

## Annex III: Waste flows

Table 1: Annual amounts of PCDD/PCDF containing residues subjected to annex V, part 1 as a function of different potential low POP content limits values

	waste and product	waste generation	Waste exceeding 1ppb		Waste exceeding 5 ppb		Waste exceeding 10 ppb		Waste exceeding 15 ppb	
			[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]
MSWI	Fly ash, filter dust and other FGT residues	1.048	733.9	32.5	104.8	28.5	52.4	30.5	21.0	24.4
	Bottom ash	10,124								
	Boiler ash	155								
	Hydroxide sludge	187	130.9	5.8	18.7	5.1				
HWI	Fly ash and residues from FGT	198								
	Boiler ash	158								
	Bottom ash	669								
Power production coal	ashes	100,819								
Power production biomass	fly ash and other solid residues	533	372.9	16.5	53.3	14.5	37.3	21.7	26.6	31.0

	waste and product	waste generation	Waste exceeding 1ppb		Waste exceeding 5 ppb		Waste exceeding 10 ppb		Waste exceeding 15 ppb	
		[kt/y]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]
Hospital waste incineration (EU10)	bottom ash	16								
	boiler ash	0								
	fly ash	13	8.8	0.4	3.8	1.0				
EDC Production	sludge	2								
MBT (DE, AT)	heavy fraction	1.749								
Sinter plants	Residues from FGT	64	44.8	2.0	6.4	1.7				
electric arc furnaces	Slag	9,600								
	Filter dust	1,113	779.4	34.6	111.3	30.2	55.7	32.4	33.4	
Iron smelting	Slag and dross (furnace residues)	0								
	Used sand	780								
	Residues from FGT	69	48.5	2.2	6.9	1.9				
secondary copper	Furnace lining									
	Filter dust	6	4.1	0.2	4.1	1.1	1.8	1.0	0.6	0.7
	Slag	600								
	KRS-oxid	95	66.2	2.9	9.5	2.6				

	waste and product	waste generation	Waste exceeding 1ppb		Waste exceeding 5 ppb		Waste exceeding 10 ppb		Waste exceeding 15 ppb	
		[kt/y]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]
secondary aluminium	Filter dust	43	39.0	1.7	34.7	9.4	21.7	12.6	4.3	5,0
	Sludge from WWT	5	3.7	0.2						
	Furnace lining	0								
	Salt slag									
secondary zinc	Slag	4,262								
	Absorption and filter material	2	1.6	0.1						
	Waelz oxide	945								
Sewage Sludge	Sewage Sludge	9,900								
Compost	Compost	16,000								
domestic burning	ash (fossil fuels)	2,716								
	ash (wood)	868								
	soot (fossil fuels)	14	10.1	0.4	8.7	2.4	1.4	0.8		
	soot (wood)	15	10.7	0.5	6.1	1.7	1.5	0.9		
total		390,769	2,254.8	100.0	368.4	100.0	171.8	100.0	85.9	100.0

Table 2: Share of total PCDD/PCDF discharge to waste in EU 25 covered by different potential low POP content limits

	waste and product	Amount PCDD/PCDF covered at threshold 0.1ppb		Amount PCDD/PCDF covered at threshold 1ppb		Amount PCDD/PCDF covered at threshold 10ppb		Amount PCDD/PCDF covered at threshold 15ppb	
		[g TEQ/y]	[%]	[g TEQ/y]	[%]	[g TEQ/y]	[%]	[g TEQ/y]	[%]
MSWI	Fly ash, filter dust and other FGT residues	1,525.5	9.61	1,373.27	8.65	1,197.90	7.54	531.59	3.35
	Bottom ash	25.3	0.16	0.00		0.00		0.00	
	Boiler ash	32.0	0.20	0.00		0.00		0.00	
	Hydroxide sludge	193.4	1.22	147.15	0.93	0.00		0.00	
HWI	Fly ash and residues from FGT	57.8	0.36	0.00		0.00		0.00	
	Boiler ash	0.1	0.00	0.00		0.00		0.00	
	Bottom ash	59.5	0.37	0.00		0.00		0.00	
Power production coal	ashes	4.1	0.03	0.00		0.00		0.00	
Power production biomass	fly ash and other solid residues	601.8	3.79	524.44	3.30	488.22	3.07	415.31	2.62
Hospital waste incineration (EU10)	bottom ash	2.1	0.01	0.00		0.00		0.00	
	boiler ash	0.0	0.00	0.00		0.00		0.00	
	fly ash	28.6	0.18	24.63	0.16	0.00		0.00	
EDC Production	sludge	1.0	0.01	0.00		0.00		0.00	
MBT (DE, AT)	heavy fraction	85.7	0.54	0.00		0.00		0.00	
Sinter plants	Residues from FGT	70.0	0.44	60.70	0.38	0.00		0.00	
electric arc furnaces	Slag	0.0	0.00	0.00		0.00		0.00	
	Filter dust	1,213.6	7.64	1,024.29	6.45	835.02	5.26	584.52	
Iron smelting	Slag and dross (furnace residues)	0.0	0.00	0.00		0.00		0.00	
	Used sand	0.0	0.00	0.00		0.00		0.00	

	waste and product	Amount PCDD/PCDF covered at threshold 0.1ppb		Amount PCDD/PCDF covered at threshold 1ppb		Amount PCDD/PCDF covered at threshold 10ppb		Amount PCDD/PCDF covered at threshold 15ppb	
		[g TEQ/y]	[%]	[g TEQ/y]	[%]	[g TEQ/y]	[%]	[g TEQ/y]	[%]
	Residues from FGT	0.0	0.00	103.75	0.65	0.00		0.00	
secondary copper	Furnace lining	0.0	0.00	0.00		0.00		0.00	
	Filter dust	0.0	0.00	34.61	0.22	29.29	0.18	11.24	0.07
	Slag	0.0	0.00	0.00		0.00		0.00	
	KRS-oxid	0.0	0.00	80.41	0.51	0.00		0.00	
secondary aluminium	Filter dust	0.0	0.00	429.46	2.70	475.01	2.99	105.85	0.67
	Sludge from WWT	0.0	0.00	7.51	0.05	0.00		0.00	
	Furnace lining	0.0	0.00	0.00		0.00		0.00	
	Salt slag	0.0	0.00	0.00		0.00		0.00	
secondary zinc	Slag	0.0	0.00	0.00		0.00		0.00	
	Absorption and filter material	1.6	0.01	1.25	0.01	0.00		0.00	
	Waelz oxide	94.5	0.60	0.00		0.00		0.00	
Sewage Sludge	Sewage Sludge	297.0	1.87	0.00		0.00		0.00	
Compost	Compost	160.0	1.01	0.00		0.00		0.00	
domestic burning	ash (fossil fuels)	152.1	0.96	0.00		0.00		0.00	
	ash (wood)	95.5	0.60	0.00		0.00		0.00	
	soot (fossil fuels)	88.8	0.56	86.42	0.54	14.44	0.09	0.00	
	soot (wood)	61.2	0.39	58.81	0.37	18.71	0.12	0.00	
total industrial and domestic		4,851.2	30.55	3,956.70	24.9	3,058.59	19.3	1,648.50	10.4
MSW		11,029.5	69.45	11,924.06	75.1	12,822.17	80.7	14,232.26	89.6
total		15,880.8	100.00	15,880.76	100.0	15,880.76	100.0	15,880.76	100.0

Table 3: Annual amounts of PCB containing residues subjected to annex V, part 1 as a function of different potential low POP content limits values

	PCB containing wastes and products	amount	Waste amounts exceeding 1 ppm		Waste amounts exceeding 5 ppm		Waste amounts exceeding 10 ppm		Waste amounts exceeding 20ppm		Waste amounts exceeding 30 ppm		Waste amounts exceeding 50 ppm	
			[kt/y]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]	[%]	[kt/y]
EEEs	large equipment	14.5	14.5	0.2	14.5	0.5	14.5	1.8	14.5	3.1	14.5	5.1	14.5	14.4
	household equipment	0.6	0.6	0.0	0.6	0.0	0.5	0.1	0.4	0.1	0.2	0.1		
C&D waste	D&C waste	205,124												
*	170106													
*	170204													
*	170503													
*	170902													
*	170903													
Waste oils	higher contaminated	29	29	0.4	25	0.8	22	2.7	12	2.5	7	2.5		
	lower contaminated	5,793	4,345	64.7	1,448	49.9	145	18.1						
Shredder	white goods and vehicles	3,000	2,100	31.3	1,200	41.4	450	56.2	300	63.5	150	52.7	30	29.8
	waste cable	225	225	3.4	214	7.4	169	21.1	146	30.9	113	39.5	56	55.8
	Compost	14,487												
	Sewage Sludge	8,051												
HWI	bottom ash	669												
	boiler ash	158												
	fly ash	198												
Total			6,714	100.0	2,902	100.0	800	100.0	473	100.0	284	100.0	101	100.0

Table 4: Share of total PCB discharge to waste in EU 25 covered by different potential low POP content limits

	PCB containing wastes and products	amount	PCB to waste & products	share of total PCB to waste and products	Amount PCB covered at threshold 1 ppm		Amount PCB covered at threshold 5 ppm		Amount PCB covered at threshold 10 ppm		Amount PCB covered at threshold 20 ppm		Amount PCB covered at threshold 30 ppm		Amount PCB covered at threshold 50 ppm	
					[kt/y]	[t/y]	[%]	[t/y]	[%]	[t/y]	[%]	[t/y]	[%]	[t/y]	[%]	[t/y]
EEEs	large equipment	14.5	4,687	82.6	4,687	82.6	4,687	82.6	4,687	82.6	4,687	82.6	4,687	82.6	4,687	82.6
	household equipment	0.61	13.7	0.2	12.3	0.2	12.3	0.2	10.9	0.2	8.2	0,1	5.5	0.1		
D&C waste		205,124	849	15.0												
	170106															
	170204															
	170503															
	170902															
	170903															
MSW		228,969	91.6	1.6												
Waste oils	higher contaminated	29	0.3	0.0	0.3		0.2		0.2		0.1		0.1			
	lower contaminated	5,793	9.6	0.2	7.2	0.1	2.4		0.2		0.0		0.0			
Shredder	white goods and vehicles	3,000	9.7	0.2	7.3	0.1	3.9	0.01	1.5		0.5		0.5		0.1	
	waste cable	225	6.8	0.1	6.8	0.1	6.4	0.1	5.1	0.1	3.4	0,1	3.4	0.1	1.7	
Compost		14,487	4.3	0.1												
Sewage Sludge		8,051	4.8	0.1												
HWI	bottom ash	669	0.0													
	boiler ash	158	0.0													
	fly ash	198	0.0													
Total			5,677	100.0	4,721	83.2	4,713	83.0	4,705	82.9	4,699	82,8	4,697	82.7	4,689	82.6