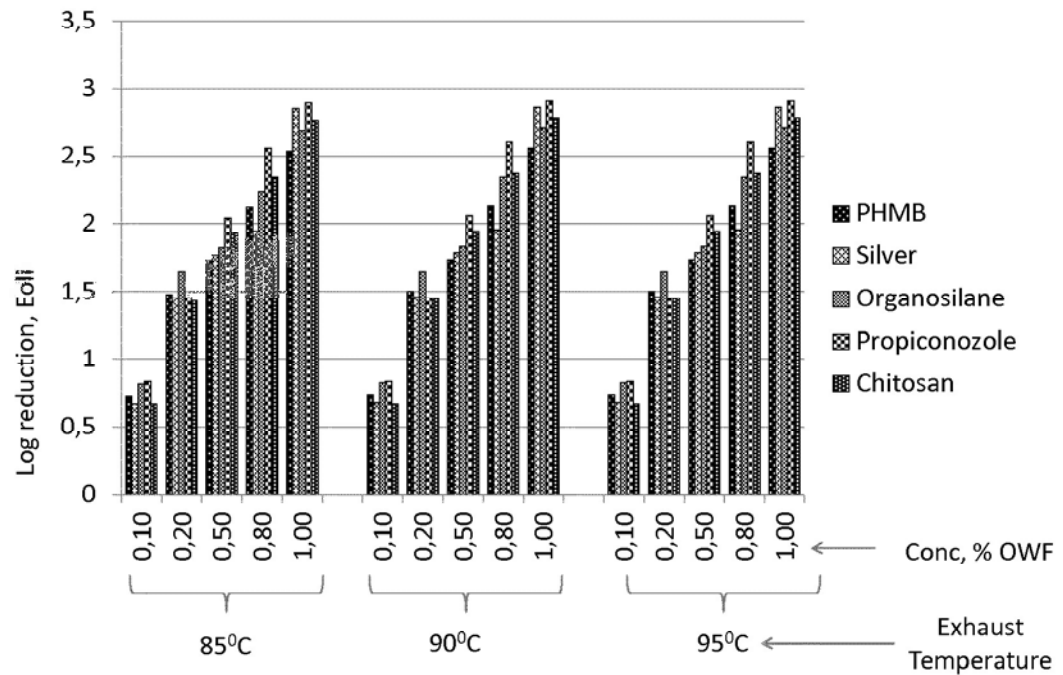


Fig. 15C : Performance Test - Active Ingredients in Exhaust process

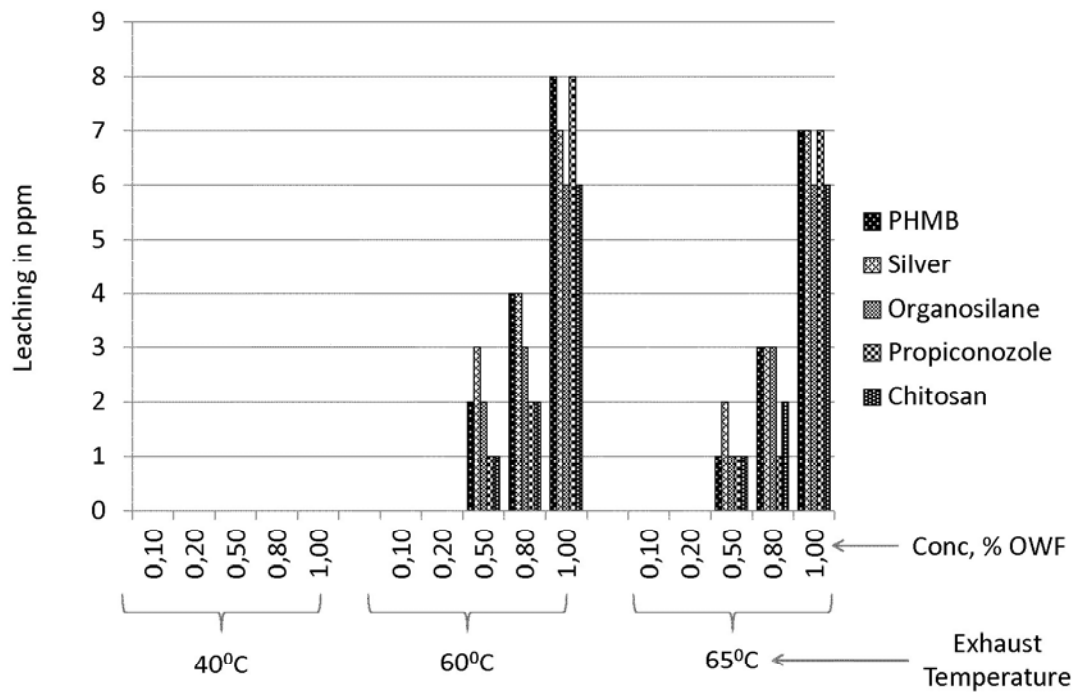


Fig. 15D : Leaching Test - Active Ingredients in Exhaust process

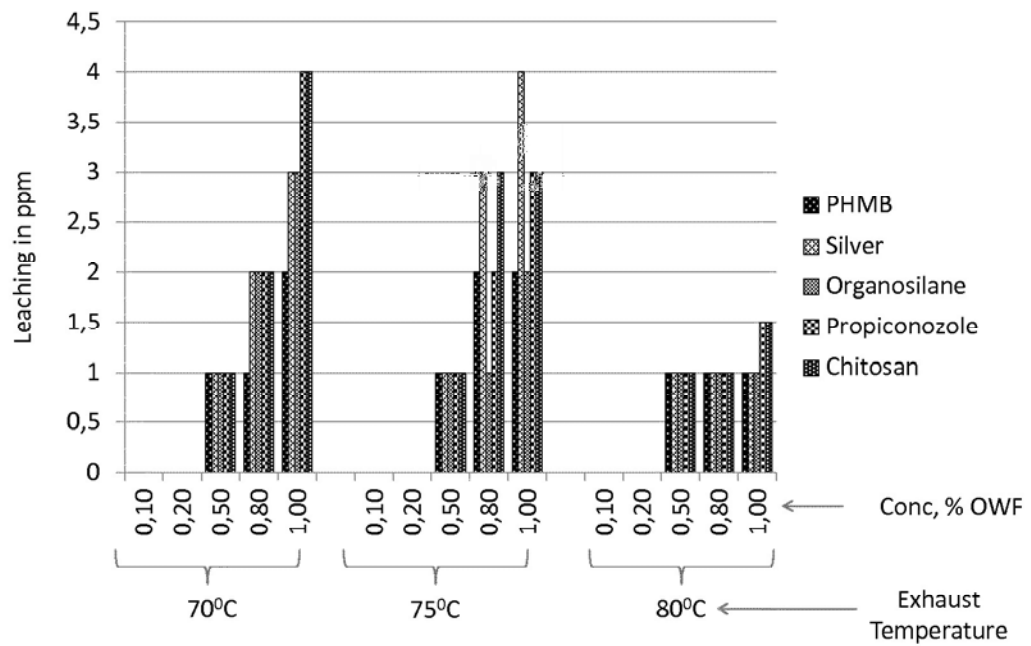


Fig. 15E : Leaching Test - Active Ingredients in Exhaust process

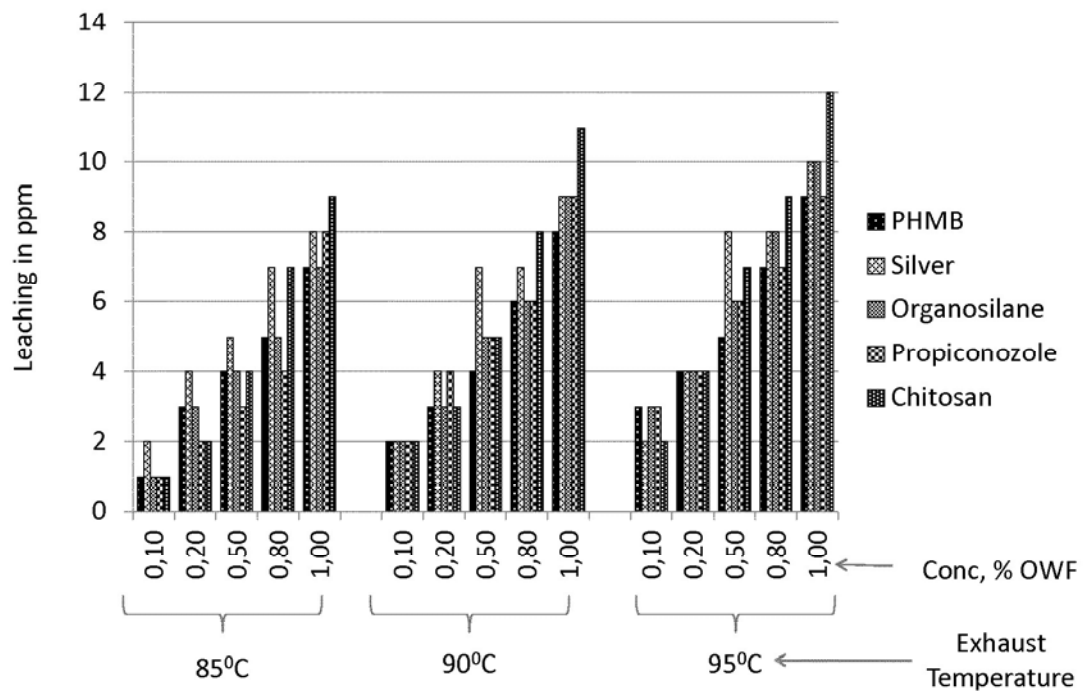


Fig. 15F : Leaching Test - Active Ingredients in Exhaust process

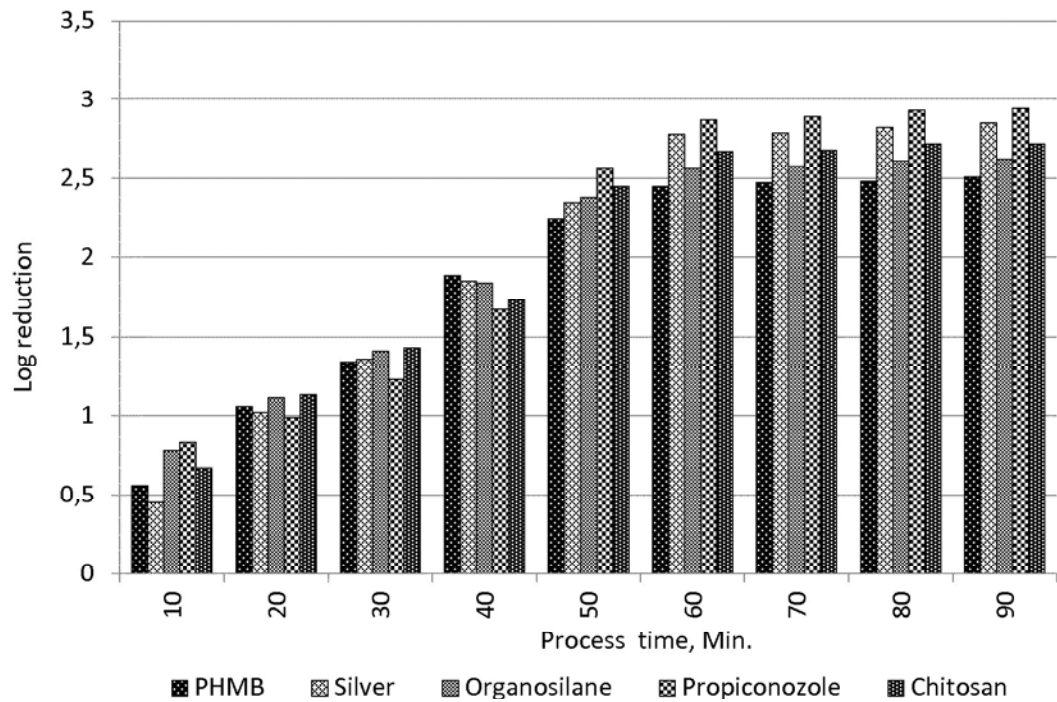


Fig. 16A : Performance Test - Active Ingredients in Exhaust Process (at 80°C)

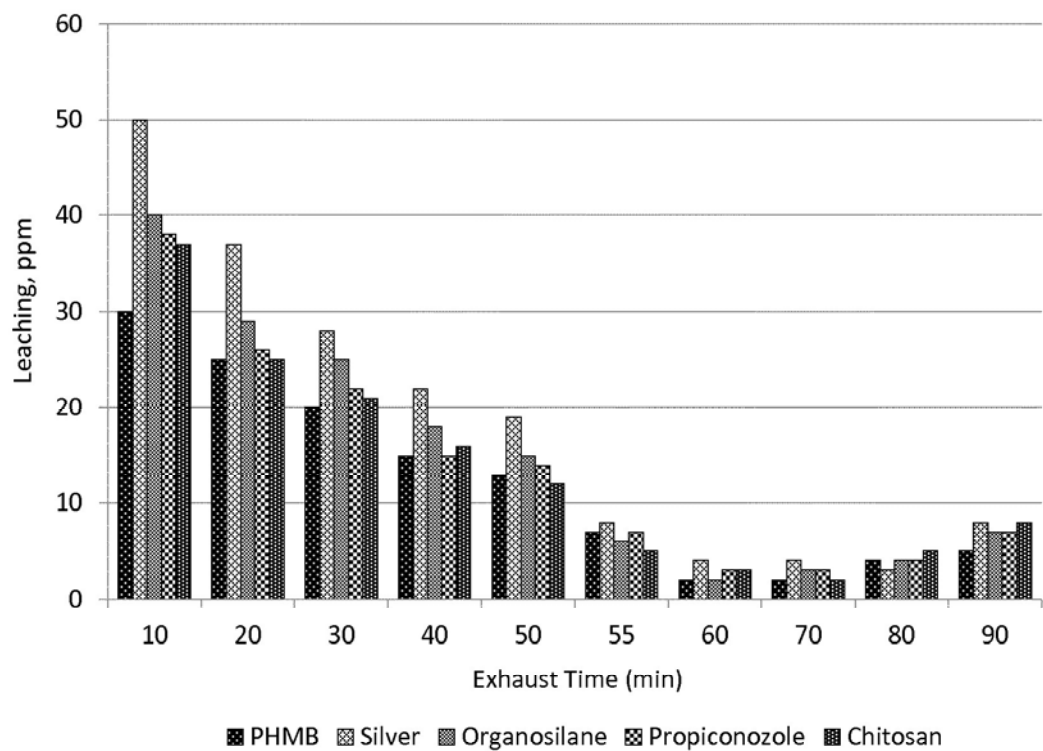


Fig. 16B : Leaching Test - Active Ingredients in Exhaust Process (at 80°C)

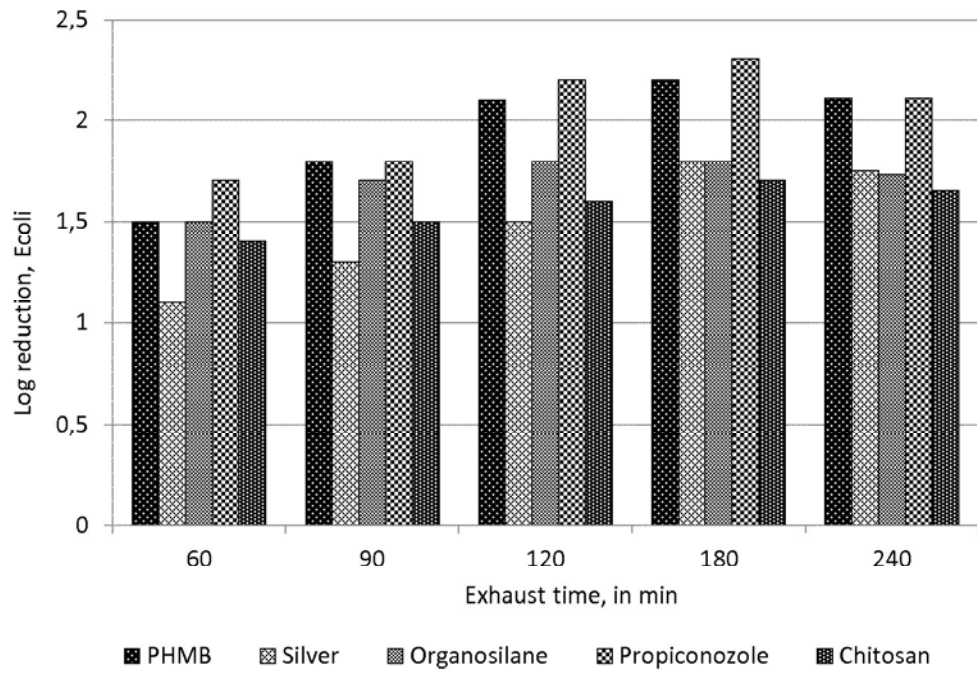


Fig. 17A : Performance Test - Active Ingredients in Exhaust Process (at 60°C)

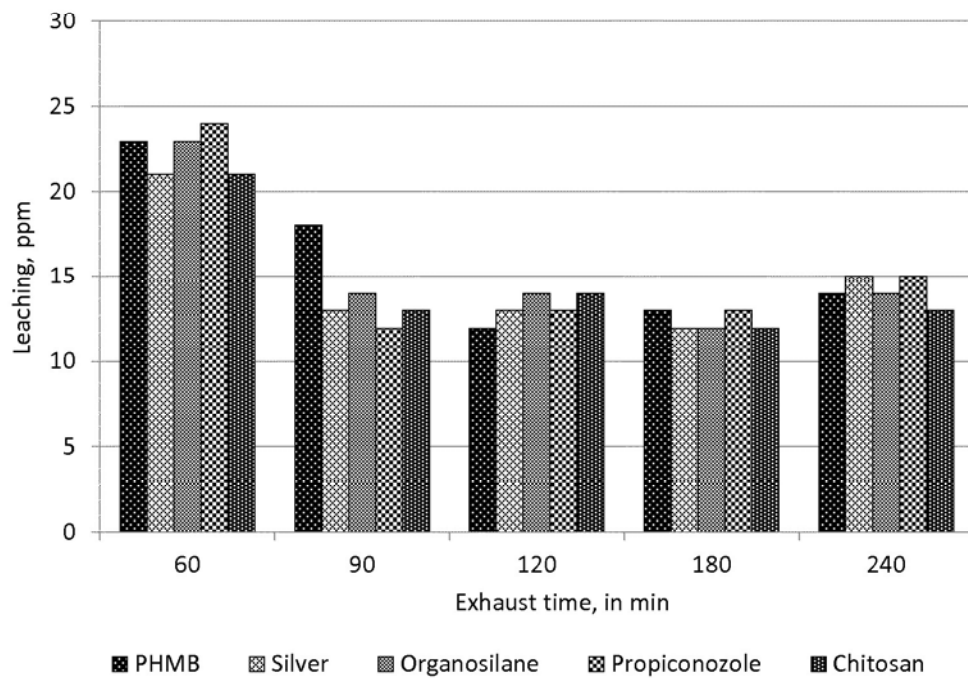


Fig. 17B : Leaching Test - Active Ingredients in Exhaust Process (at 60°C)

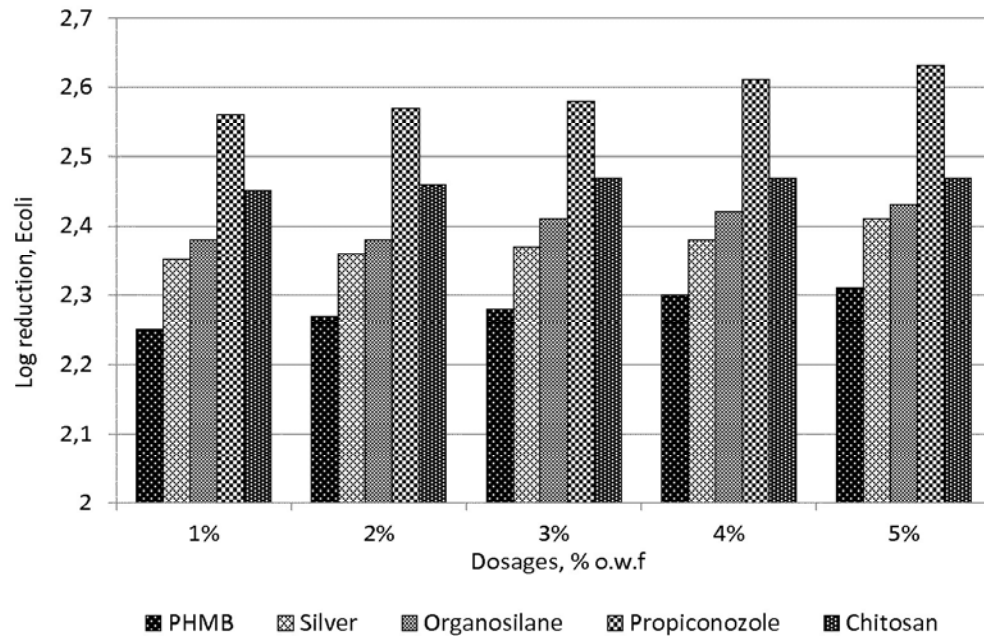


Fig. 18A : Performance Test - Active Ingredients in Exhaust Process

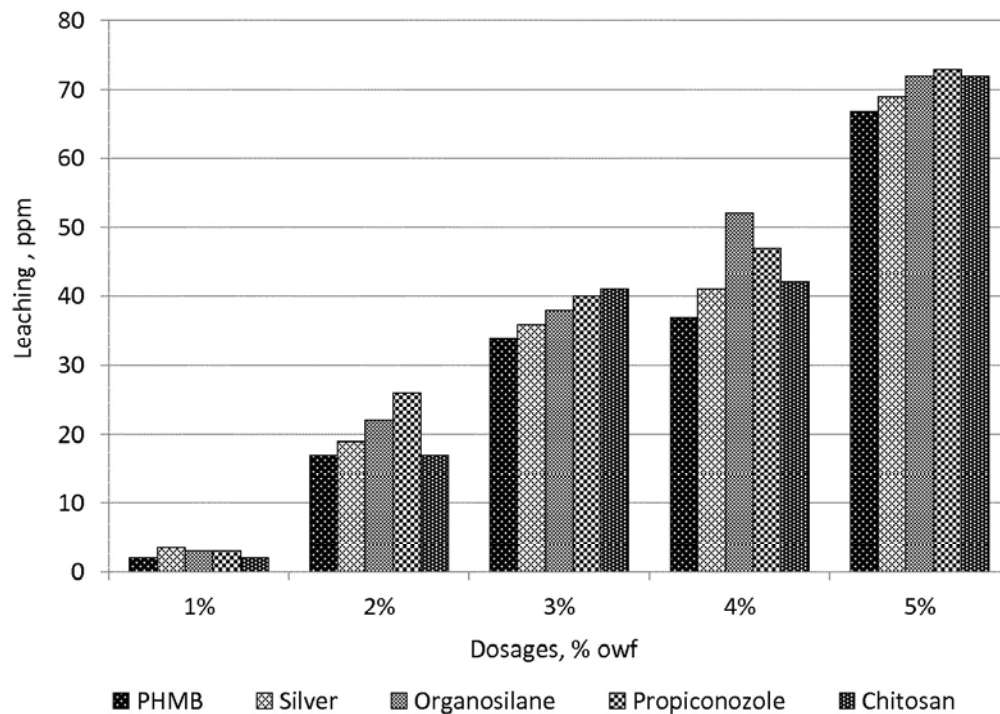


Fig. 18B : Leaching Test - Active Ingredients in Exhaust Process

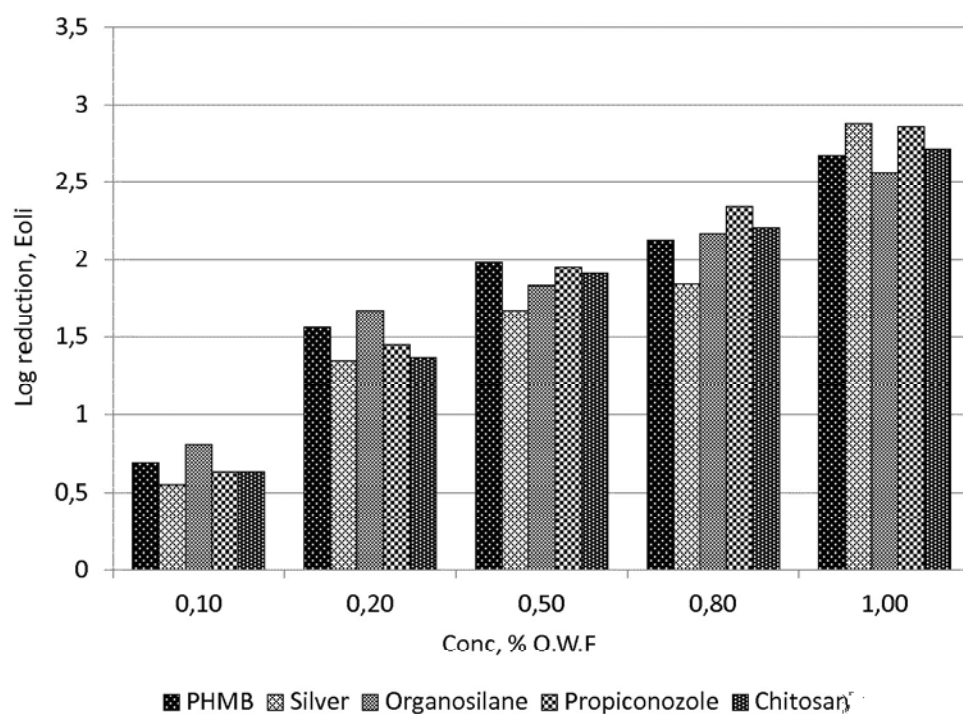


Fig. 19A : Performance Test – Active Ingredients in Exhaust Process (Cotton)

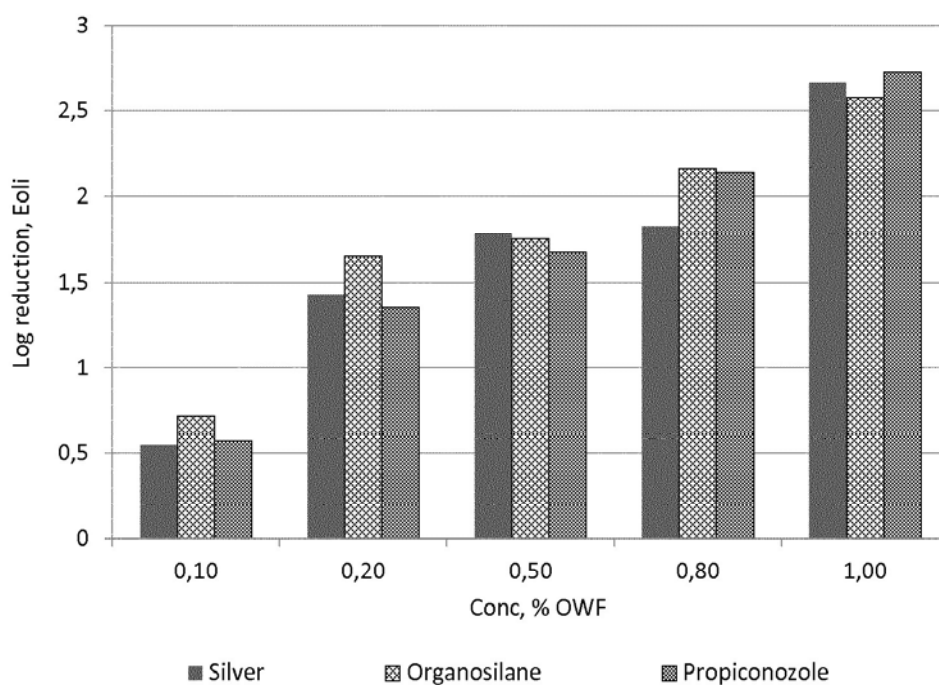


Fig. 19B : Performance Test of Active Ingredients in Exhaust Process (Polyester)

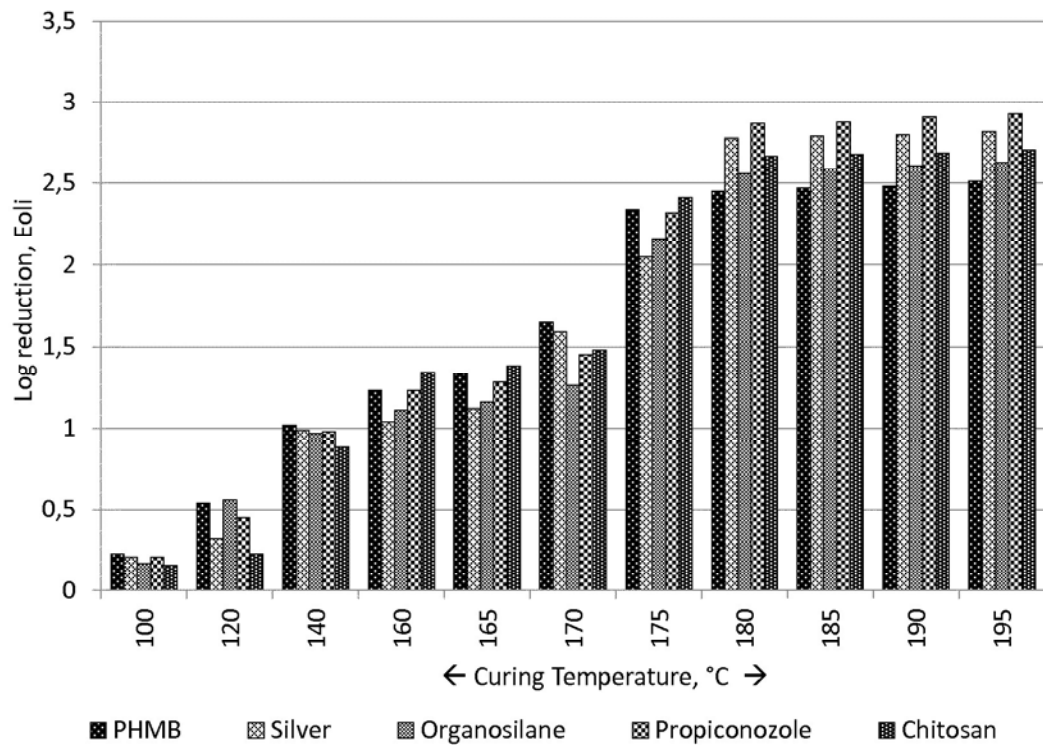


Fig. 20A : Performance Test – Curing Temperature

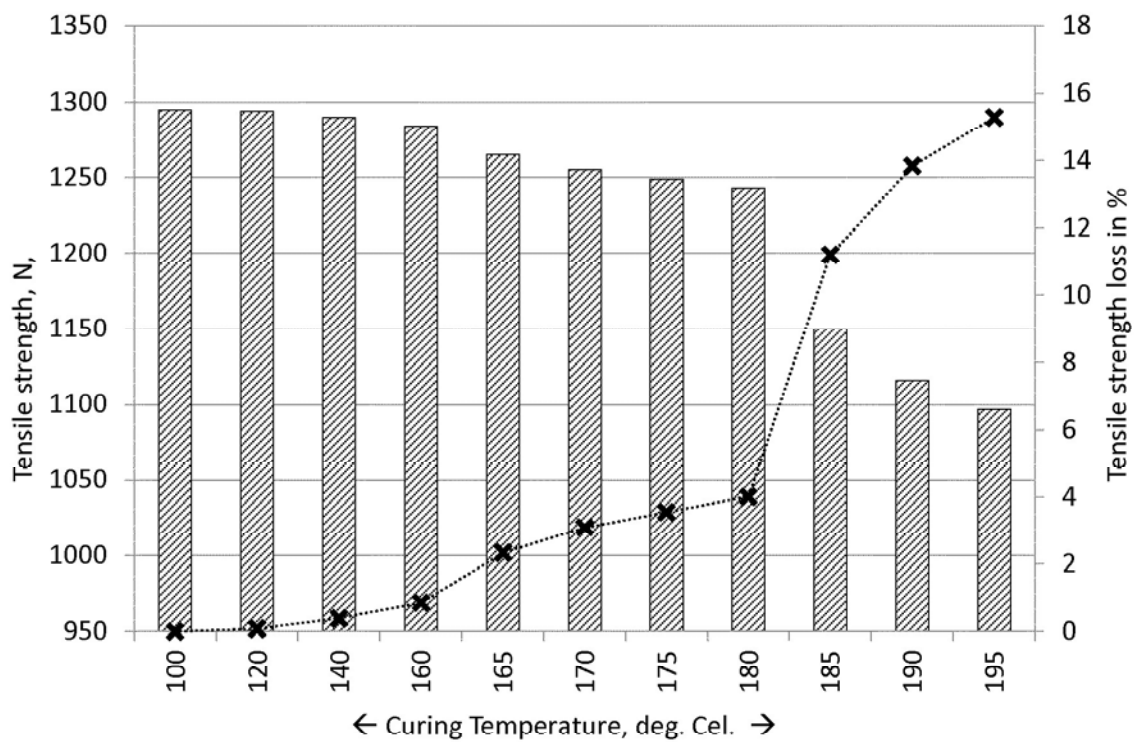


Fig. 20B: Tensile Strength Test – Curing Temperature

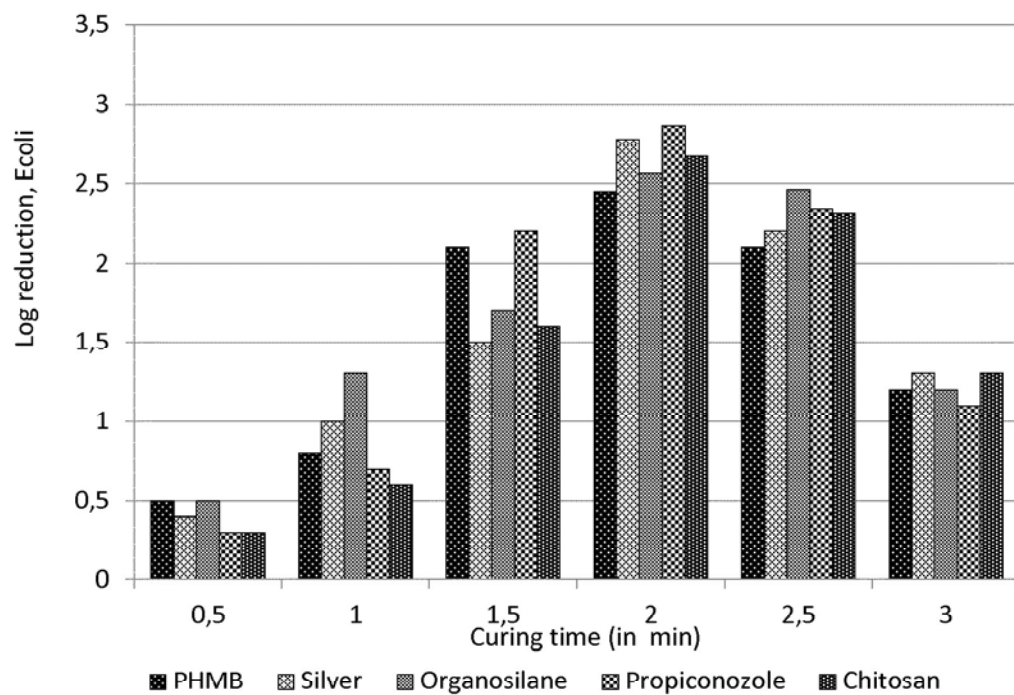


Fig. 21A Performance Test – Curing Time

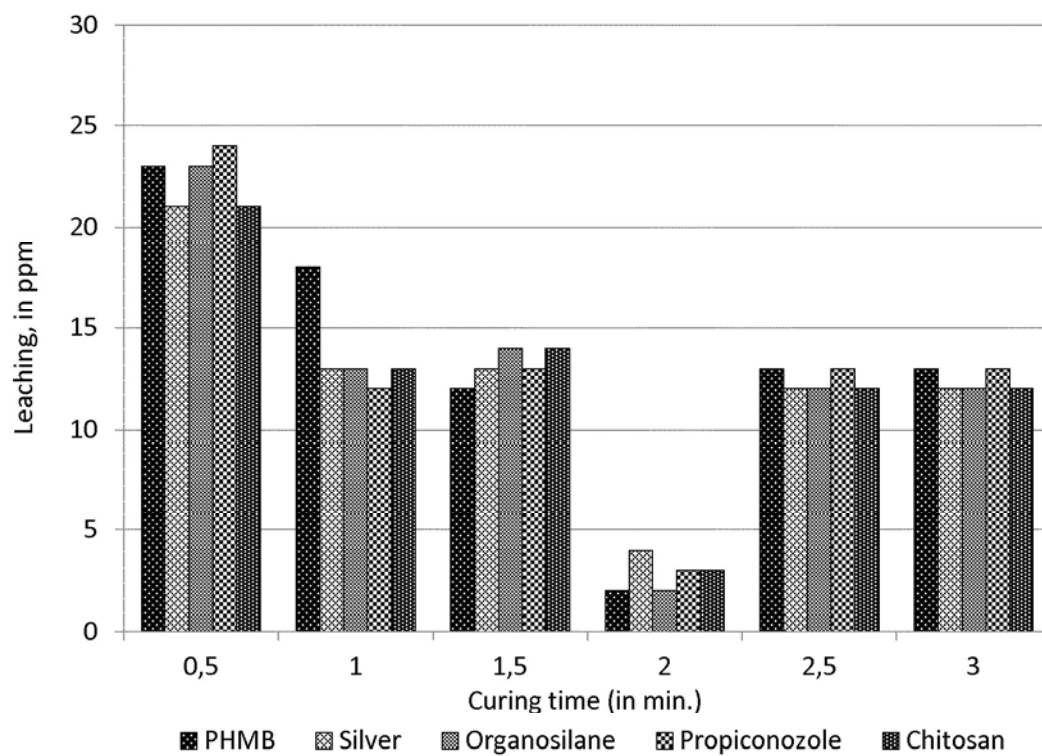


Fig. 21B : Leaching Test – Curing Temperature

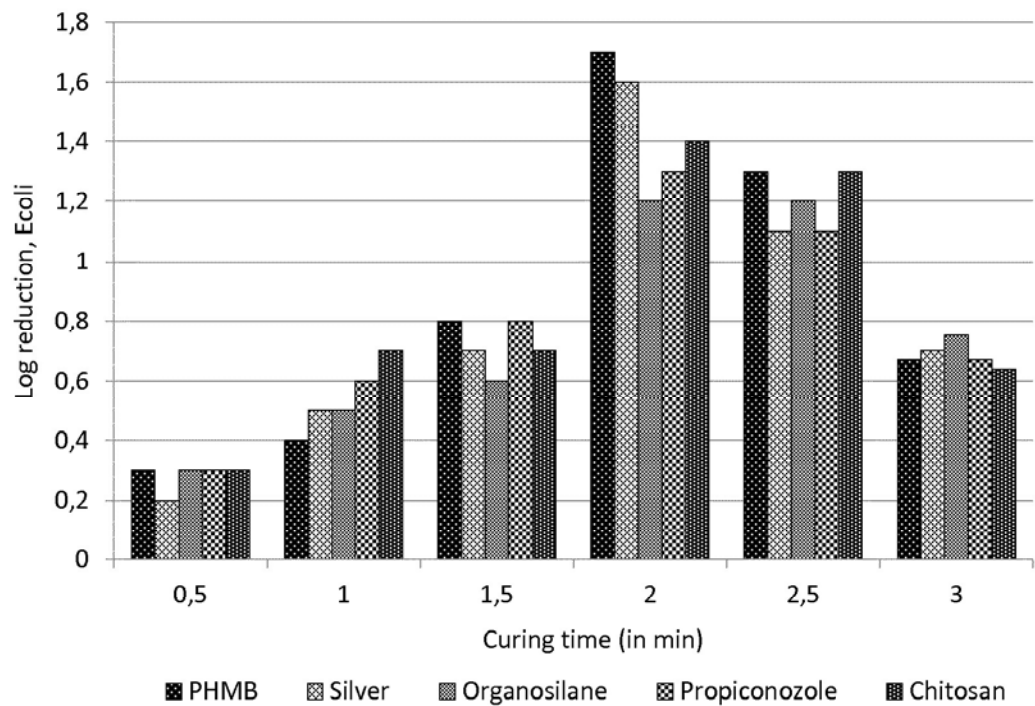


Fig. 22A : Performance Test – Curing Temperature at 170°C

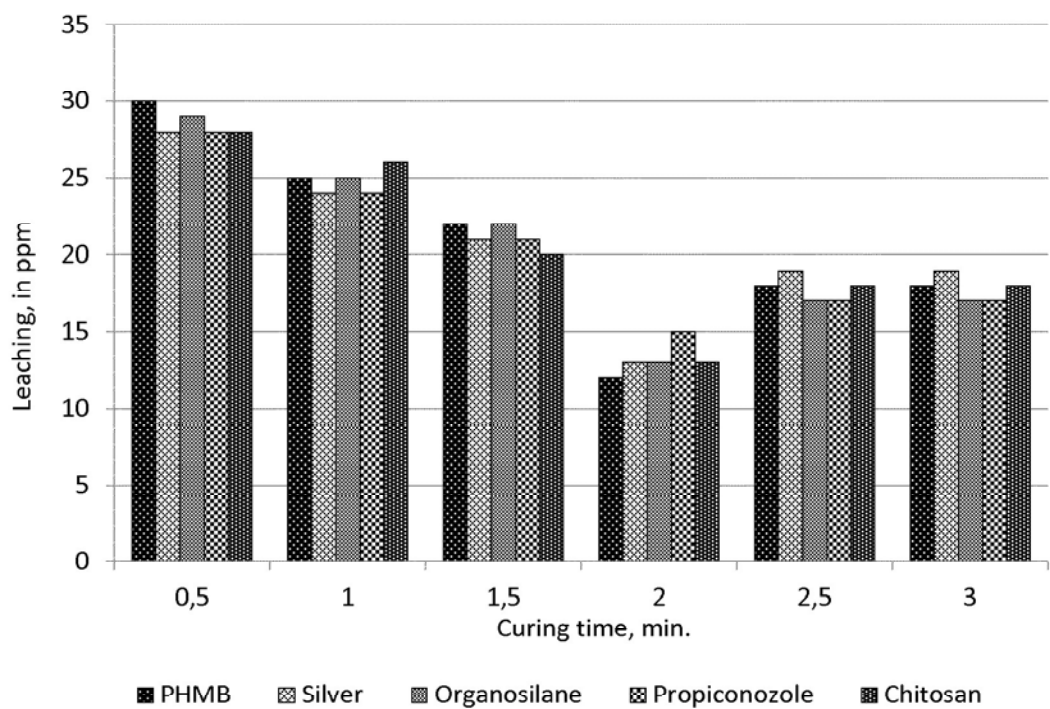


Fig. 22B : Leaching Test – Curing Temperature at 170°C

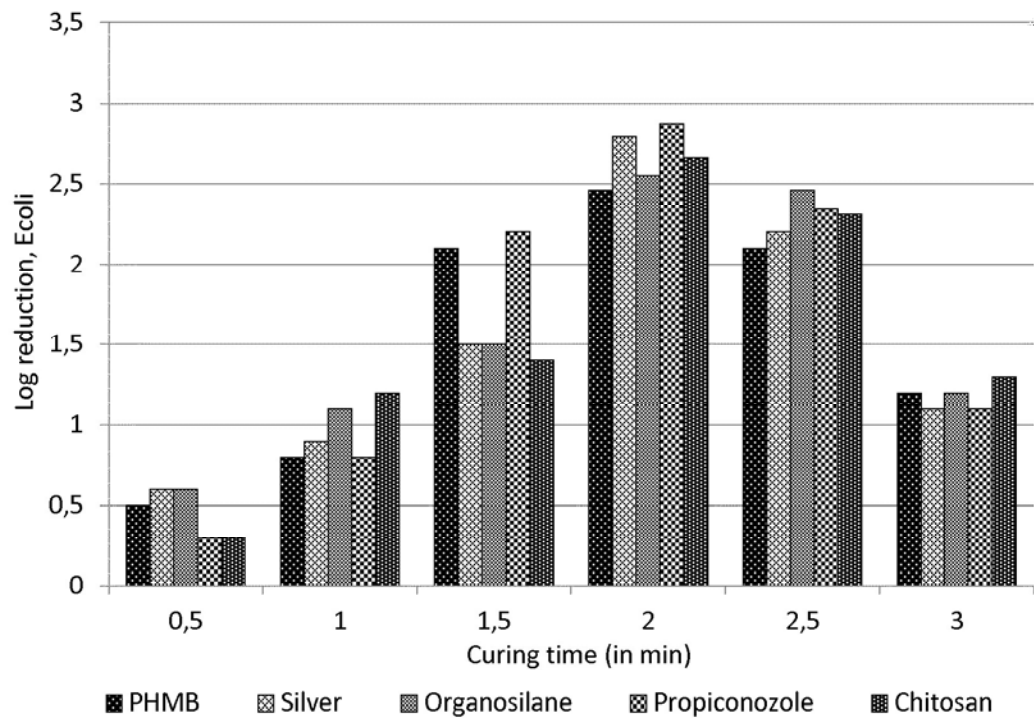


Fig. 23A : Performance Test – Curing Temperature of 190°C

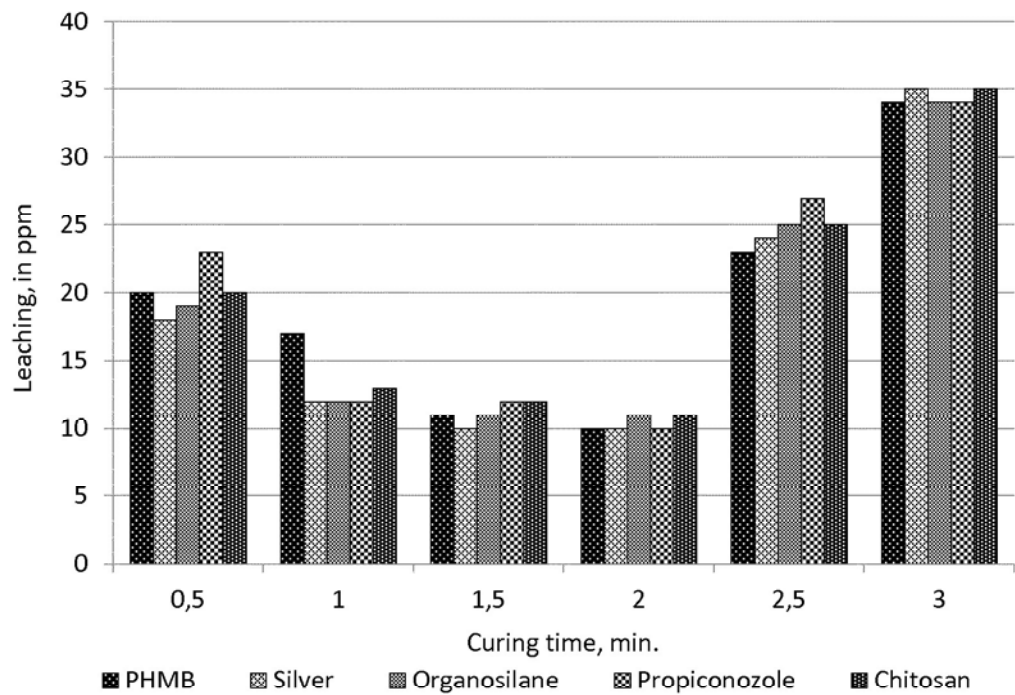


Fig. 23B : Leaching Test - Curing Temperature at 190°C

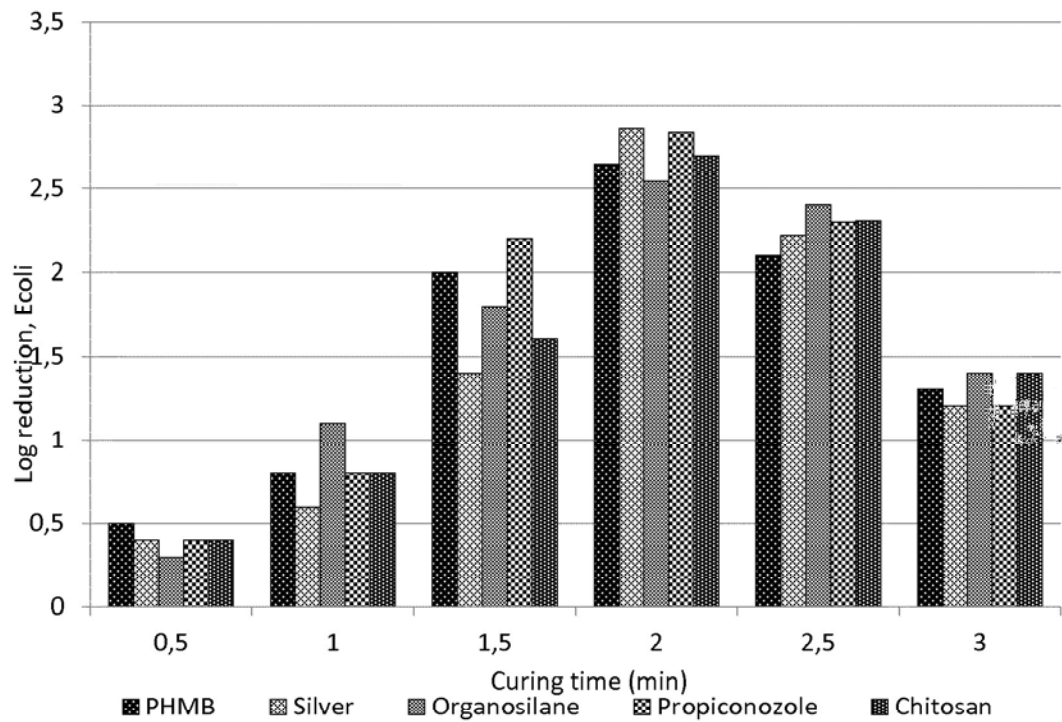


Fig. 24A : Performance Test – Curing Temperature of 180°C (Cotton)

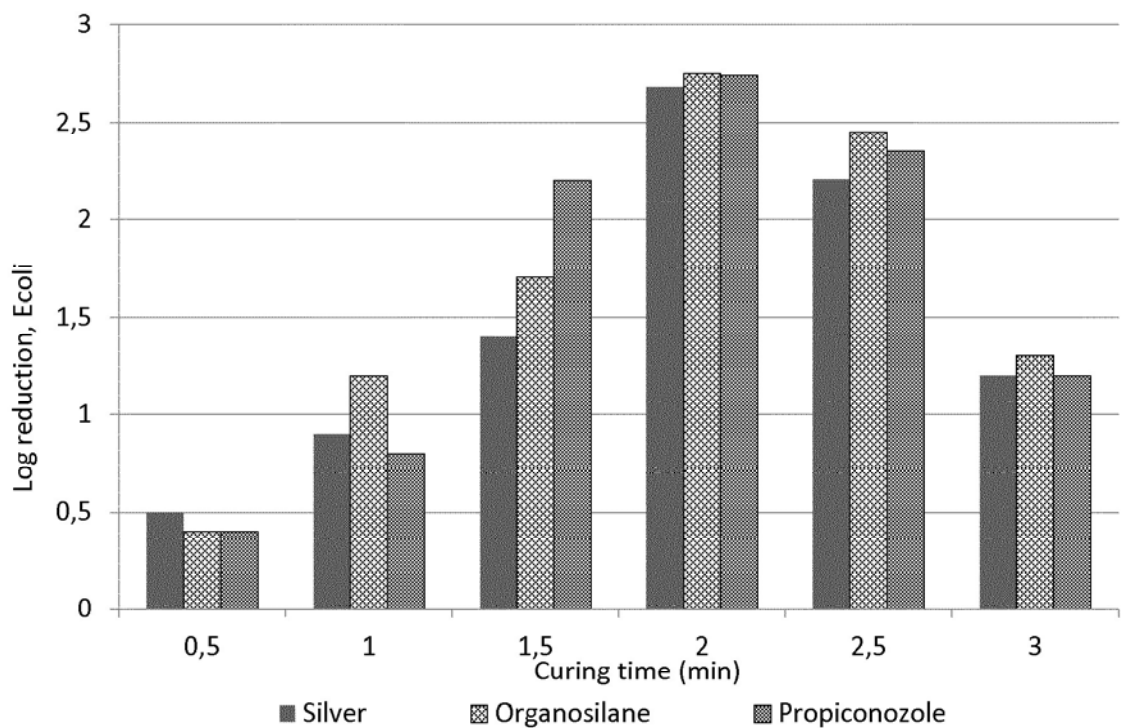


Fig. 24B: Performance Test – Curing temperature of 180°C (Polyester)

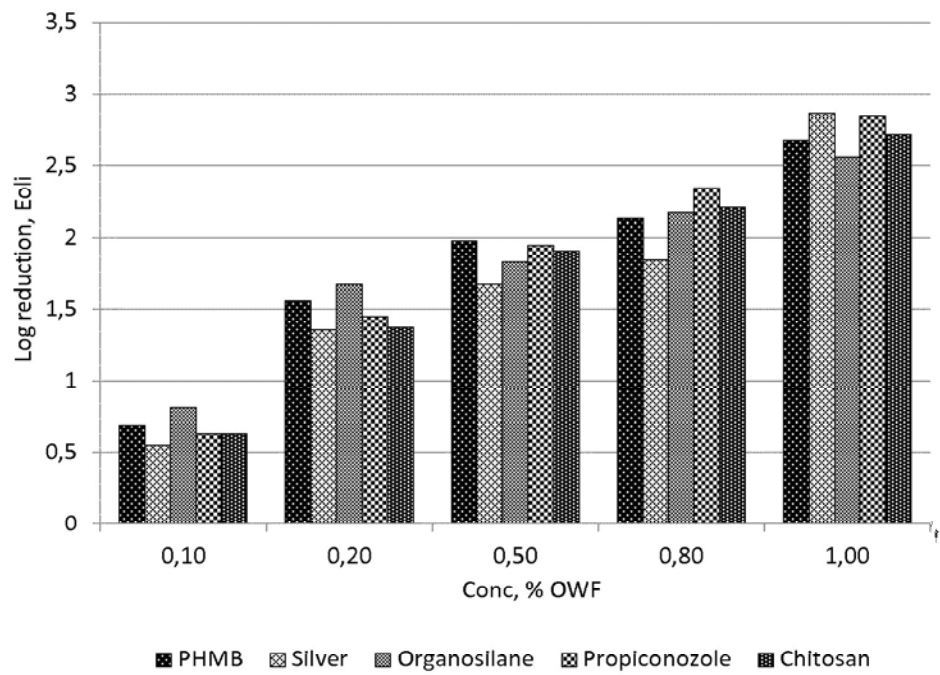


Fig. 25 A : Performance Test - Active Ingredients in Exhaust process (100GSM Cotton)

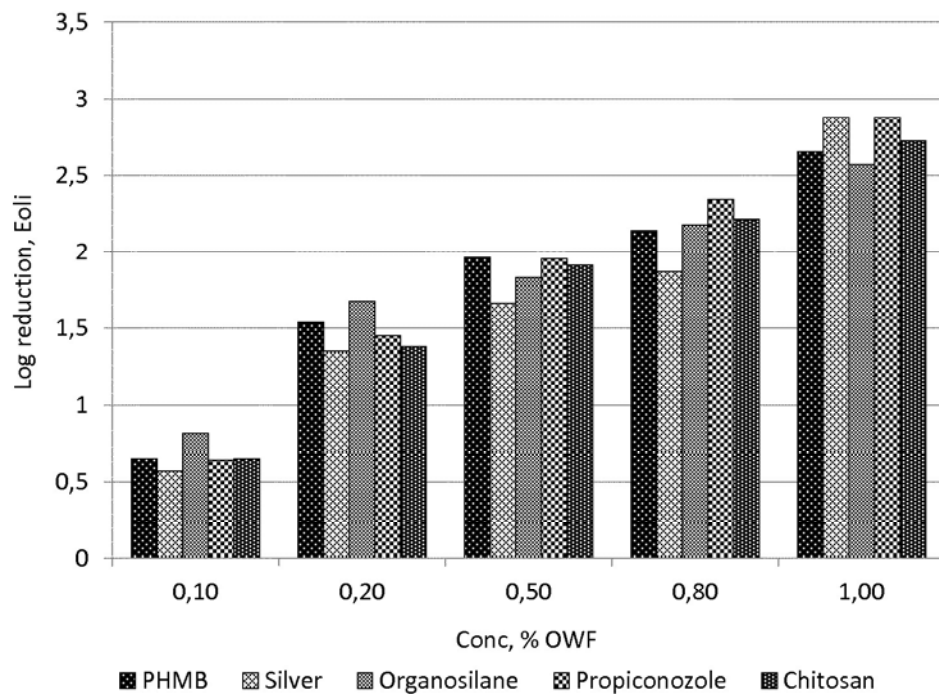


Fig. 25B : Performance Test - Active Ingredients in Exhaust process (300 GSM Cotton)

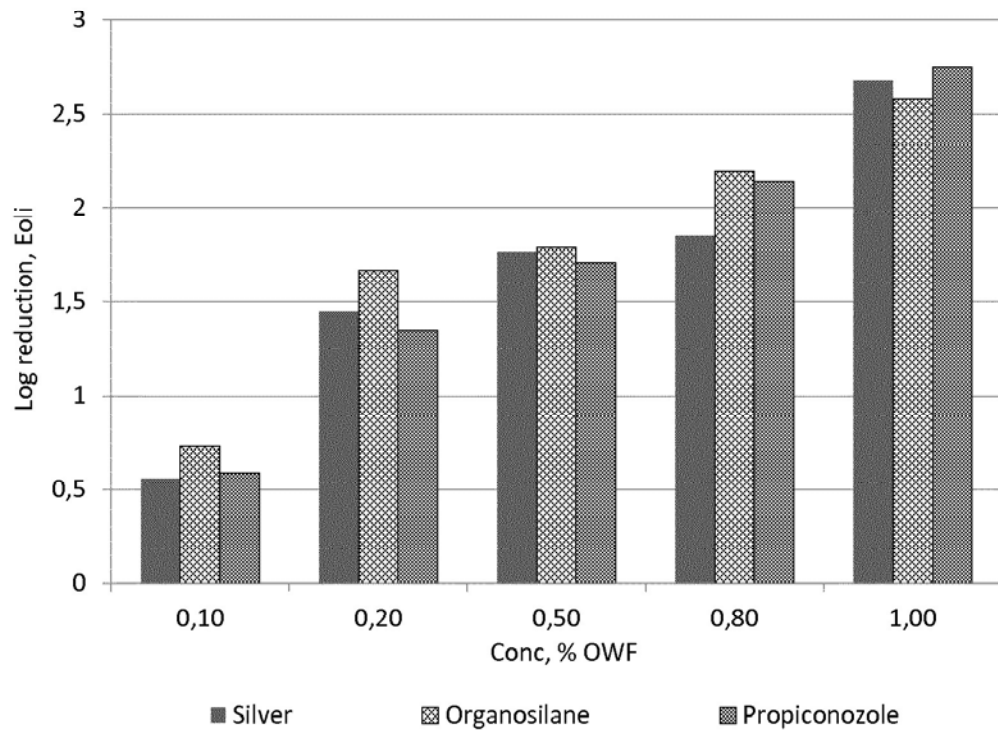


Fig. 26A : Performance Test - Active Ingredients in Exhaust process (100 GSM Polyester)

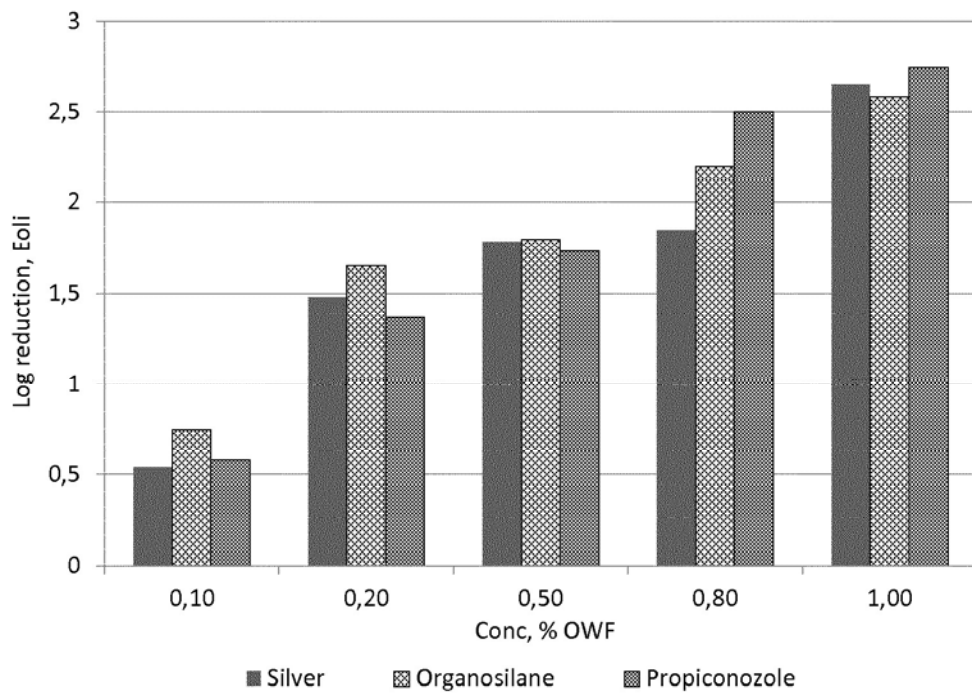


Fig. 26B : Performance Test - Active Ingredients in Exhaust Process (300 GSM Polyester)

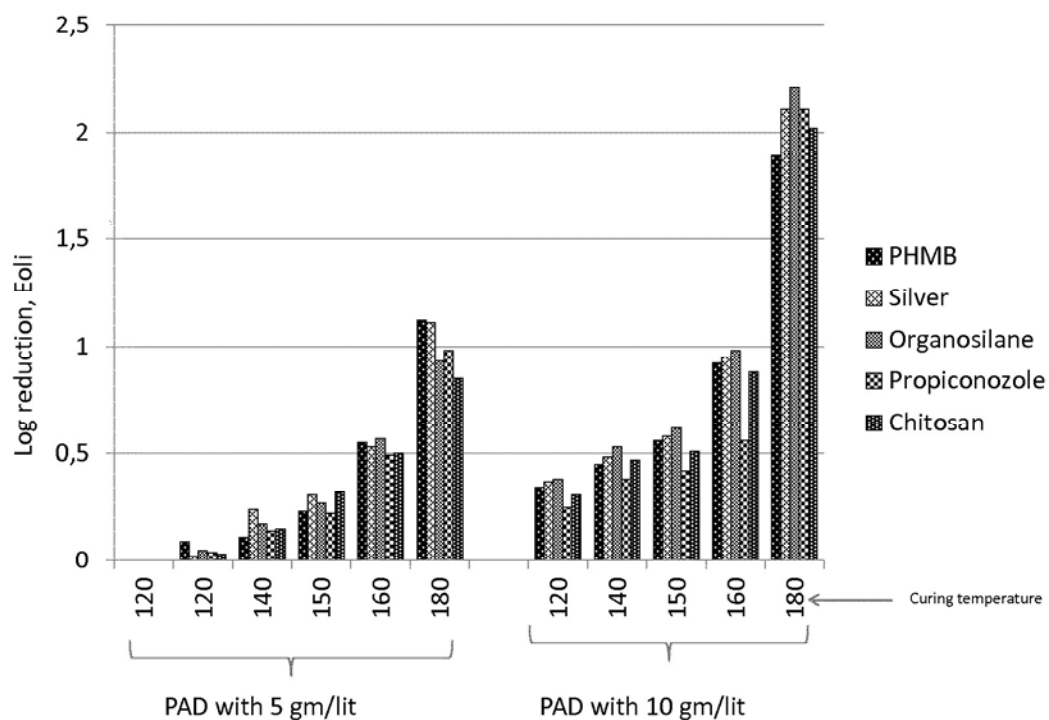


Fig. 27A: Performance Test - PAD process

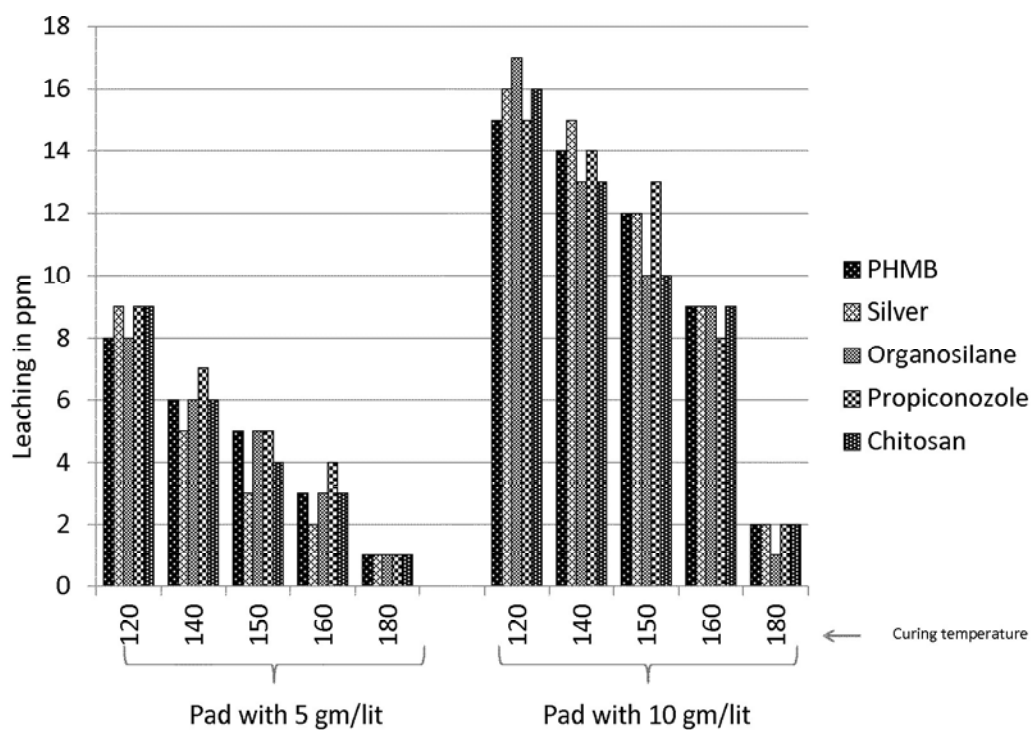


Fig. 27B : Leaching Test - PAD process

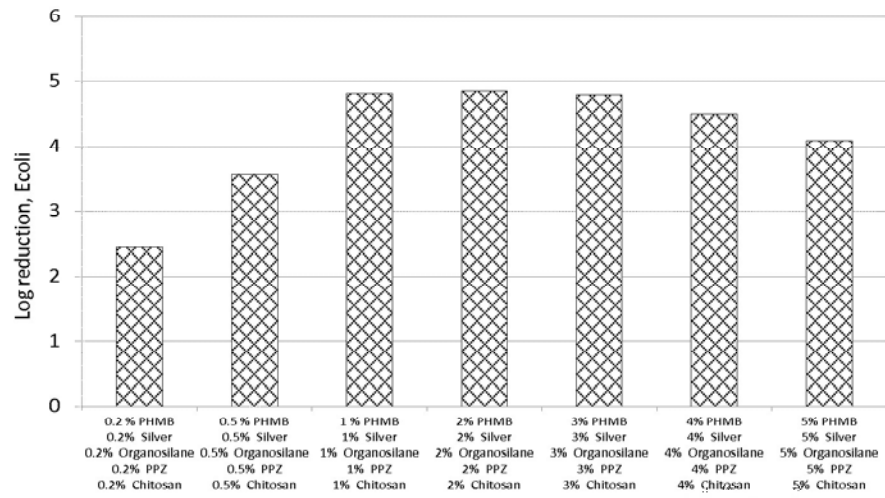


Fig. 28A : Performance Test - Mixture

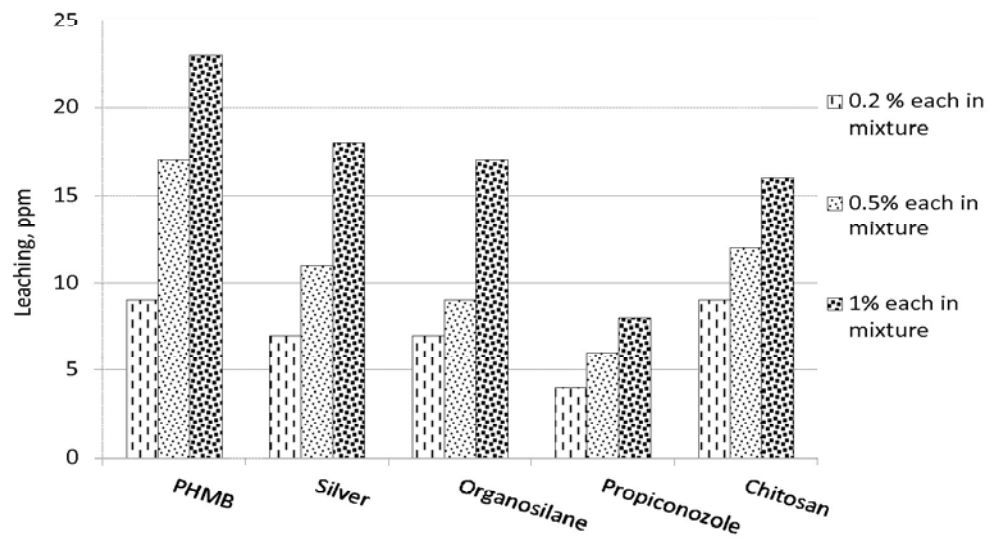


Fig. 28B : Leaching Test – Mixture

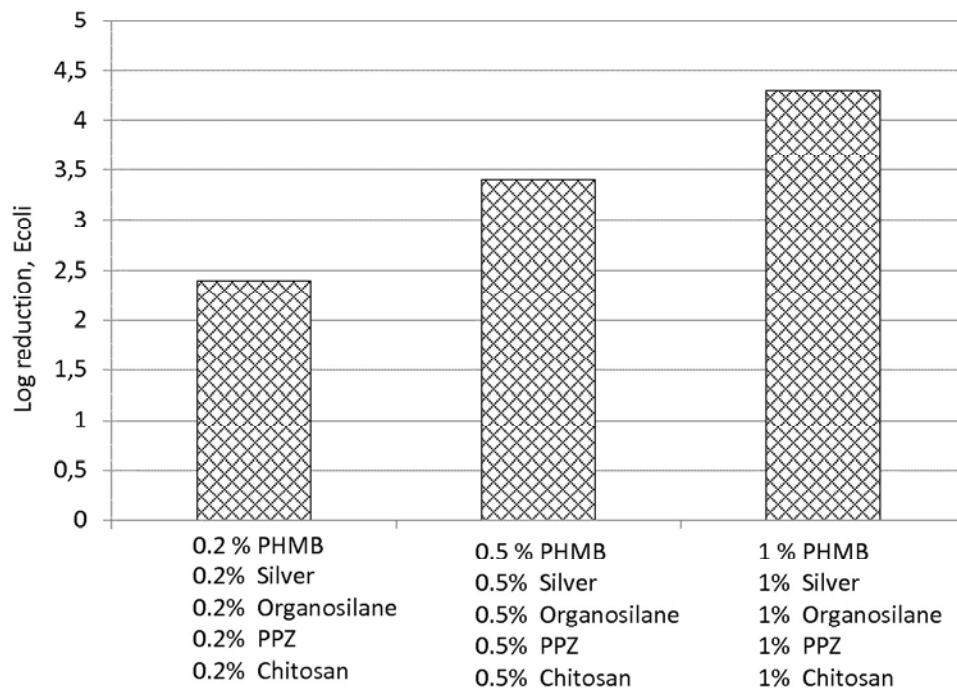


Fig. 29 : Performance Test - Mixture and Post Wash

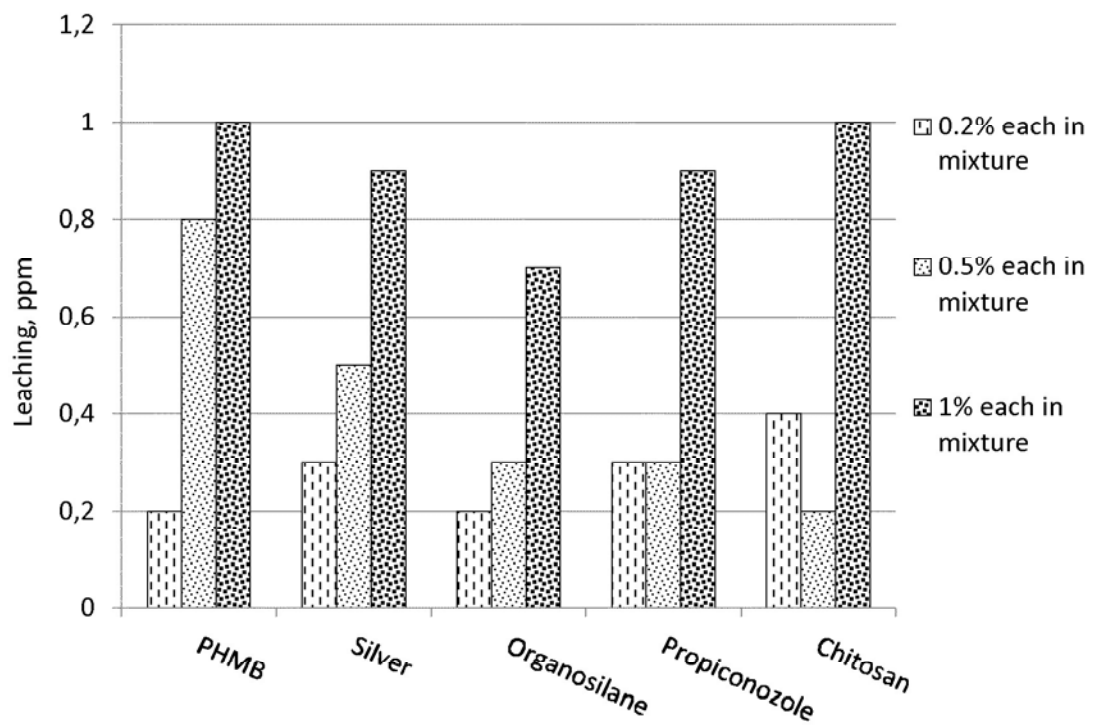


Fig. 29B : Leaching Test – Mixture and Post Wash

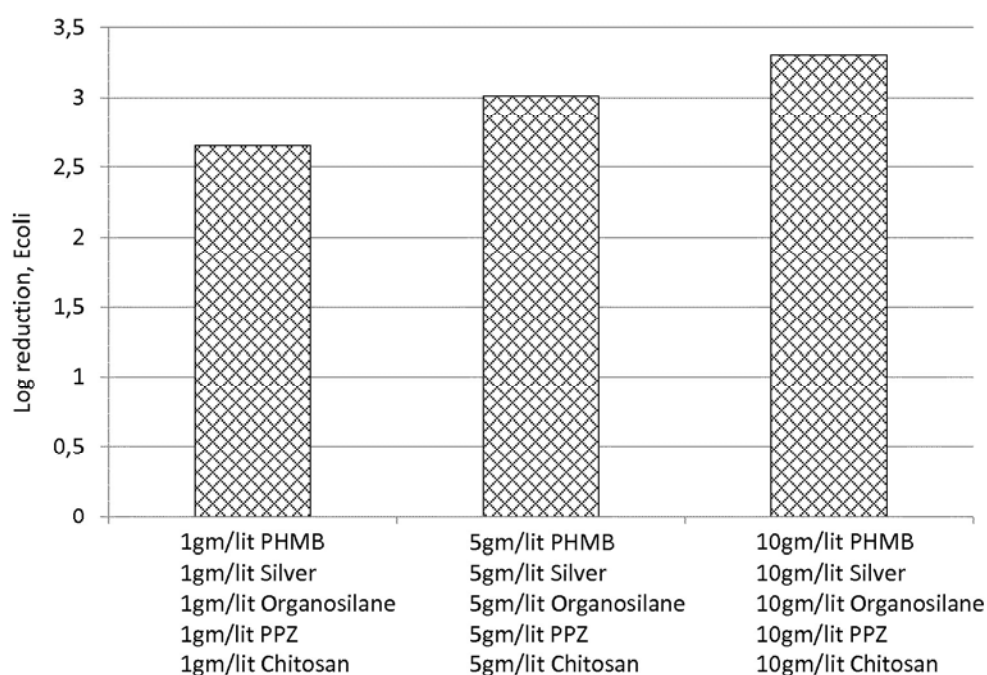


Fig. 30A : Performance Test – Mixture in PAD process

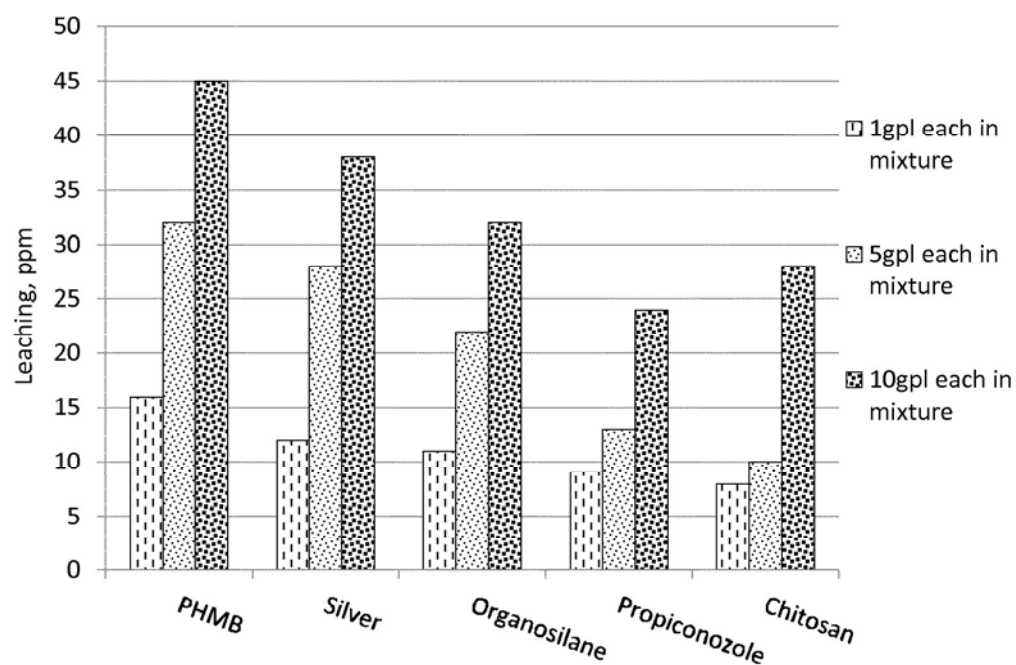


Fig. 30B: Leaching Test – Mixture in PAD process

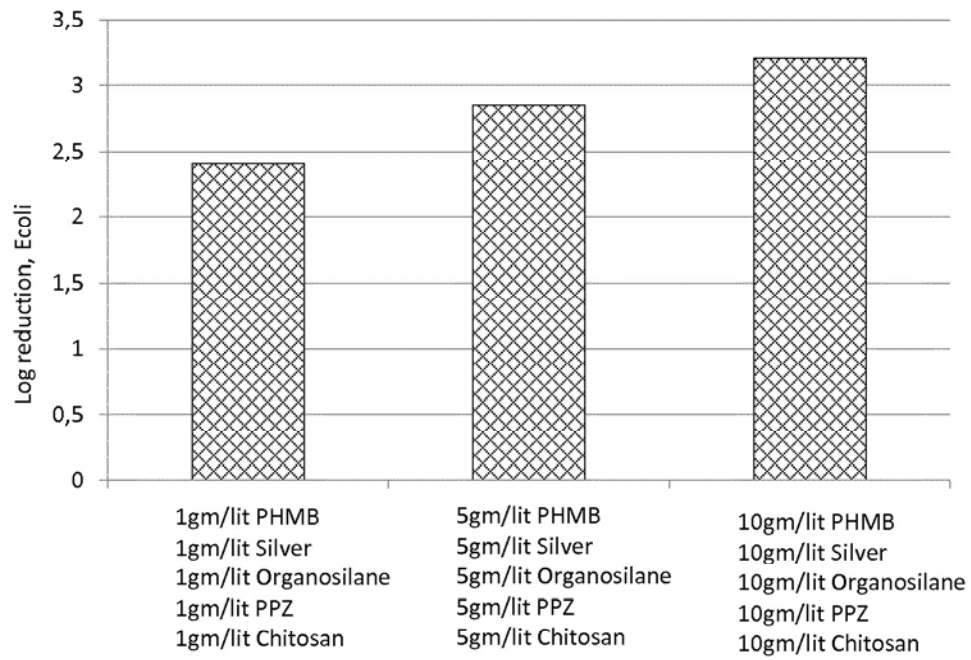


Fig. 31A: Performance Test – Mixture in PAD process and Post Wash

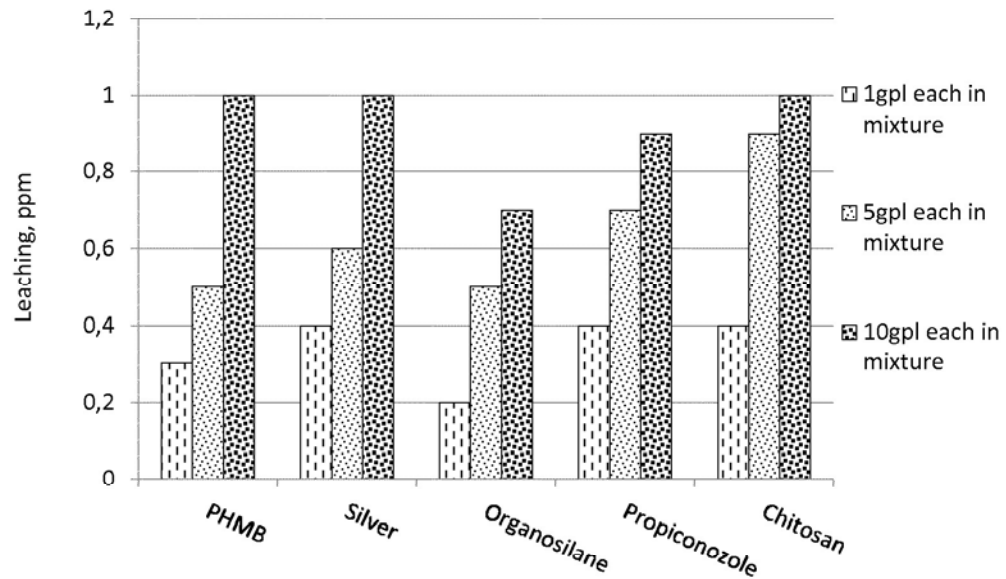


Fig. 31B: Leaching Test – Mixture in PAD process and Post Wash

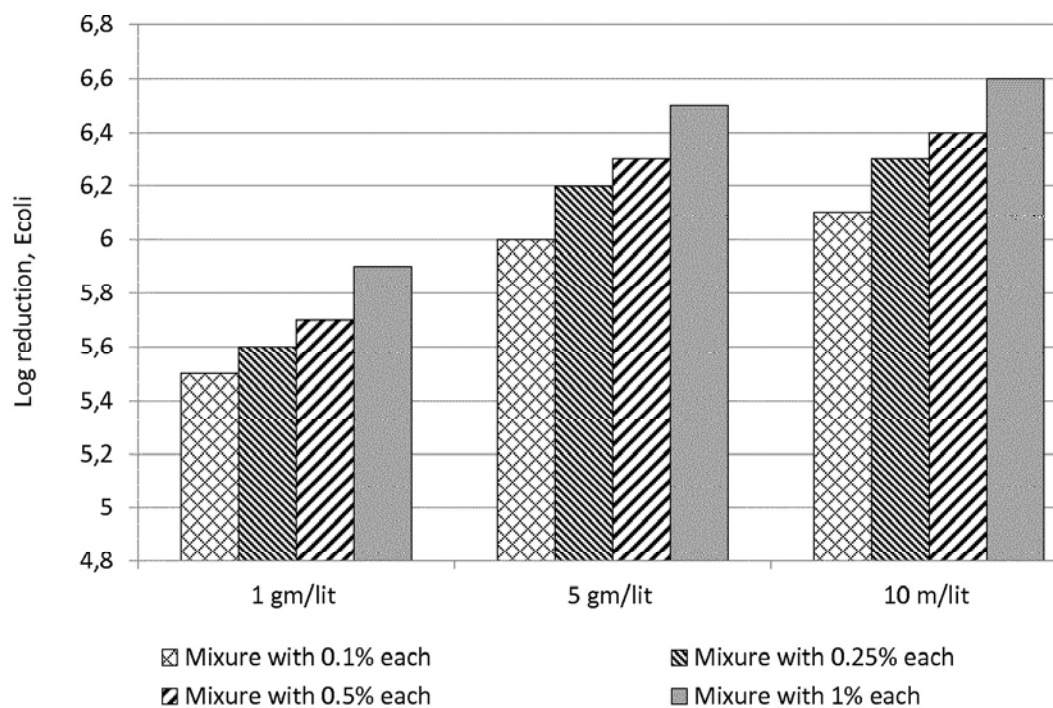


Fig. 32A : Performance Test – Two Cycle (Exhaust + PAD)

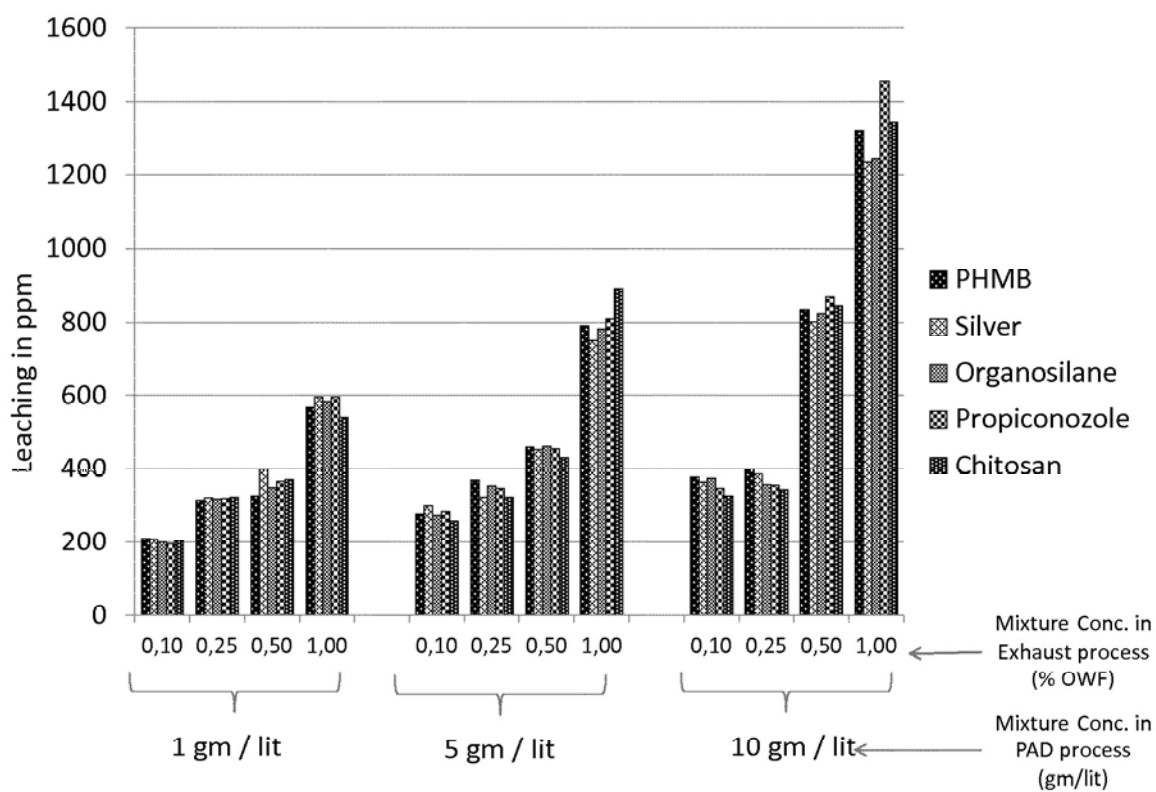


Fig. 32B : Leaching Test - Two Cycle (Exhaust + PAD)

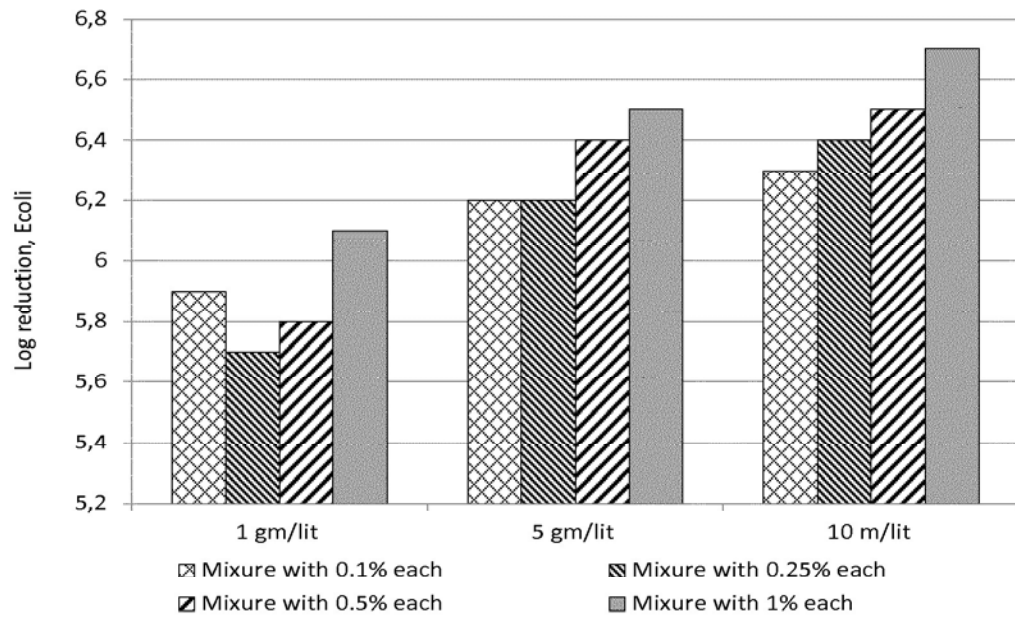


Fig 33A: Performance Test – Two Cycle (Exhaust + Wash + PAD)

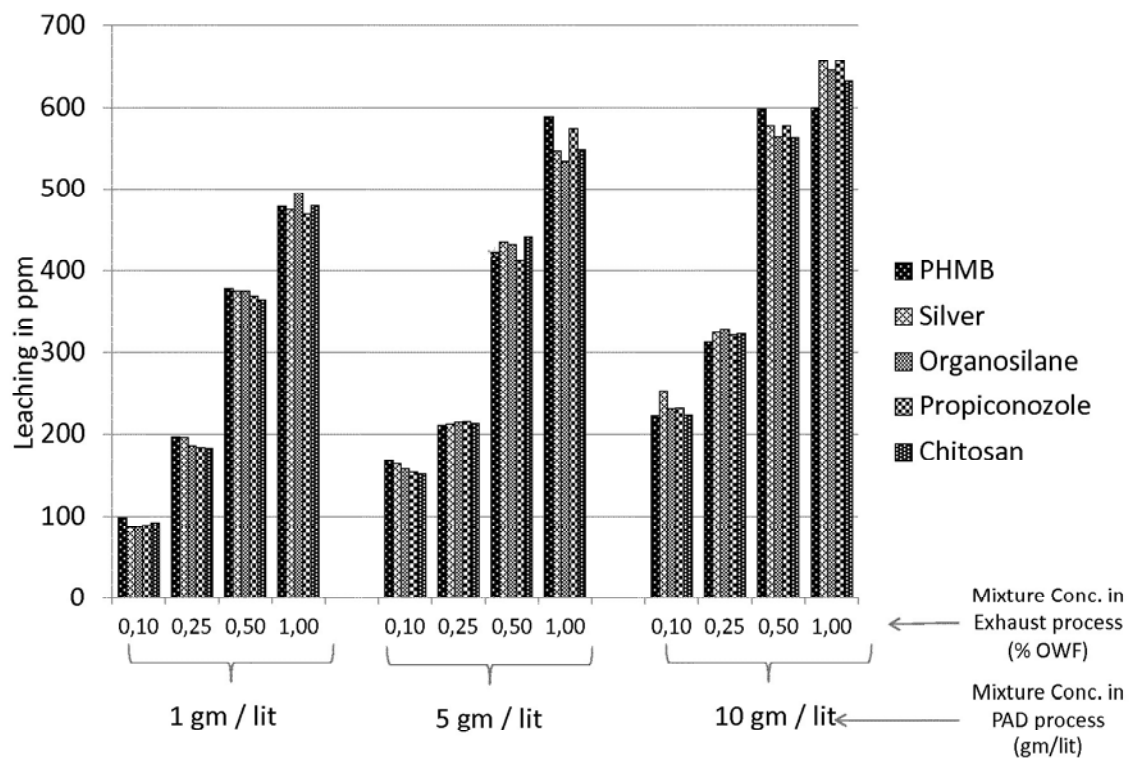


Fig. 33B : Leaching Test - Two cycle (Exhaust + Wash + PAD)

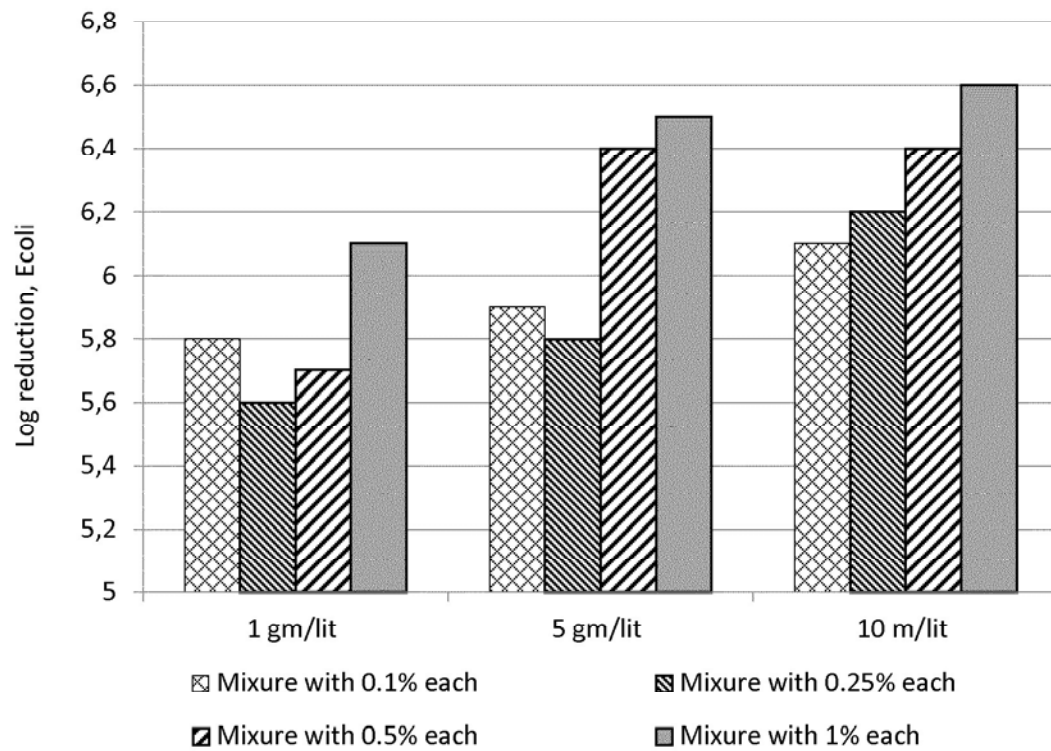


Fig. 34A: Performance Test – Two Cycle (Exhaust + PAD + Wash)

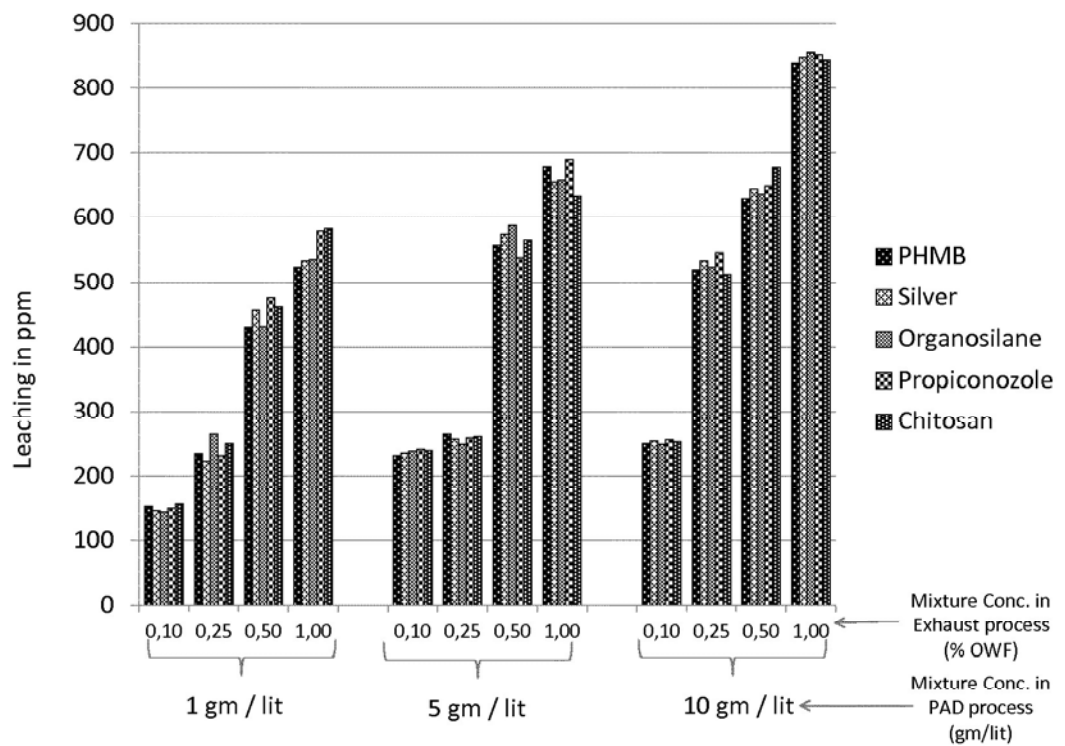


Fig. 34B : Leaching Test - Two Cycle (Exhaust + PAD + Wash)

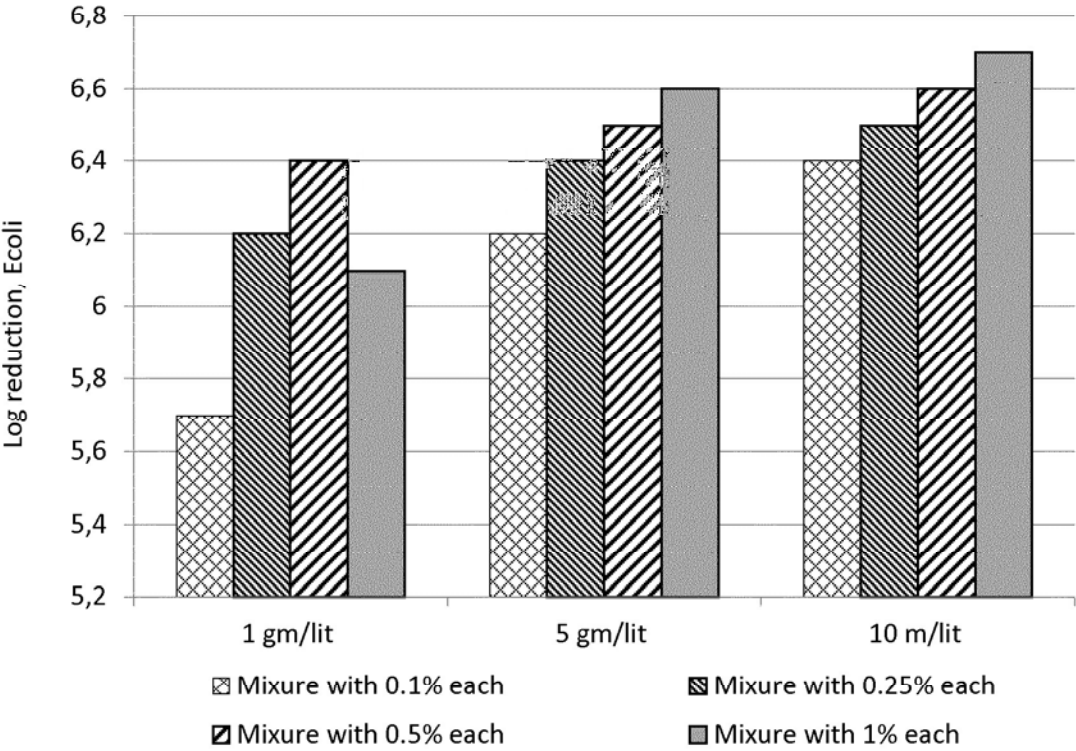


Fig. 35A : Performance Test – Two Cycle (Exhaust + Wash + PAD + Wash)

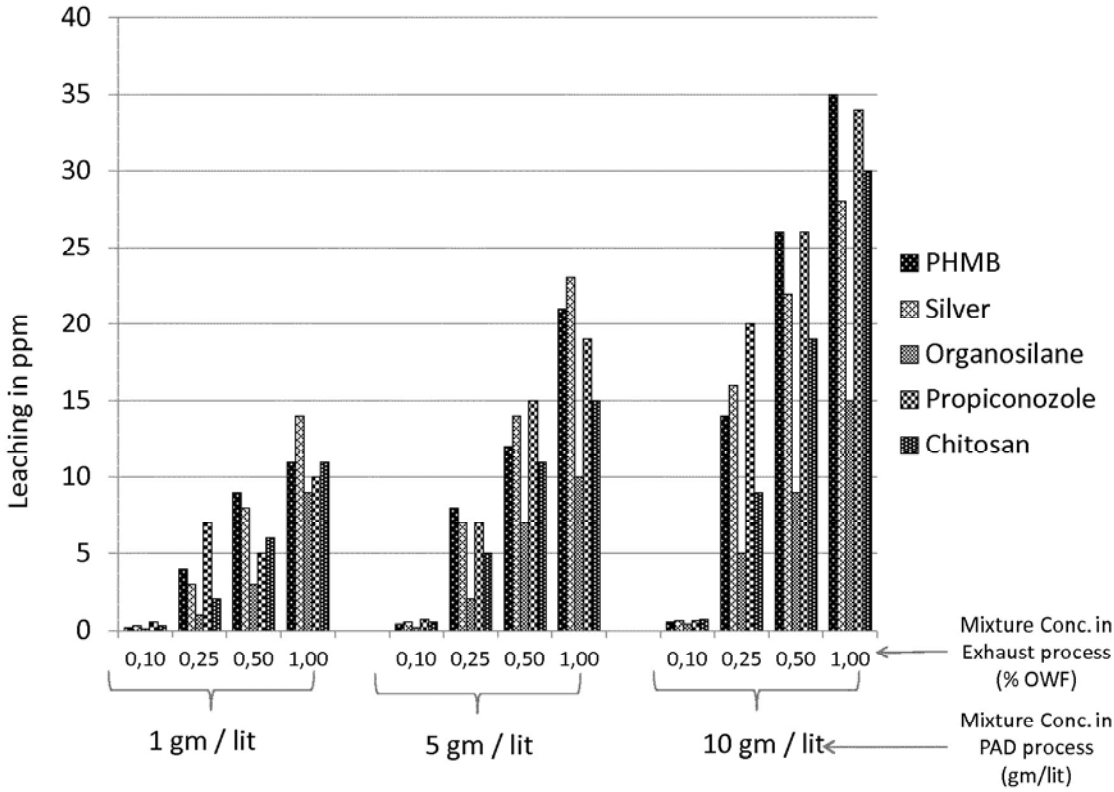


Fig. 35B : Leaching Test – Two Cycle (Exhaust + Wash + PAD + Wash)

Exhaustion process % owf / gpl	LG/BP 01	LG/BP 02	LG/BP 03	LG/BP 04	LG/BP 05	LG/BP 06	LG/BP 07	OT gown
Organosilane	0.72%	0.47%	0.47%	0.36%	0.25%	0.25%	0.36%	0.36%
	3.6 gpl	2.35 gpl	2.35 gpl	1.80 gpl	1.25 gpl	1.25 gpl	1.80 gpl	1.80 gpl
Silver cations	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
			0.05 gpl	0.05 gpl	0.05 gpl	0.05 gpl	0.05 gpl	0.05 gpl
Chitosan	0.00%	0.00%	0.00%	0.16%	0.16%	0.16%	0.00%	0.00%
				0.80 gpl	0.80 gpl	0.80 gpl		
Propiconazole	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.13%	0.13%
						0.63 gpl	0.63 gpl	0.63 gpl
PHMB	0.00%	0.10%	0.10%	0.07%	0.07%	0.07%	0.10%	0.16%
		0.50 gpl	0.50 gpl	0.35 pgl	0.35 pgl	0.35 pgl	0.50 gpl	0.8 gpl
Padding process % owf / gpl	LG/BP 01	LG/BP 02	LG/BP 03	LG/BP 04	LG/BP 05	LG/BP 06	LG/BP 07	OT gown
Organosilane	0.23%	0.23%	0.23%	0.23%	0.17%	0.17%	0.28%	0.28%
	5.7 gpl	5.7 gpl	5.7 gpl	5.7 gpl	4.3 gpl	4.3 gpl	7.2 gpl	7.2 gpl
Silver cations	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
			0.02gpl	0.02 gpl	0.02 gpl	0.02 gpl		
Chitosan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Propiconazole	0.00%	0.00%	0.00%	0.00%	0.10%	0.05%	0.10%	0.10%
					2.5 gpl	1.3 gpl	2.5 gpl	2.5 gpl
PHMB	0.00%	0.04%	0.04%	0.04%	0.04%	0.04%	0.00%	0.00%
		1.0 gpl	1.0 gpl	1.0 gpl	1.0 gpl	1.0 gpl		
Total actives weight increase % owf	LG/BP 01	LG/BP 02	LG/BP 03	LG/BP 04	LG/BP 05	LG/BP 06	LG/BP 07	OT gown
Organosilane	0.95%	0.70%	0.70%	0.59%	0.42%	0.42%	0.64%	0.64%
Silver cations	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Chitosan	0.00%	0.00%	0.00%	0.16%	0.16%	0.16%	0.00%	0.00%
Propiconazole	0.00%	0.00%	0.00%	0.00%	0.10%	0.18%	0.23%	0.23%
PHMB	0.00%	0.14%	0.14%	0.11%	0.11%	0.11%	0.10%	0.16%
Exhaustion	0.72%	0.57%	0.58%	0.60%	0.49%	0.62%	0.60%	0.66%
Padding	0.23%	0.27%	0.27%	0.27%	0.31%	0.26%	0.38%	0.38%
total	0.95%	0.84%	0.85%	0.87%	0.80%	0.88%	0.98%	1.04%

Fig. 36

	LG/BP 01	LG/BP 02	LG/BP 03	LG/BP 04	LG/BP 05	LG/BP 06	LG/BP 07
Leaching (each of the agents)						<1 ppm	<1 ppm
Antimicrobial performance, test method AATCC 100 (24 hours)							
Staph. Aureus ATCC 43300)	3,25 log	3,65 log	4,14 log	4,23 log	6,06 log	6,45 log	
E.Coli ATCC 25922)	2,89 log	3,15 log	3,45 log	3,65 log	5,76 log	6,16 log	
V.Cholerae ATCC 14035)	2,15 log	2,56 log	2,86 log	3,87 log	5,25 log	4,14 log	
K.Pneumonea ATCC 13883)	2,26 log	2,71 log	3,1 log	4,25 log	6,83 log	6,62 log	
A.Niger ATCC 16404)	0,11 log	0,21 log	2,55 log	3,87 log	5,27 log	5,43 log	
C.Difficile spores ATCC 43598)	0,09 log	0,13 log	0,45 log	0,89 log	1,86 log	2,45 log	
Antimicrobial performance, test method EPA 90072PA4 (10 min)							
Staph. Aureus ATCC 43300)						2,66 log	3,26 log
E.Coli ATCC 25922)						2,32 log	3,18 log
V.Cholerae ATCC 14035)							
K.Pneumonea ATCC 13883)						2,65 log	3,25 log
A.Niger ATCC 16404)						2,47 log	3,65 log
C.Difficile spores ATCC 43598)						0,67 log	1,28 log
Antimicrobial performance, customized test method							
Staph. Aureus ATCC 43300)							
E.Coli ATCC 25922)				6,15 log	6,33 log	6,67 log	
V.Cholerae ATCC 14035)				6,80 log	6,86 log	6,92 log	
K.Pneumonea ATCC 13883)							
A.Niger ATCC 16404)							
C.Difficile spores ATCC 43598)				1,20 log	3,15 log	4,65 log	

Fig. 37

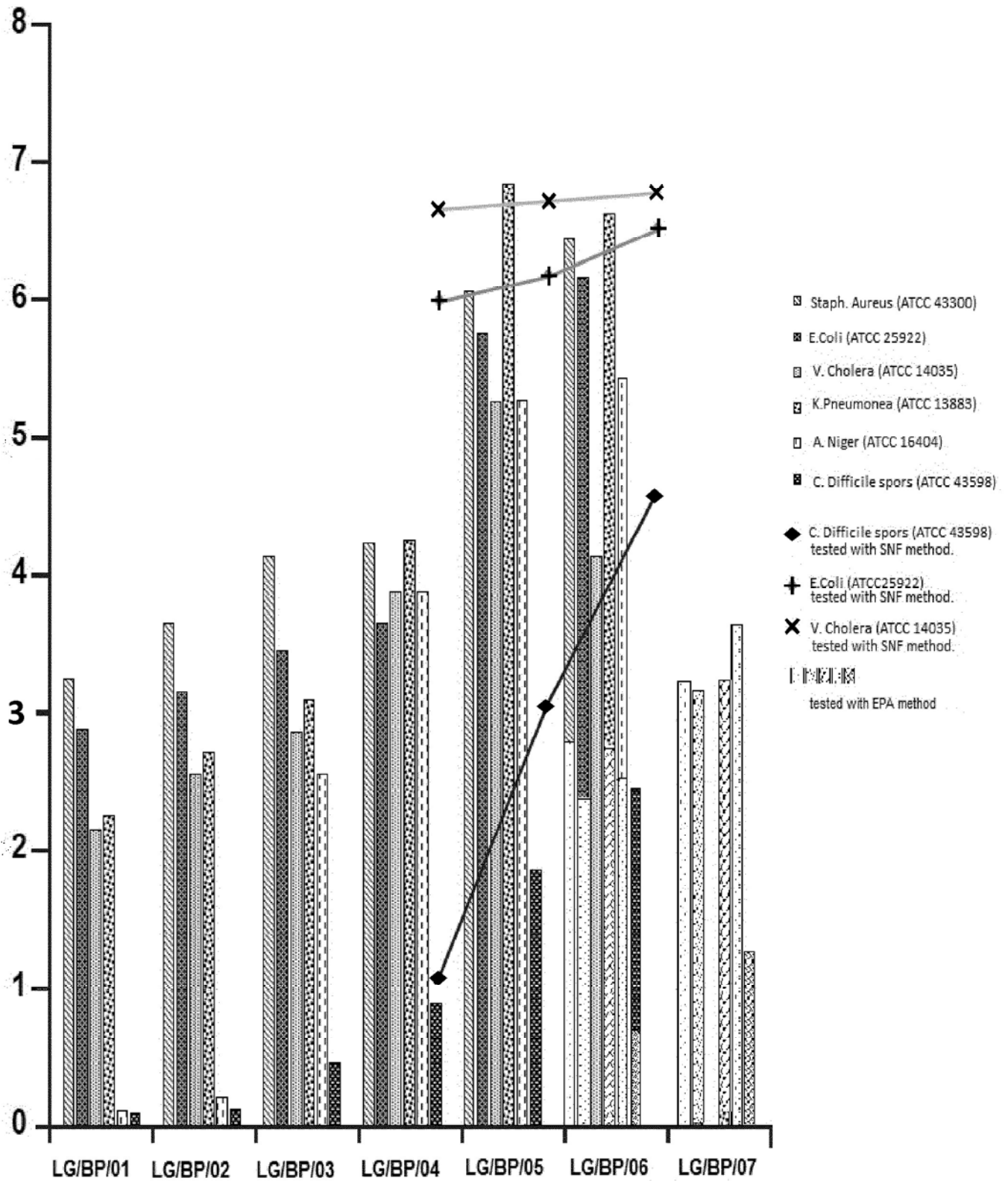


Fig . 38

Exhaustion % owf / gpl	LG/BP 08	LG/BP 09	LG/BP 10	LG/BP 11	LG/BP 12	LG/BP 13	LG/BP 14	LG/BP 15	LG/BP 16	Water Filter
Substrate	cotton	cotton	cotton	cotton	cotton	cotton	blend (c/p)	cotton	blend (c/p)	blend (c/p)
Organosilane	0.25%	0.29%	0.29%	0.29%	0.00%	0.11%	0.11%	0.11%	0.11%	0.11%
	1.25 gpl	1.44 gpl	1.44 gpl	1.44 gpl		0.53 gpl	0.53 gpl	0.53 gpl	0.53 gpl	0.53 gpl
Silver cations	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	0.05 gpl	0.005 gpl	0.005 gpl	0.008 gpl	0.008 gpl	0.008 gpl	0.008 gpl	0.05 gpl	0.05 gpl	0.05 gpl
Chitosan	0.16%	0.16%	0.16%	0.20%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%
	0.80 gpl	0.80 gpl	0.80 gpl	1.00 gpl	0.80 gpl	0.80 gpl	0.80 gpl	0.80 gpl	0.80 gpl	0.80 gpl
propiconazole	0.13%	0.13%	0.13%	0.13%	0.13%	0.13%	0.13%	0.03%	0.03%	0.00%
	0.63 gpl	0.63 gpl	0.63 gpl	0.63 gpl	0.63 gpl	0.63 gpl	0.63 gpl	0.13 gpl	0.13 gpl	
PHMB	0.07%	0.10%	0.10%	0.10%	0.30%	0.30%	0.30%	0.20%	0.07%	0.07%
	0.35 gpl	0.50 gpl	0.50 gpl	0.50 gpl	1.50 gpl	1.50 gpl	1.50 gpl	1.00 gpl	0.35 gpl	0.35 gpl
Padding % owf / gpl	LG/BP 08	LG/BP 09	LG/BP 10	LG/BP 11	LG/BP 12	LG/BP 13	LG/BP 14	LG/BP 15	LG/BP 16	Water Filter
Organosilane	0.17%	0.17%	0.17%	0.17%	0.23%	0.23%	0.23%	0.23%	0.23%	0.23%
	4.3 gpl	4.3 gpl	4.3 gpl	4.3 gpl	5.8 gpl	5.8 gpl	5.8 gpl	5.8 gpl	5.8 gpl	5.8 gpl
Silver cations	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	0.02 gpl		0.004gpl							
Chitosan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Propiconazole	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.25%	0.25%
	1.3 gpl								6.3 gpl	6.3 gpl
PHMB	0.04%	0.04%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	1.0 gpl	1.0 gpl	1.0 gpl							
Total actives owf / leaching	LG/BP 08	LG/BP 09	LG/BP 10	LG/BP 11	LG/BP 12	LG/BP 13	LG/BP 14	LG/BP 15	LG/BP 16	Water Filter
Organosilane	0.95%	0.70%	0.70%	0.59%	0.42%	0.42%	0.64%	0.64%	0.42%	0.42%
	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass
Silver cations	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
	fail	fail	fail	pass	pass	pass	pass	pass	pass	pass
Chitosan	0.00%	0.00%	0.00%	0.16%	0.16%	0.16%	0.00%	0.00%	0.16%	0.16%
	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass
Propiconazole	0.00%	0.00%	0.00%	0.00%	0.10%	0.18%	0.23%	0.23%	0.18%	0.18%
	fail	fail	fail	fail	fail	fail	pass	pass	pass	pass
PHMB	0.00%	0.14%	0.14%	0.11%	0.11%	0.11%	0.10%	0.16%	0.11%	0.11%
	fail	fail	fail	fail	fail	fail	fail	fail	pass	pass
Exhaustion	0.62%	0.68%	0.68%	0.72%	0.59%	0.70%	0.70%	0.51%	0.38%	0.35%
Padding	0.26%	0.21%	0.21%	0.17%	0.23%	0.23%	0.23%	0.23%	0.48%	0.48%
total	0.88%	0.89%	0.89%	0.89%	0.82%	0.93%	0.93%	0.74%	0.86%	0.83%
	LG/BP 08	LG/BP 09	LG/BP 10	LG/BP 11	LG/BP 12	LG/BP 13	LG/BP 14	LG/BP 15	LG/BP 16	Water Filter
Performance	pass	fail	fail	fail	fail	pass	fail	fail	pass	pass

Fig. 39

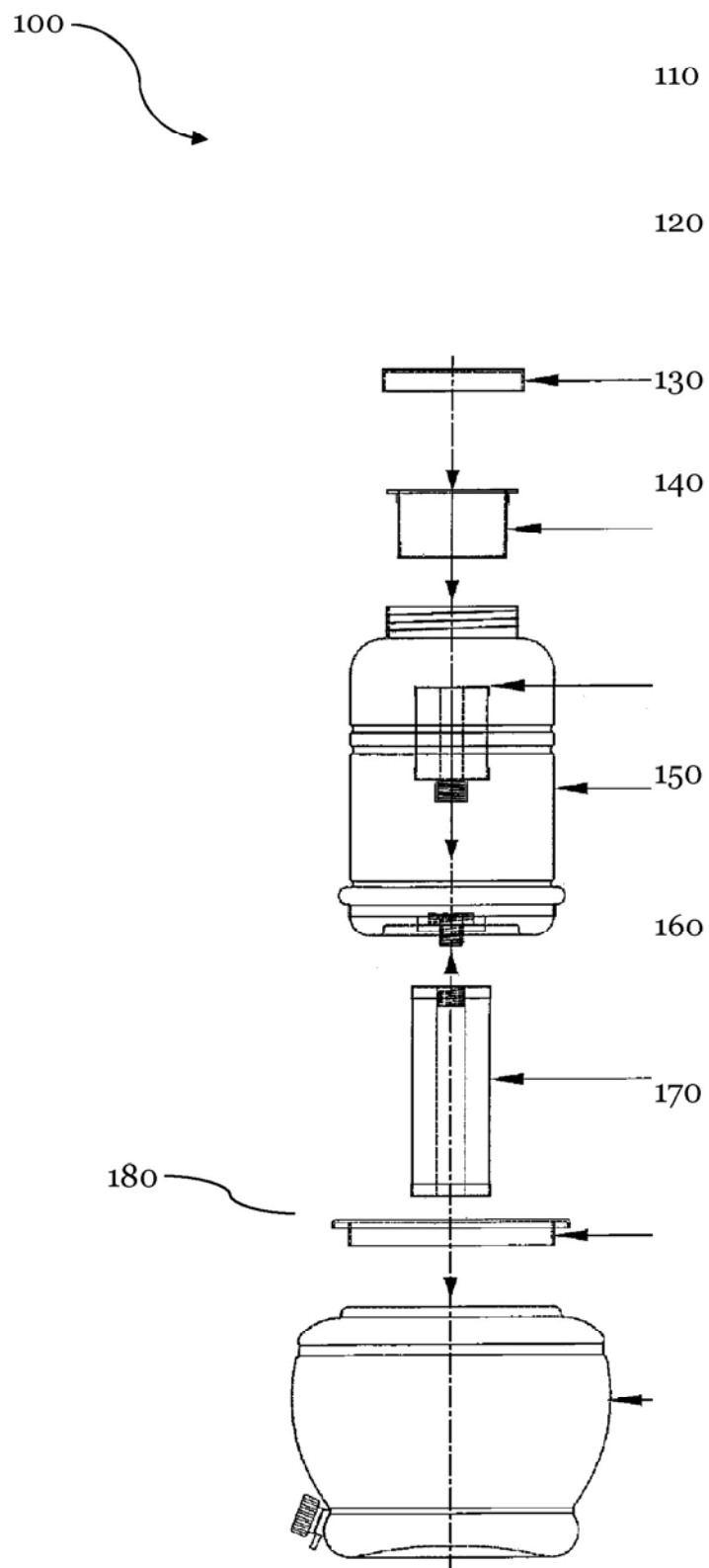


Fig. 40

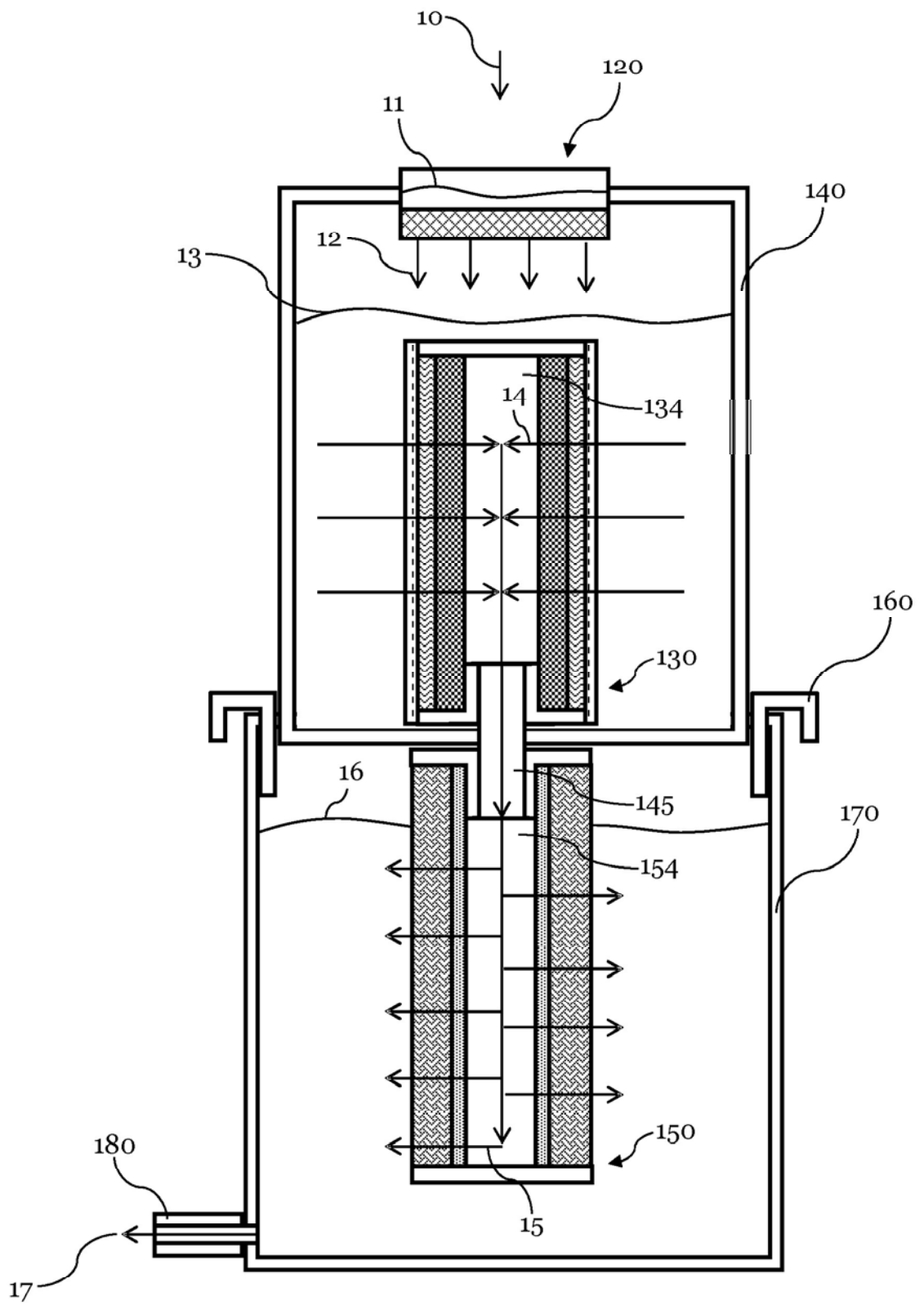


Fig. 41

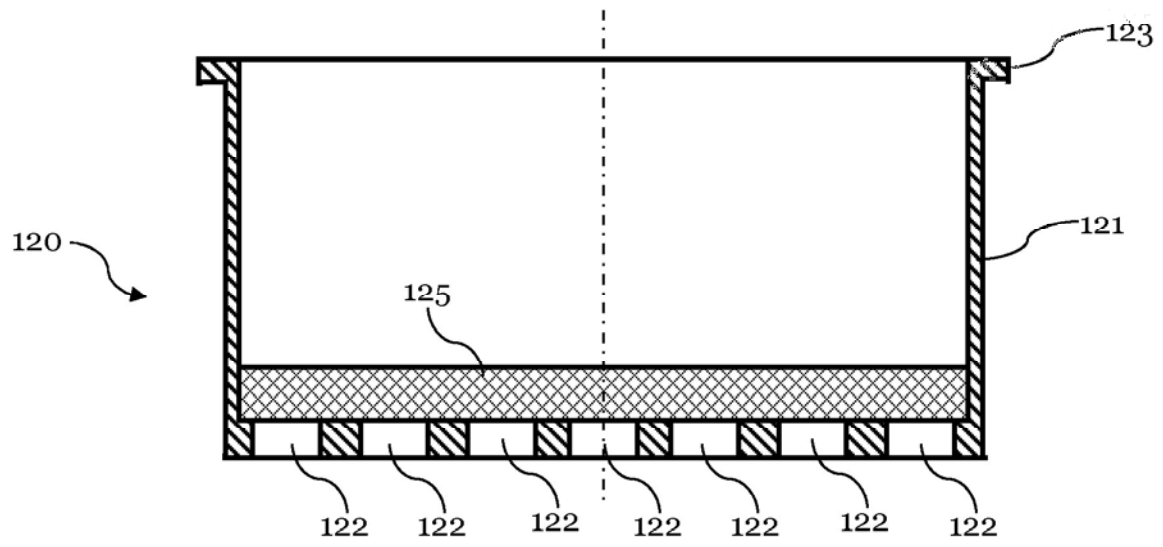


Fig. 42A

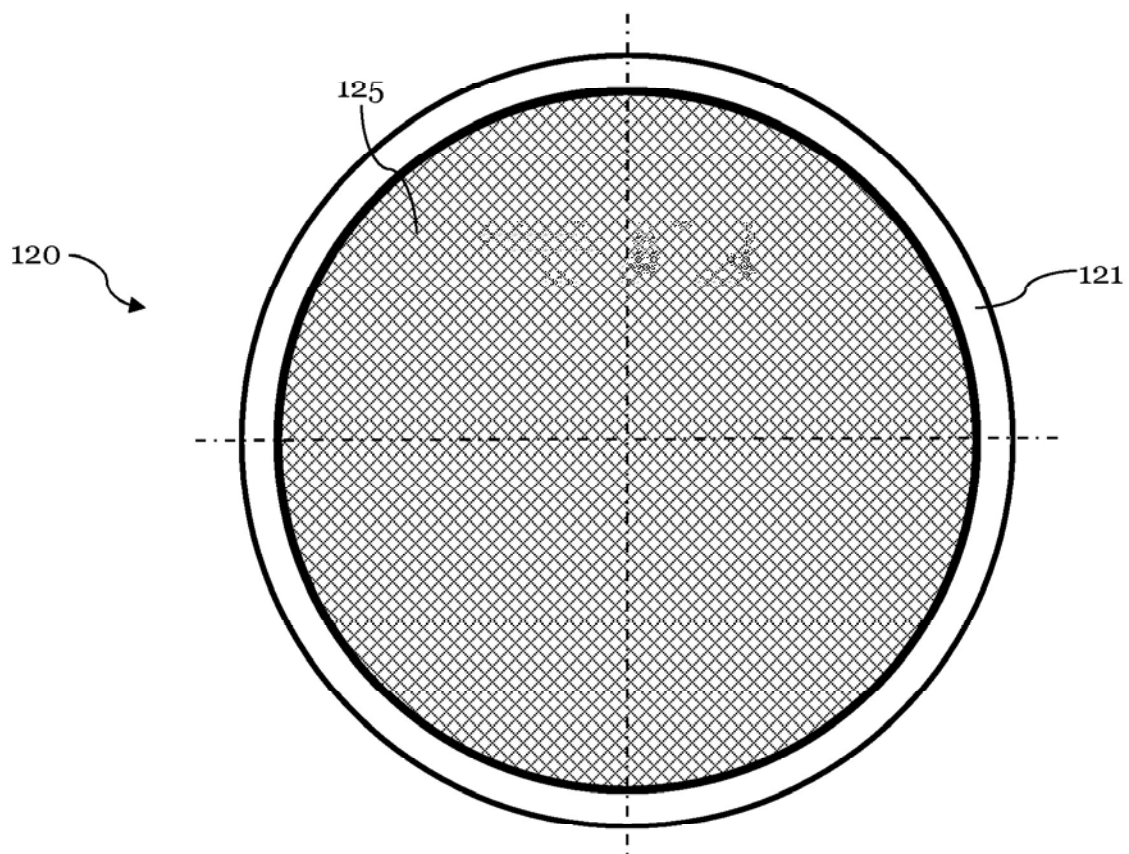


Fig. 42B

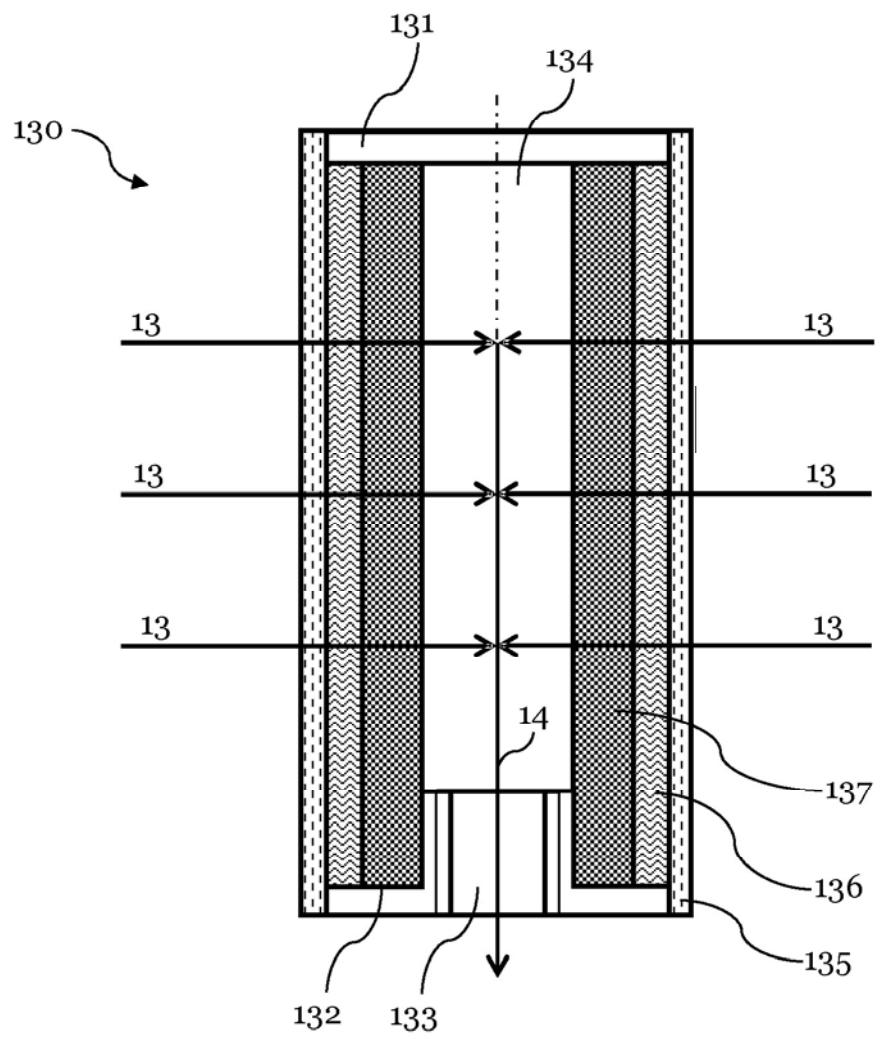


Fig. 43

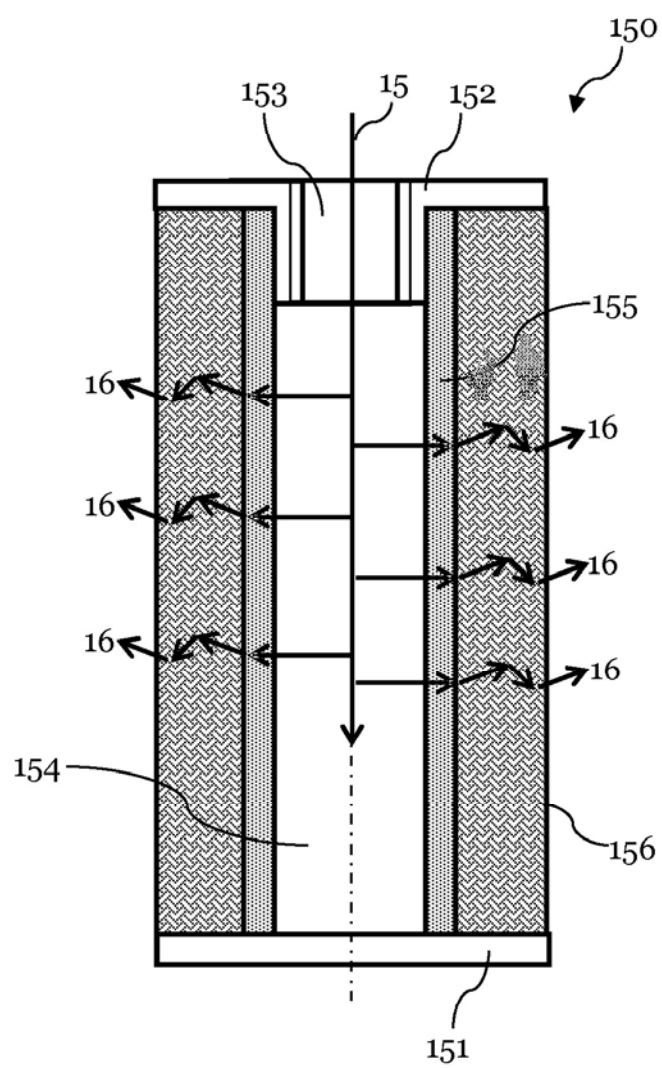


Fig. 44

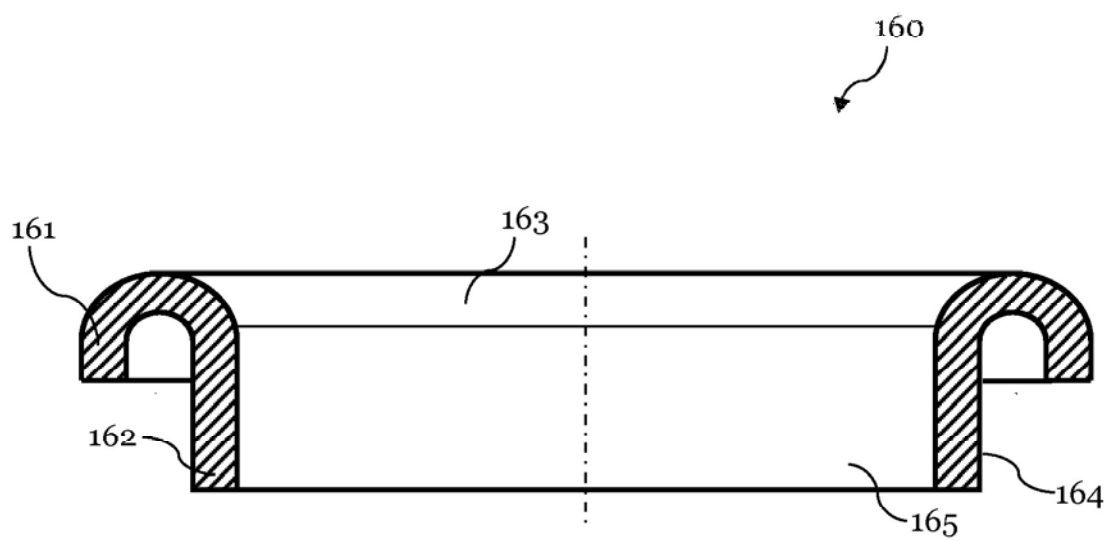


Fig. 45

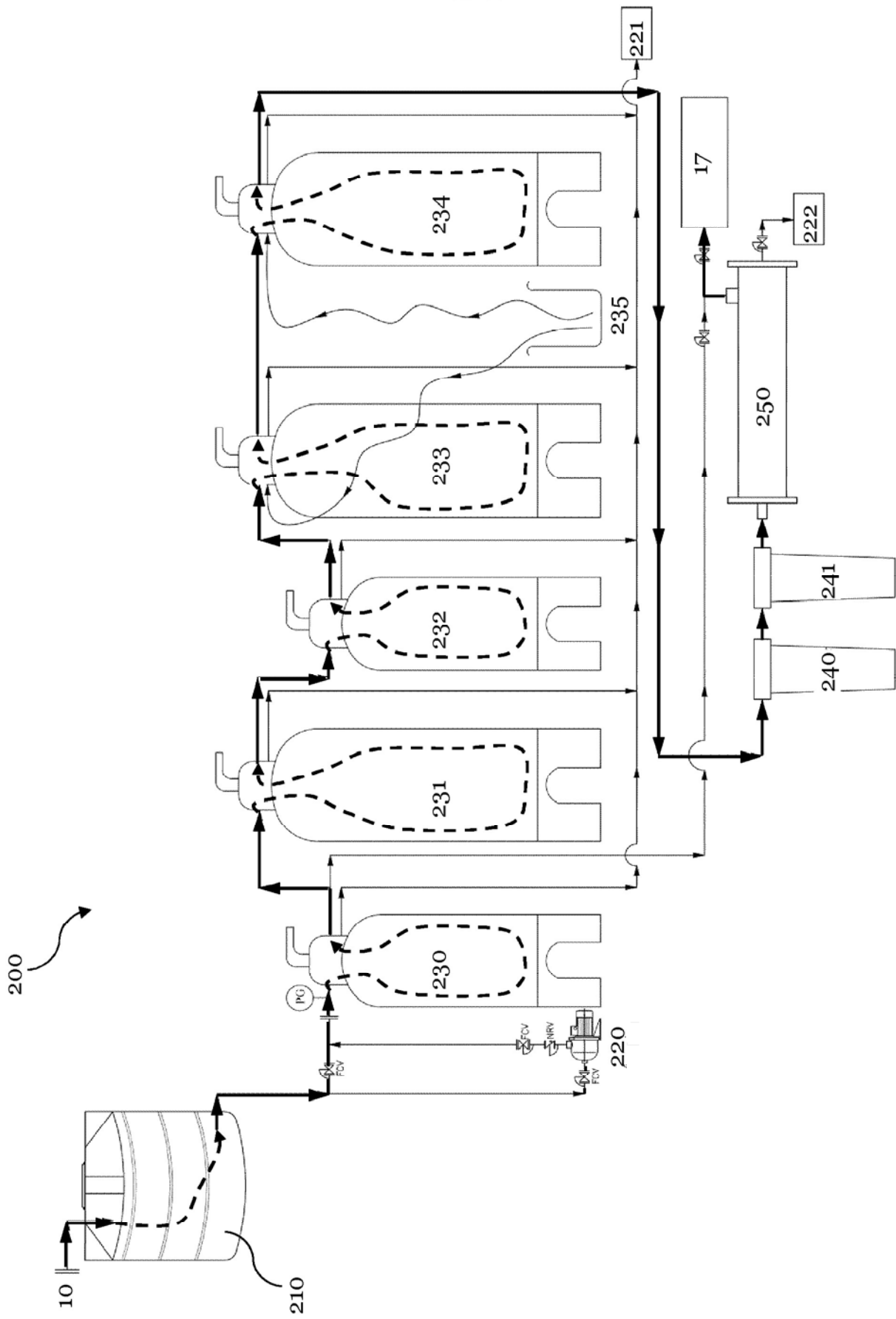


Fig. 46

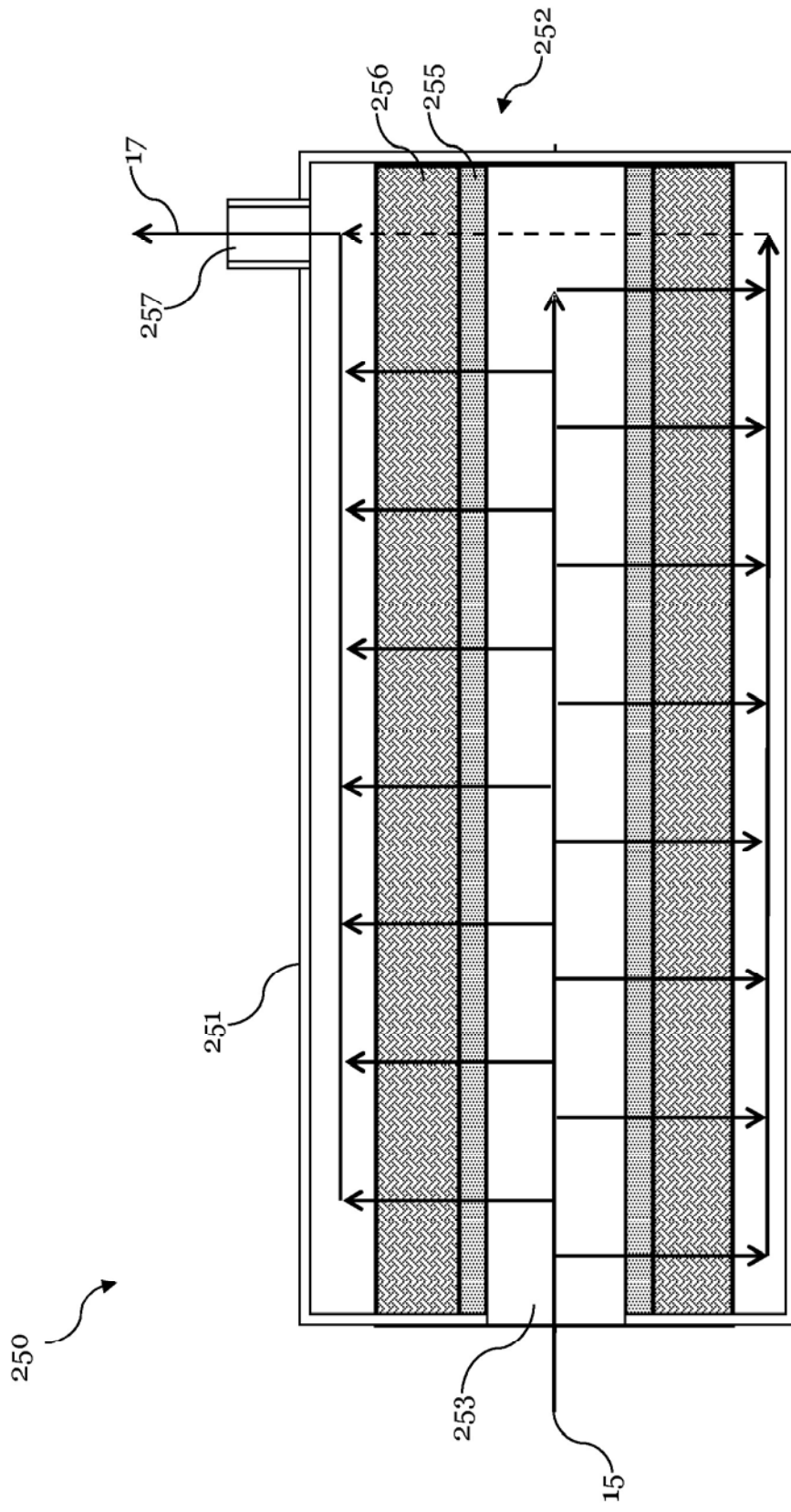


Fig. 47