Appendix A Life Cycle Inventory Data

Table A.1: Average data for the DW 9ps model life cycle phases

PRODUCTION		
Materials type	**Material**	**DW 9ps (g)**
Ferrous metals	galvanized steel	504
	Iron	2.136
	Prepainted Steel	1.941
	stainless steel	6.866
	Steel	1.828
	Steel strip	6.298
	Steel+PA	1.208
Ferrous metals		***20.781***
Non ferrous metals	Al	172
	Cu	398
	Zn	7
Non ferrous metals		***77***
Packaging	Cardboard	123
	EPS	648
	paper	5
	PE - foil	132
	Wood	47
Packaging		***955***
Plastics	ABS	708
	EPDM - rubber	433
	EPS	88
	PA	172
	PBT polybutylene terephthalate	58
	PE	178
	Plastics, others	121
	PMMA	10
	POM	191
	PP	5.026
	PS	367
	PU Foam - Insulation	3
	PVC (excl. wire insul.)	210
Plastics		***7.564***
Various	adhesive	15
	Bitumen	5.043
	Concrete	2.153
	Cotton+Resins noise absorbers	565
	Electronic, boards, switches, lamp, etc	694
	others	36
	paper	130
	Resins	200
	Thermostat	17
	Wiring	503
	Wood	1.928
Various		***11.284***
TOTAL		**41.160**

TRANSPORT: average km = 706

ASSEMBLING	
Energy (kWh)	
Electricity	11,60
Heat	10,02
Mechanical	0,0005
Water (m3)	0,08
Other materials (g)	
polishing solution	106
protective layer-cataphoresys	143
white painting powder	49
Volume of packaged final product (m^3)	0,303

USE		
Product Life	**12,50**	years
Electricity		
On-mode: Consumption per hour, cycle, setting, etc.	**0,8825**	kWh/cycle
On-mode: n. of hours, cycles, settings, etc. / year	220	
Standby-mode: Consumption per hour	**0,0013**	kWh
Standby-mode: n. of hours / year	200	
Off-mode: Consumption per hour	**0,00010**	kWh
Off-mode: n. of hours / year	8000	
TOTAL over Product Life		
Heat		
Avg. Heat Power Output		
No. of hours / year		
Type and efficiency		
TOTAL over Product Life		
Consumables (excl. spare parts)		
Water	**3,69**	m3/year
Detergent dishwasher.	**6,85**	kg/ year
Rinsing agent dishwasher.	**1,16**	kg/ year
Salt dishwasher.	**8,33**	kg/ year
Maintenance, Repairs, Service		
n. of km over Product-Life		
Spare parts		
or Spare parts (object x)		
Spare parts (object y)		

END OF LIFE (%)	
recycling	80,42
energy recovery	16,80
land filling	2,78
Total	100

Table A.2: Average data for the DW 12ps model life cycle phases

PRODUCTION		
Materials type	**Material**	**DW12ps (g)**
Ferrous metals	galvanized steel	403,2
	Iron	2302,6
	Prepainted Steel	1269,2
	Stainless Steel	8690,92
	Steel	6535,616
	Steel strip	7097,4
	Steel+PA	966,6
Ferrous metals		***27265,536***
Non ferrous metals	Al	268,624
	Brass (Cu+Zn alloy)	23,4
	Cr	71,3
	Cu	656,14
	Zn	4,2
Non ferrous metals		***1023,664***
Packaging	Cardboard	632,2
	EPS	724,4
	Paper	3
	PE - foil	171,72
	Wood	1011
Packaging		*2542,32*
Plastics	ABS	751,26
	EPDM - rubber	523,96
	EPS	39,7
	PA	398,6
	PBT - polybutylene terephthalate	35
	PE	187,32
	Plastics, other	267,94
	PMMA	5,8
	POM	229,88
	PP	4948,42
	PP Volute	32,2
	PS	511,54
	PU Foam - Insulation	2,4
	PVC	184,2
	PVC (excl. wire insul.)	219
Plastics		***8337,22***
Various	adhesive	10
	Bitumen	6089
	Cement - Gravel	1262,8
	Cotton	452,18
	Cotton+Resins noise absorbers	489
	Electronic, boards, switches, lamp etc	447,5
	Others	59,36
	Paper	205,52
	Resins	120
	Thermostat	10
	Wiring	350
	Wood	2034,4
Various		***11529,76***
TOTAL		**50698,5**

TRANSPORT: average km = 652

ASSEMBLING	
Energy (kWh)	
Electricity	17,31
Heat	9,20
Mechanical	
Water (m3)	0,09
Other materials (g)	
polishing solution	106
protective layer-cataphoresys	156
white painting powder	53
Volume of packaged final product (m3)	0,40

USE		
Product Life	12,5	year
Electricity		
On-mode: Consumption per hour, cycle, setting, etc.	1,058	kWh/cycle
On-mode: n. of hours, cycles, settings, etc. / year	220	
Standby-mode: Consumption per hour	0,00133	kWh
Standby-mode: n. of hours / year	200	
Off-mode: Consumption per hour	0,00016	kWh
Off-mode: n. of hours / year	8000	
TOTAL over Product Life		
Heat		
Avg. Heat Power Output	1,97500	kW
No. of hours / year	0,50	hrs/cycle
Type and efficiency		
TOTAL over Product Life		

USE		
Consumables (excl. spare parts)		
Water	3,85	m3/year
Detergent dishwasher	7,25	kg/year
Rinse agent dishwasher	1,02	kg/year
Salt dishwasher.	7,835	kg/year
Maintenance, Repairs, Service		
n. of km over Product-Life	160,00	km/product life
Spare parts		
or Spare parts (object x)		
Spare parts (object y)		

END OF LIFE (%)	
recycling	82,66
energy recovery	15,86
land filling	1,47
Total	100

Table A.3: Average data for the WM 5kg model life cycle phases

PRODUCTION		
Materials type	**Material**	**WM5kg (g)**
Ferrous metals	cast iron	6.214
	Iron	4.978
	Stainless Steel	1.939
	Stainless steel sheet	564
	Steel	12.521
	Steel strip	6.145
Ferrous metals		***32.361***
Non ferrous metals	Al	1.503
	Aluminium sheet	1
	Aluminium casting (recycled 80%)	729
	Brass	14
	Copper sheet	0
	Copper wire	348
	Cr	1.761
	Cu	869
	Ni	1
	zinc die-casting	85
Non ferrous metals		***5.311***
Packaging	Cardboard	107
	EPS	678
	Paper (booklets etc)	10
	PE - foil	175
	Plastics, others	56
	PP	8
	Wood	879
Packaging		***1.912***
Plastics	ABS	1.145
	EPDM - rubber	1.675
	PA	6
	PA 66-GF(Glass Fibre Reinforced)	0
	PA66	88
	PC	188
	PC-G (Glass Reinforced)	2
	PE	10
	Plastics, others	1.037
	POM	41
	PP	5.402
	PP-K40	2.533
	PPO (=PPE)	2
	PPS-GF	76
	PVC	221
	PBT	8
Plastics		***12.434***
Various	Bitumen	38
	Concrete	18.180
	Electronic, boards, switches, lamp, etc	165
	Filter	28
	Glass	1.773
	Gravel	25
	Oil - Feet	28
	Others	204
	Paper (booklets etc)	106
	Wiring	88
	Wood	1.573
Various		***22.206***
TOTAL		**74.225**

TRANSPORT: average km = 648

ASSEMBLING	
Energy (kWh)	
Electricity	28,98
Heat	14,79
Water (m3)	0,59
Other materials (g)	
Lubricating oil : ave factory	45
Phosphating : ave factory	47
Volume of packaged final product (m3)	0,36

USE		
Product Life	15,00	years
Electricity		
On-mode: Consumption per cycle	0,93	kWh/cycle
On-mode: n. of hours, /cycle	225,00	cycle/year
Standby-mode: Consumption per hour	0,00320	kW
Standby-mode: n. of hours / year	200	
Off-mode: Consumption per hour	0,00065	kW
Off-mode: n. of hours / year	8.000	
TOTAL over Product Life		
Heat		
Avg. Heat Power Output	1,95	kW
No. of hours / year	0,40	hrs./cycle
Type and efficiency		
TOTAL over Product Life		
Consumables (excl. spare parts)		
Water	10,01	m3/year
Detergent (compact)	24,93	kg/ year
Softening washing machine	20,00	kg/ year
Bleach	1	l/year
Maintenance, Repairs, Service		
n. of km over Product-Life	160,00	km/product life
Spare parts		
or Spare parts (object x)		
Spare parts (object y)		

END OF LIFE (%)	
Dismantling	26,70
recycling	70,00
energy recovery	3,30
Total	100

Appendix B EUP-Ecoreport Data

Table B.1: DW 9ps INPUT - EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005 — Document subject to a legal notice (see below)

ECO-DESIGN OF ENERGY-USING PRODUCTS — EuP EcoReport: INPUTS Assessment of Environmental Impact

Nr	Product name	Date	Author
	DW 9 ps MEDIA	**21/05/2007**	

Pos nr	MATERIALS Extraction & Production Description of component	Weight in g	Category Click &select	Material or Process select Category first !
1	ABS (707,83 g)	828,1	1-BlkPlastics	**10-ABS**
2	adhesive (14,58 g)			
3	Al (171,66 g)	200,8	4-Non-ferro	**26-Al sheet/extrusion**
4	Bitumen (5043,33 g)			
5	Concrete (2153 g)	2518,7	7-Misc.	**58-Concrete**
6	Cotton+Resins noise absorbers (565,41 g)			
7	Cu (397,66 g)	465,2	4-Non-ferro	**29-Cu wire**
8	Electronic, boards, switches, lamp etc (694,16 g)	812,1	6-Electronics	**98-controller board**
9	EPDM - rubber (432,66 g)	506,2	1-BlkPlastics	**1-LDPE**
10	EPS (87,5 g)	102,4	1-BlkPlastics	**6-EPS**
11	galvanized steel (504 g)	589,6	3-Ferro	**21-St sheet galv.**
12	Iron (2136,33 g)	2499,2	3-Ferro	**23-Cast iron**
13	others (35,66 g)			
14	PA (171,66 g)	200,8	2-TecPlastics	**11-PA 6**
15	paper (130 g)	152,1	7-Misc.	**57-Office paper**
16	PBT polybutylene terephthalate (58,33 g)			
17	PE (178,33 g)	208,6	1-BlkPlastics	**2-HDPE**
18	Plastics, others (120,66 g)			
19	PMMA (9,66 g)	11,3	2-TecPlastics	**13-PMMA**
20	POM (191,33 g)	223,8	1-BlkPlastics	**2-HDPE**
21	PP (5026,46 g)	5880,3	1-BlkPlastics	**4-PP**
22	Prepainted Steel (1940,66 g)	2270,3	3-Ferro	**25-Stainless 18/8 coil**
23	PS (367 g)	429,3	1-BlkPlastics	**5-PS**
24	PU Foam - Insulation (3 g)	3,5	2-TecPlastics	**16-Flex PUR**
25	PVC (excl. wire insul.) (209,66 g)	245,3	1-BlkPlastics	**8-PVC**
26	Resins (200 g)	234,0	2-TecPlastics	**14-Epoxy**
27	stainless steel (6866 g)	8032,3	3-Ferro	**25-Stainless 18/8 coil**
28	Steel (1828,16 g)	2138,7	3-Ferro	**25-Stainless 18/8 coil**
29	Steel strip (6297,66 g)	7367,5	3-Ferro	**21-St sheet galv.**
30	Steel+PA (1208,25 g)	1413,5	3-Ferro	**25-Stainless 18/8 coil**
31	Thermostat (16,66 g)	19,5	6-Electronics	**98-controller board**
32	Wiring (503,33 g)	588,8	4-Non-ferro	**29-Cu wire**
33	Wood (1927,66 g)	2255,1	7-Misc.	**56-Cardboard**
34	Zn (6,66 g)	7,8	4-Non-ferro	**31-CuZn38 cast**
	TOTAL	**40205**		

Pos nr	MANUFACTURING Description	Weight in g	Percentage Adjust	Category index (fixed)
201	**OEM Plastics Manufacturing** (fixed)	8874		20
202	**Foundries Fe/Cu/Zn** (fixed)	2507		34
203	**Foundries Al/Mg** (fixed)	0		35
204	**Sheetmetal Manufacturing** (fixed)	22013		36
205	**PWB Manufacturing** (fixed)	0		53
206	**Other materials** (Manufacturing already included)	6812		
207	**Sheetmetal Scrap** (Please adjust percentage only)	1101	**5%**	37

Pos nr	DISTRIBUTION (incl. Final Assembly) Description		Answer	Category index (fixed)
208	**Is it an ICT or Consumer Electronics product <15 kg ?**		NO	59
209	**Is it an installed appliance (e.g. boiler)?**		NO	60
				62
210	**Volume of packaged final product in m^3**	**in m3**	0,302523432	63

Pos	USE PHASE		unit	Subtotals

nr	Description			
211	**Product Life in years**	**12,5**	years	
	Electricity			
212	**On-mode: Consumption per hour, cycle, setting, etc.**	0,8825	kWh	194,15
213	**On-mode: No. Of hours, cycles, settings, etc. / year**	**220,00**	#	
214	**Standby-mode: Consumption per hour**	0,00125	kWh	0,25
215	**Standby-mode: No. Of hours / year**	**200,00**	#	
216	**Off-mode: Consumption per hour**	9,6333E-05	kWh	0,770666667
217	**Off-mode: No. Of hours / year**	**8000,00**	#	
	TOTAL over Product Life	**2,44**	**MWh (=000 kWh)**	65
	Heat			
218	**Avg. Heat Power Output**	0	kW	
219	**No. Of hours / year**	0	hrs.	
220	**Type and efficiency (Click & select)**			**85-not applicable**
	TOTAL over Product Life	**0,00**	**GJ**	
	Consumables (excl, spare parts)			**material**
221	**Water**	**3,69**	m^3/year	**83-Water per m3**
222	**Auxilliary material 1 (Click & select)**	**6,85**	kg/ year	**80-Detergent dishw.**
223	**Auxilliary material 2 (Click & select)**	**1,16**	kg/ year	**81-Rinsing agent dish**
224	**Auxilliary material 3 (Click & select)**	**8,33**	kg/ year	**82-Regen. Salt dishw**
	Maintenance, Repairs, Service			
225	**No. of km over Product-Life**	0	km / Product Life	86
226	**Spare parts** (fixed, 1% of product materials & manuf.)	402	g	

Pos nr	DISPOSAL & RECYCLING Description		unit	Subtotals
	Substances released during Product Life and Landfill			
227	**Refrigerant in the product (Click & select)**	0	g	**1-none**
228	**Percentage of fugitive & dumped refrigerant**	0%		
229	**Mercury (Hg) in the product**	0	g Hg	
230	**Percentage of fugitive & dumped mercury**	0%		
	Disposal: Environmental Costs perkg final product			
231	**Landfill (fraction products not recovered) in g en %**	1118	3%	88-fixed
232	**Incineration (plastics & PWB not re-used/recycled)**	1491	g	91-fixed
233	**Plastics: Re-use & Recycling ("cost"-side)**	7136	g	92-fixed
	Re-use, Recycling Benefit	**in g**	**% of plastics fraction**	
234	**Plastics: Re-use, Closed Loop Recycling (please edit%)**	0		4
235	**Plastics: Materials Recycling (please edit% only)**	7136	80%	4
236	**Plastics: Thermal Recycling (please edit% only)**	1491	17%	72
237	**Electronics: PWB Easy to Disassemble ? (Click&select)**	0	**YES**	98
238	**Metals & TV Glass & Misc.** (95% Recycling)	29765		fixed

Table B.2: DW 9ps OUTPUT – EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005

Document subject to a legal notice (see below))

EuP EcoReport: RESULTS

ECO-DESIGN OF ENERGY-USING PRODUCTS

Assessment of Environmental Impact

Table . Life Cycle Impact (per unit) of DW 9 ps MEDIA

Nr	**Life cycle Impact per product:**	Date	Author
0	DW 9 ps	21/05/07	

	Life Cycle phases -->		PRODUCTION			DISTRI-	USE	END-OF-LIFE*			TOTAL
	Resources Use and Emissions		Material	Manuf.	**Total**	**BUTION**		Disposal	Recycl.	**Total**	
	Materials	**unit**									
1	Bulk Plastics	g			**8424**			1415	7009	**8424**	**0**
2	TecPlastics	g			**450**			76	374	**450**	**0**
3	Ferro	g			**24311**			676	23635	**24311**	**0**
4	Non-ferro	g			**1263**			35	1228	**1263**	**0**
5	Coating	g			**0**			0	0	**0**	**0**
6	Electronics	g			**832**			832	0	**832**	**0**
7	Misc.	g			**4926**			137	4789	**4926**	**0**
	Total weight	g			**40205**			3170	37035	**40205**	**0**
									see note!		
	Other Resources & Waste							debet	credit		
8	Total Energy (GER)	MJ	2735	714	**3450**	**462**	**28839**	223	447	**-224**	**32526**
9	of which, electricity (in primary MJ)	MJ	713	427	**1141**	**1**	**25628**	0	26	**-26**	**26743**
10	Water (process)	ltr	1568	6	**1574**	**0**	**47916**	0	17	**-17**	**49473**
11	Water (cooling)	ltr	866	199	**1065**	**0**	**68320**	0	143	**-143**	**69243**
12	Waste, non-haz./ landfill	g	52215	2395	**54610**	**249**	**33943**	1393	100	**1293**	**90095**
13	Waste, hazardous/ incinerated	g	592	0	**592**	**5**	**670**	1491	16	**1475**	**2742**
	Emissions (Air)										
14	Greenhouse Gases in GWP100	kg CO2 eq.	186	40	**226**	**29**	**1259**	16	14	**2**	**1516**
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	1621	172	**1792**	**87**	**7440**	40	29	**12**	**9331**
17	Volatile Organic Compounds (VOC)	g	9	0	**9**	**6**	**11**	1	0	**1**	**28**
18	Persistent Organic Pollutants (POP)	ng i-Teq	339	12	**351**	**1**	**192**	10	0	**10**	**554**
19	Heavy Metals	mg Ni eq.	2209	28	**2237**	**13**	**517**	60	0	**60**	**2826**
	PAHs	mg Ni eq.	139	0	**139**	**16**	**58**	0	1	**-1**	**211**
20	Particulate Matter (PM, dust)	g	205	26	**232**	**1035**	**161**	442	3	**439**	**1867**
	Emissions (Water)										
21	Heavy Metals	mg Hg/20	1623	0	**1623**	**0**	**184**	15	0	**15**	**1822**
22	Eutrophication	g PO4	42	0	**43**	**0**	**4593**	1	1	**0**	**4636**
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

***=Note: Recycling credits only relate to recycling of plastics and electronics (excl. LCD/CRT). Recycling credits for metals and other fractions are already taken into account in the production phase.**

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Table B.3: DW 12 ps INPUT – EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005 — Document subject to a legal notice (see below)

ECO-DESIGN OF ENERGY-USING PRODUCTS — EuP EcoReport: INPUTS

Assessment of Environmental Impact

Nr	Product name	Date	Author
	DW 12ps MEDIA	**21/05/2007**	

Pos nr	MATERIALS Extraction & Production Description of component	Weight in g	Category Click &select	Material or Process select Category first !
1	galvanized steel (403,2 g)	477,3	3-Ferro	**21-St sheet galv.**
2	Iron (2302,6 g)	2725,6	3-Ferro	**23-Cast iron**
3	Prepainted Steel (1269,2 g)	1502,4	3-Ferro	**25-Stainless 18/8 coil**
4	Stainless Steel (8690,92 g)	10287,5	3-Ferro	**25-Stainless 18/8 coil**
5	Steel (6535,61 g)	7736,3	3-Ferro	**25-Stainless 18/8 coil**
6	Steel strip (7097,4 g)	8401,3	3-Ferro	**21-St sheet galv.**
7	Steel+PA (966,6 g)	1144,2	3-Ferro	**25-Stainless 18/8 coil**
8	Al (268,62 g)	318,0	4-Non-ferro	**26-Al sheet/extrusion**
9	Brass (Cu+Zn alloy) (23,4 g)	27,7	4-Non-ferro	**31-CuZn38 cast**
10	Cr (71,3 g)		4-Non-ferro	
11	Cu (656,14 g)	776,7	4-Non-ferro	**29-Cu wire**
12	Zn (4,2 g)	5,0	4-Non-ferro	**31-CuZn38 cast**
13	ABS (751,26 g)	889,3	1-BlkPlastics	**10-ABS**
14	EPDM - rubber (523,96 g)	620,2	1-BlkPlastics	**1-LDPE**
15	EPS (39,7 g)	47,0	1-BlkPlastics	**6-EPS**
16	PA (398,6 g)	471,8	2-TecPlastics	**11-PA 6**
17	PBT - polybutylene terephthalate (35 g)			
18	PE (187,32 g)	221,7	1-BlkPlastics	**2-HDPE**
19	Plastics, other (267,94 g)			
20	PMMA (5,8 g)	6,9	2-TecPlastics	**13-PMMA**
21	POM (229,88 g)	272,1	1-BlkPlastics	**2-HDPE**
22	PP (4948,42 g)	5857,5	1-BlkPlastics	**4-PP**
23	PP Volute (32,2 g)	38,1	1-BlkPlastics	**4-PP**
24	PS (511,54 g)	605,5	1-BlkPlastics	**5-PS**
25	PU Foam - Insulation (2,4 g)	2,8	2-TecPlastics	**16-Flex PUR**
26	PVC (184,2 g)	218,0	1-BlkPlastics	**8-PVC**
27	PVC (excl. wire insul.) (219 g)	259,2	1-BlkPlastics	**8-PVC**
28	adhesive (10 g)			
29	Bitumen (6089 g)			
30	Cement - Gravel (1262,8 g)	1494,8	7-Misc.	**58-Concrete**
31	Cotton (452,18 g)			
32	Cotton+Resins noise absorbers (489 g)			
33	Electronic, boards, switches, lamp etc (447,5 g)	529,7	6-Electronics	**98-controller board**
34	Others (59,36 g)			
35	Paper (205,52 g)	243,3	7-Misc.	**57-Office paper**
36	Resins (120 g)	142,0	2-TecPlastics	**14-Epoxy**
37	Thermostat (10 g)	11,8	6-Electronics	**98-controller board**
38	Wiring (350 g)	414,3	4-Non-ferro	**29-Cu wire**
39	Wood (2034,4 g)	2408,1	7-Misc.	**56-Cardboard**
	TOTAL	**48156**		

Pos nr	MANUFACTURING Description	Weight in g	Percentage Adjust	Category index (fixed)
201	**OEM Plastics Manufacturing** (fixed)	9652		20
202	**Foundries Fe/Cu/Zn** (fixed)	2758		34
203	**Foundries Al/Mg** (fixed)	0		35
204	**Sheetmetal Manufacturing** (fixed)	29867		36
205	**PWB Manufacturing** (fixed)	0		53
206	**Other materials** (Manufacturing already included)	5879		
207	**Sheetmetal Scrap** (Please adjust percentage only)	1493	**5%**	37

Pos nr	DISTRIBUTION (incl. Final Assembly) Description		Answer	Category index (fixed)
208	**Is it an ICT or Consumer Electronics product <15 kg ?**		NO	59
209	**Is it an installed appliance (e.g. boiler)?**		NO	60
				62
210	**Volume of packaged final product in m^3**	**in m3**	0,400625106	63

Pos nr	USE PHASE Description		unit	Subtotals
211	**Product Life in years**	**12,5**	years	
	Electricity			
212	**On-mode: Consumption per hour, cycle, setting, etc.**	1,05833333	kWh	232,8333333

213	**On-mode: No. Of hours, cycles, settings, etc. / year**	**220,00**	#		
214	**Standby-mode: Consumption per hour**	0,00133333	kWh	0,266666667	
215	**Standby-mode: No. Of hours / year**	**200,00**	#		
216	**Off-mode: Consumption per hour**	0,0001578	kWh	1,2624	
217	**Off-mode: No. Of hours / year**	**8000,00**	#		
	TOTAL over Product Life	**2,93**	**MWh (=000 kWh)**		65
	Heat				
218	**Avg. Heat Power Output**	1,975	kW		
219	**No. Of hours / year**	110	hrs.		
220	**Type and efficiency (Click & select)**			**85-not applicable**	
	TOTAL over Product Life	**9,78**	**GJ**		
	Consumables (excl, spare parts)			**material**	
221	**Water**	**3,85**	m^3/year	**83-Water per m3**	
222	**Auxilliary material 1 (Click & select)**	**7,25**	kg/ year	**80-Detergent dishw.**	
223	**Auxilliary material 2 (Click & select)**	**1,02**	kg/ year	**81-Rinsing agent dish**	
224	**Auxilliary material 3 (Click & select)**	**7,84**	kg/ year	**82-Regen. Salt dishw**	
	Maintenance, Repairs, Service				
225	**No. of km over Product-Life**	**160,00**	km / Product Life		86
226	**Spare parts** (fixed, 1% of product materials & manuf.)	482	g		

Pos nr	DISPOSAL & RECYCLING Description		unit	Subtotals
	Substances released during Product Life and Landfill			
227	**Refrigerant in the product (Click & select)**	0	g	**1-none**
228	**Percentage of fugitive & dumped refrigerant**	0%		
229	**Mercury (Hg) in the product**	0	g Hg	
230	**Percentage of fugitive & dumped mercury**	0%		
	Disposal: Environmental Costs perkg final product			
231	**Landfill (fraction products not recovered) in g en %**	708	1%	88-fixed
232	**Incineration (plastics & PWB not re-used/recycled)**	1531	g	91-fixed
233	**Plastics: Re-use & Recycling ("cost"-side)**	7979	g	92-fixed
	Re-use, Recycling Benefit	**in g**	**% of plastics fraction**	
234	**Plastics: Re-use, Closed Loop Recycling (please edit%)**	0		4
235	**Plastics: Materials Recycling (please edit% only)**	7979	83%	4
236	**Plastics: Thermal Recycling (please edit% only)**	1531	16%	72
237	**Electronics: PWB Easy to Disassemble ? (Click&select)**	0	**YES**	98
238	**Metals & TV Glass & Misc.** (95% Recycling)	36579		fixed

Table B.4: DW 12 ps OUTPUT – EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005

Document subject to a legal notice (see below))

EuP EcoReport: RESULTS

ECO-DESIGN OF ENERGY-USING PRODUCTS

Assessment of Environmental Impact

Table . Life Cycle Impact (per unit) of DW 12ps MEDIA

Nr	Life cycle Impact per product:	Date	Author
0	**DW 12ps**	**21/05/07**	**0**

	Life Cycle phases -->		PRODUCTION			DISTRI-	USE	END-OF-LIFE*			TOTAL
	Resources Use and Emissions		Material	Manuf.	**Total**	**BUTION**		Disposal	Recycl.	**Total**	
	Materials	**unit**									
1	Bulk Plastics	g			**9029**			1432	7596	**9029**	**0**
2	TecPlastics	g			**624**			99	525	**624**	**0**
3	Ferro	g			**32274**			474	31800	**32274**	**0**
4	Non-ferro	g			**1542**			23	1519	**1542**	**0**
5	Coating	g			**0**			0	0	**0**	**0**
6	Electronics	g			**542**			542	0	**542**	**0**
7	Misc.	g			**4146**			61	4085	**4146**	**0**
	Total weight	g			**48156**			2631	45525	**48156**	**0**
									see note!		
	Other Resources & Waste							debet	credit		
8	Total Energy (GER)	MJ	3075	870	**3945**	**595**	**34487**	203	494	**-291**	**38736**
9	of which, electricity (in primary MJ)	MJ	622	520	**1142**	**1**	**30771**	0	29	**-29**	**31886**
10	Water (process)	ltr	1947	8	**1955**	**0**	**50274**	0	19	**-19**	**52209**
11	Water (cooling)	ltr	971	242	**1213**	**0**	**82039**	0	160	**-160**	**83093**
12	Waste, non-haz./ landfill	g	63531	2939	**66470**	**313**	**40158**	894	112	**781**	**107723**
13	Waste, hazardous/ incinerated	g	409	0	**409**	**6**	**789**	1532	18	**1514**	**2718**
	Emissions (Air)										
14	Greenhouse Gases in GWP100	kg CO2 eq.	222	48	**270**	**37**	**1519**	15	15	**0**	**1825**
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	1946	209	**2155**	**111**	**8828**	38	31	**7**	**11101**
17	Volatile Organic Compounds (VOC)	g	8	0	**9**	**8**	**19**	1	0	**1**	**37**
18	Persistent Organic Pollutants (POP)	ng i-Teq	417	16	**433**	**2**	**228**	6	0	**6**	**669**
19	Heavy Metals	mg Ni eq.	3211	38	**3249**	**16**	**700**	53	0	**53**	**4018**
	PAHs	mg Ni eq.	152	0	**152**	**20**	**152**	0	2	**-2**	**322**
20	Particulate Matter (PM, dust)	g	262	32	**295**	**1370**	**1601**	435	3	**431**	**3698**
	Emissions (Water)										
21	Heavy Metals	mg Hg/20	2150	0	**2150**	**0**	**222**	13	0	**13**	**2385**
22	Eutrophication	g PO4	57	0	**57**	**0**	**4859**	1	1	**0**	**4917**
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

***=Note: Recycling credits only relate to recycling of plastics and electronics (excl. LCD/CRT). Recycling credits for metals and other fractions are already taken into account in the production phase.**

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Table B.5: WM 5 kg INPUT – EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005 — Document subject to a legal notice (see below)

ECO-DESIGN OF ENERGY-USING PRODUCTS — EuP EcoReport: INPUTS — Assessment of Environmental Impact

Nr	Product name	Date	Author
	WM 5 kg	**21/05/2007**	

Pos nr	MATERIALS Extraction & Production Description of component	Weight in g	Category Click &select	Material or Process select Category first !
1	cast iron (6214 g)	6499,9	3-Ferro	**23-Cast iron**
2	Iron (4977,9 g)	5206,9	3-Ferro	**23-Cast iron**
3	Stainless Steel (1939,2 g)	2028,4	3-Ferro	**25-Stainless 18/8 coil**
4	Stainless steel sheet (564 g)	589,9	3-Ferro	**21-St sheet galv.**
5	Steel (12521,34 g)	13097,4	3-Ferro	**25-Stainless 18/8 coil**
6	Steel strip (6145 g)	6427,7	3-Ferro	**21-St sheet galv.**
7	Al (1502,8 g)	1571,9	4-Non-ferro	**26-Al sheet/extrusion**
8	Alluminium sheet (1,34 g)	1,4	4-Non-ferro	**26-Al sheet/extrusion**
9	Aluminium casting (recycled 80%) (728,8 g)	762,3	4-Non-ferro	**27-Al diecast**
10	Brass (14,24 g)	14,9	4-Non-ferro	**31-CuZn38 cast**
11	Copper sheet (0,46 g)	0,5	4-Non-ferro	**30-Cu tube/sheet**
12	Copper wire (347,76 g)	363,8	4-Non-ferro	**29-Cu wire**
13	Cr (1761,2 g)		4-Non-ferro	
14	Cu (869,2 g)	909,2	4-Non-ferro	**29-Cu wire**
15	Ni (0,8 g)		4-Non-ferro	
16	zinc diecasting (84,8 g)	88,7	4-Non-ferro	**31-CuZn38 cast**
17	ABS (1144,7 g)	1197,4	1-BlkPlastics	**10-ABS**
18	EPDM - rubber (1675,18 g)	1752,3	1-BlkPlastics	**1-LDPE**
19	PA (6 g)	6,3	2-TecPlastics	**11-PA 6**
20	PA 66-GF(Glass Fibre Reinforced) (0,42 g)	0,4	2-TecPlastics	**11-PA 6**
21	PA66 (87,8 g)	91,8	2-TecPlastics	**11-PA 6**
22	PC (187,76 g)	196,4	2-TecPlastics	**12-PC**
23	PC-G (Glass Reinforced) (2,48 g)	2,6	2-TecPlastics	**12-PC**
24	PE (10,2 g)	10,7	1-BlkPlastics	**2-HDPE**
25	Plastics, others (1037,04 g)			
26	POM (40,74 g)	42,6	1-BlkPlastics	**2-HDPE**
27	PP (5401,7 g)	5650,2	1-BlkPlastics	**4-PP**
28	PP-K40 (2532,5 g)	2649,0	1-BlkPlastics	**4-PP**
29	PPO (=PPE) (1,9 g)	2,0	1-BlkPlastics	**4-PP**
30	PPS-GF (76 g)			
31	PVC (221,38 g)	231,6	1-BlkPlastics	**8-PVC**
32	PBT (8 g)			
42	Bitumen (37,8 g)			
43	Concrete (18179,6 g)	19016,0	7-Misc.	**58-Concrete**
44	Electronic, boards, switches, lamp etc (164,88 g)	172,5	6-Electronics	**98-controller board**
45	Filter (28 g)			
46	Glass (1772,6 g)	1854,2	7-Misc.	**54-Glass for lamps**
47	Gravel (25 g)	26,2	7-Misc.	**58-Concrete**
48	Oil - Feet (28 g)			
49	Others (203,8 g)			
50	Paper (booklets etc) (106 g)	110,9	7-Misc.	**57-Office paper**
51	Wiring (87,6 g)	91,6	4-Non-ferro	**29-Cu wire**
52	Wood (1573 g)	1645,4	7-Misc.	**56-Cardboard**
	TOTAL	**72313**		

Pos nr	MANUFACTURING Description	Weight in g	Percentage Adjust	Category index (fixed)
201	**OEM Plastics Manufacturing** (fixed)	11833		20
202	**Foundries Fe/Cu/Zn** (fixed)	11810		34
203	**Foundries Al/Mg** (fixed)	762		35
204	**Sheetmetal Manufacturing** (fixed)	23717		36
205	**PWB Manufacturing** (fixed)	0		53
206	**Other materials** (Manufacturing already included)	24190		

207	Sheetmetal Scrap (Please adjust percentage only)	1186	5%	37

Pos nr	DISTRIBUTION (incl. Final Assembly) Description		Answer	Category index (fixed)
208	Is it an ICT or Consumer Electronics product <15 kg ?		NO	59
209	Is it an installed appliance (e.g. boiler)?		NO	60
				62
210	Volume of packaged final product in m^3	in m3	0,3648	63

Pos nr	USE PHASE Description		unit	Subtotals
211	Product Life in years	15	years	
	Electricity			
212	On-mode: Consumption per hour, cycle, setting, etc.	0,928	kWh	208,8
213	On-mode: No. Of hours, cycles, settings, etc. / year	225	#	
214	Standby-mode: Consumption per hour	0,0032	kWh	0,64
215	Standby-mode: No. Of hours / year	200	#	
216	Off-mode: Consumption per hour	0,00065	kWh	5,2
217	Off-mode: No. Of hours / year	8000	#	
	TOTAL over Product Life	3,22	MWh (=000 kWh)	65
	Heat			
218	Avg. Heat Power Output	1,95	kW	
219	No. Of hours / year	90	hrs.	
220	Type and efficiency (Click & select)			85-not applicable
	TOTAL over Product Life	9,48	GJ	
	Consumables (excl. spare parts)			material
221	Water	10,0125	m^3/year	83-Water per m3
222	Auxilliary material 1 (Click & select)	24,9333333	kg/ year	85-None
223	Auxilliary material 2 (Click & select)	20	kg/ year	85-None
224	Auxilliary material 3 (Click & select)	0	kg/ year	85-None
	Maintenance, Repairs, Service			
225	No. of km over Product-Life	160,00	km / Product Life	86
226	Spare parts (fixed, 1% of product materials & manuf.)	723	g	

Pos nr	DISPOSAL & RECYCLING Description		unit	Subtotals
	Substances released during Product Life and Landfill			
227	Refrigerant in the product (Click & select)	0	g	1-none
228	Percentage of fugitive & dumped refrigerant	0%		
229	Mercury (Hg) in the product	0	g Hg	
230	Percentage of fugitive & dumped mercury	0%		
	Disposal: Environmental Costs perkg final product			
231	Landfill (fraction products not recovered) in g en %	0		88-fixed
232	Incineration (plastics & PWB not re-used/recycled)	390	g	91-fixed
233	Plastics: Re-use & Recycling ("cost"-side)	11443	g	92-fixed
			% of plastics fraction	
	Re-use, Recycling Benefit	in g		
234	Plastics: Re-use, Closed Loop Recycling (please edit%)	3159	27%	4
235	Plastics: Materials Recycling (please edit% only)	8283	70%	4
236	Plastics: Thermal Recycling (please edit% only)	390	3%	72
237	Electronics: PWB Easy to Disassemble ? (Click&select)	0	YES	98
238	Metals & TV Glass & Misc. (95% Recycling)	57456		fixed

Table B.6: WM 5 kg OUTPUT – EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005 — Document subject to a legal notice (see below))

ECO-DESIGN OF ENERGY-USING PRODUCTS

EuP EcoReport: **RESULTS**

Assessment of Environmental Impact

Table . Life Cycle Impact (per unit) of WM 5 kg MEDIA

Nr	**Life cycle Impact per product:**	Date	Author
0	WM 5 kg	21/05/07	0

	Life Cycle phases -->		PRODUCTION			DISTRI-	USE	END-OF-LIFE*			TOTAL
	Resources Use and Emissions		Material	Manuf.	**Total**	**BUTION**		Disposal	Recycl.	**Total**	
	Materials	**unit**									
1	Bulk Plastics	g			**11536**			381	11155	**11536**	**0**
2	TecPlastics	g			**298**			10	288	**298**	**0**
3	Ferro	g			**33850**			0	33850	**33850**	**0**
4	Non-ferro	g			**3804**			0	3804	**3804**	**0**
5	Coating	g			**0**			0	0	**0**	**0**
6	Electronics	g			**172**			172	0	**172**	**0**
7	Misc.	g			**22653**			0	22653	**22653**	**0**
	Total weight	g			**72313**			563	71750	**72313**	**0**
	Other Resources & Waste							debet	see note! credit		
8	Total Energy (GER)	MJ	2943	887	**3830**	**547**	**34230**	101	608	**-507**	**38100**
9	of which, electricity (in primary MJ)	MJ	391	531	**923**	**1**	**33815**	0	47	**-47**	**34692**
10	Water (process)	ltr	1350	8	**1358**	**0**	**152455**	0	31	**-31**	**153782**
11	Water (cooling)	ltr	857	248	**1105**	**0**	**90160**	0	260	**-260**	**91005**
12	Waste, non-haz./ landfill	g	66171	2949	**69120**	**290**	**39889**	37	183	**-146**	**109153**
13	Waste, hazardous/ incinerated	g	175	0	**176**	**6**	**781**	391	29	**362**	**1324**
	Emissions (Air)										
14	Greenhouse Gases in GWP100	kg CO2 eq.	195	49	**245**	**34**	**1508**	7	15	**-8**	**1778**
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	1656	213	**1870**	**102**	**8754**	27	39	**-12**	**10714**
17	Volatile Organic Compounds (VOC)	g	7	0	**7**	**8**	**19**	2	0	**1**	**35**
18	Persistent Organic Pollutants (POP)	ng i-Teq	414	13	**427**	**2**	**226**	0	0	**0**	**654**
19	Heavy Metals	mg Ni eq.	2399	30	**2429**	**15**	**687**	24	0	**24**	**3154**
	PAHs	mg Ni eq.	190	0	**190**	**19**	**153**	0	2	**-2**	**360**
20	Particulate Matter (PM, dust)	g	355	33	**388**	**1248**	**1601**	380	5	**375**	**3612**
	Emissions (Water)										
21	Heavy Metals	mg Hg/20	1597	0	**1597**	**0**	**234**	2	0	**2**	**1833**
22	Eutrophication	g PO4	40	0	**41**	**0**	**1**	0	1	**-1**	**41**
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

***=Note: Recycling credits only relate to recycling of plastics and electronics (excl. LCD/CRT). Recycling credits for metals and other fractions are already taken into account in the production phase.**

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B.1 ANNEX C: SIMAPRO DATA

B.1.1 The SimaPro v.7.1 software

Even if it is not in the scope of this study to perform a LCA in full accordance with ISO 14040, the methodology was applied as close as possible. To this end a specialized LCA software tool was used, the SimaPro 7.1, the last version of the software[1].

This software allows one to perform an ecological balance of a product along all its life, taking into account for each material used, raw material extraction, energy and water consumption (with distinction between renewable and non renewable resources) , and related impacts in air, water, soil. Again it is possible to use specific models for energy production, waste treatment, transport and ancillary materials production. It is also possible to use and compare different environmental impact assessment methodologies (Ecoindicator, CML, EPS, Ecopoint…) performing sensitivity analysis. Again in this software many databases are included in a form to be used for a same ecobalance (avoiding double sum of an impact or loss of data).

Using SimaPro it is possible to simulate the LCA of products or services according to the ISO14040 standards.

B.1.2 Input data in SimaPro

B.1.2.1 Dishwashers

Table B.1: DW12ps assembling

Name			
DW12ps assembling	as average on data from producers		
Materials/assembling			Notes
Steel I	424	g	galvanized steel
Crude iron I	2421	g	Iron
Steel I	1334	g	Prepainted Steel
X5CrNi18 (304) I	9136	g	Stainless Steel
Steel I	6870	g	Steel
Steel I	7461	g	Steel strip
Steel I	1016	g	Steel+PA
Aluminium rec. I	272	g	
Brass, at plant/CH U	24	g	Brass
Chromium I	72	g	
Copper I	663	g	
Zinc I	4	g	
Cardboard duplex/tripl	639	g	for packaging
PS (EPS) B250 (1998)	733	g	for packaging
Kraft paper, bleached, at plant/RER U	3	g	for packaging
PE (LDPE) I	174	g	for packaging (PE foil) + laminating
Poplar I	1022	g	wood
ABS I	785	g	
EPDM rubber ETH U	547	g	
PS (EPS) B250 (1998)	41	g	

[1] Wdit by Prè, NL, see http://www.pre.nl/simapro/default.htm .

PA 6 I	416	g	
PB B250 (1998)	37	g	as PBT
PE (HDPE) I	196	g	as PE
PMMA I	6	g	
HDPE B250	240	g	
PP I	5170	g	
PP I	34	g	as PP volute
PS (EPS) B250 (1998)	534	g	
PUR semi rigid foam I	3	g	PU foam - insulation
PVC B250	192	g	
PVC B250	229	g	
adhesive - glue	10	g	as adhesive
Bitumen refinery Europe U	6157	g	
Concrete I	1277	g	
Cotton fabric I	457	g	
Liquid epoxy resins E	247	g	cotton+resins noise adsorbers
Cotton fibres I	247	g	cotton+resins noise adsorbers
Electronics for control units/RER U	453	g	electronics
Kraft paper, bleached, at plant/RER U	208	g	
Liquid epoxy resins E	121	g	
Electronics for control units/RER U	10	g	AS THERMOSTAT (10 g)
Copper, at regional storage/RER U	354	g	AS WIRING
Poplar I	2057	g	wood
Water demineralized ETH U	88	kg	PROCESS WATER
Paint ETH S	53	g	white painting powder (53 g)
Processi			
Electricity MV use in UCPTE U	17,31	kWh	during assembling
Heat gas B250	9,2	kWh	
Truck 28t B250	23	tkm	transport for assembling
Sea ship B250	10	tkm	transport for assemnling
Hot rolling, steel/RER U	8511	g	
Sheet rolling, steel/RER U	4398	g	
Extruding alum I	136	g	
Wire drawing, copper/RER U	509	g	
Foaming, expanding/RER U	918	g	
Injection moulding/RER U	5201	g	
Extrusion PVC I	295	g	

Table B.2: DW12ps consumables (per year)

Name DW12ps use materials (per year) Materials/assembling			Notes
Tap water, at user/CH U	3,85	ton	
Detergent C - EN 50242 or IEC 60436 DW	7,25	kg	
Rinsing agent DW	1,02	kg	
Sodium chloride, powder, at plant/RER U	7,835	kg	Salt dishw.

Table B.3: DW12ps Life cycle

Lyfe Cycle: Name DW12 Assembling			Note
DW12ps assembling	1	p	

Processes			
Electricity LV use UCPTE U	2930	kWh	consumption of electricity over the life cycle (on-mode, stand-by,
Delivery van (<3.5t) B250	8,11	tkm	transport over product life for maintenance, repairs, service

Table B.4: DW12ps End of Life Scenario

Name DW12 EoL		
Assembling DW12ps assembling	1	p
Processes		
Disposal Recycling only B250 avoided Incineration B250 (98) avoided Landfill B250 (98)	82 15 3	

B.1.2.2 Washing machines

Table B.5: WM5kg assembling

Assembly:				
Name WM 5kg assembling	as average on data from producers			
Materials/assembling			Notes	
Cast iron ETH U	6524,7	g		
Crude iron I	5226,8	g	Iron	
X5CrNi18 (304) I	2036,16	g	Stainless Steel	
X5CrNi18 (304) I	592	g	Stainless Steel sheet + laminating	
	13147,4			
Steel I	1	g	steel	
Steel I	6452,25	g	steel strip + laminating	
Aluminium rec. I	1519	g		
Aluminium rec. I	736	g	aluminium casting	
Brass, at plant/CH U	14,38	g	Brass	
Copper I	352	g	copper + wiring	
Chromium I	1779	g		
Copper I	878	g		
Nickel I	0,8	g		
Zinc I	85,65	g		
Cardboard duplex/tripl	111	g	for packaging	
PS (EPS) B250 (1998)	705	g	for packaging	
Kraft paper, bleached, at plant/RER U	10,5	g	for packaging	
PE (LDPE) I	182	g	for packaging (PE foil) + laminating	
PP I	8	g		
Poplar I	915	g	wood	
ABS I	1261	g		
EPDM rubber ETH U	1846	g		
PA 6 I	6,6	g		
PA 66 GF30 I	0,5	g		

PA 66 I	96,75	g		
PC I	207	g		
PC 30% glass fibre I	2,73	g		
PE (HDPE) I	11,24	g	as PE	
HDPE B250	45	g	as POM	
PP granulate average B250	5952	g	as PP	
PP granulate average B250	2790,6	g	as PP-k40	
PP granulate average B250	2,1	g	as PPO	
PP GF30 I	83,74	g	as PPS-GF	
PVC B250	244	g		
PB B250 (1998)	8,8	g	as PBT	
Bitumen refinery Europe U	38,53	g		
	18531,4			
Concrete I	7	g		
Electronics for control units/RER U	168,07	g	electronics	
PP granulate average B250	28,54	g	as filter	
Glass (white) B250	1807	g		
Gravel I	25	g		
Lubricating oil, at plant/RER U	28,54	g		
Kraft paper, bleached, at plant/RER U	108	g		
Copper I	89	g	+ wire	
Poplar I	2057	g	wood	
Water demineralized ETH U	590	kg		
Lubricating oil, at plant/RER U	45	g		
Processi				
Electricity MV use in UCPTE U	28,98	kWh	during assembling	
Heat gas B250	14,79	kWh		
Truck 28t B250	34	tkm	transport for assembling	
Sea ship B250	14	tkm	transport for assemnling	
Hot rolling, steel/RER U	10205	g		
Sheet rolling, steel/RER U	3522	g		
Extruding alum I	759	g		
Wire drawing, copper/RER U	220	g		
Foaming, expanding/RER U	552	g		
Injection moulding/RER U	8567	g		
Extrusion PVC I	171	g		

Table B.6: WM5kg consumables (per year)

Assembling:		
Name		
WM 5kg use materials (per year)		
Materials/assembling		
Tap water, at user/CH U	10,01	ton
Detergent powder WM	24,93	kg
Softening WM	20	kg

Table B.7: WM5kg Life cycle

Life Cycle:			
Name WM 5kg			

Assembling			
WM 5kg assembling	1	p	
Processes			
Electricity LV use UCPTE U	3220	kWh	consumption of electricity over the life cycle (on-mode, stand-by,
Delivery van (<3.5t) B250	11,88	tkm	transport over product life for maintenance, repairs, service
Disposal			
WM 5kg EoL			
Cicli di vita supplementari			
WM 5kg use materials (per LC)	1		

Table B.8: WM5kg End of Life Scenario

Name		
WM 5kg EoL		
Assembling		
WM 5kg assembling	1	p
Processes		
Disposal		
Recycling only B250 avoided	82	
Incineration B250 (98) avoided	3	
Landfill B250 (98)	15	

B.1.3 Detergents and other Washing chemicals simulation

Table B.9: Average composition of detergent for washing machine

Detergent for washing mashine	
COMPOSITION %	100
tensioattivi anionici 7-13	12
tensioattivi non ionici 1-5	4
sapone sodico 0-10	7
zeolite A 15-25	22
silicato sodico 1-5	4
carbonato sodico 0-10	7
solfato sodico 0-30	24
perborato sodico 10-25	20
attivatore del perborato 0-4	
componenti minori 0,2-0,5	

Table B.10: Average composition of softening agent for washing machine

Softening for washing mashine	
COMPOSIZIONE %	100,00
Tensioattivi cationici 5-15	15,00
Alcool isopropilico 2-5	5,00
Acidi grassi 0-4	4,00
Citrato sodico 0-2	2,00
Componenti minori: profumo, acidificanti 0,2-0,5	
water up to 100	74,00

Table B.11: Average composition of detergent for dish washer

Detergent for Dish Washer		
Composition		100
sodium tripoliphosphate	23	55
tri-sodium citrate diydrate	22,3	6
sodium perborate monoydrate	6	2
tetraacetyl etilen diammina	2	5
sodium disilicate	5	2
linear fatty alcoholo etoxillate	2	30
maleic acid	4	
protease	1	
amilase	0,7	
sodium carbonate		

Table B.12: Average composition of rinsing agent for dish washer

Rinsing agent for Dish Washer	
Components	100
linear fatty alcohol ethoxilate	15
cumene sulfonate	11,5
cytric acid	3
H2O	70,5

Table B.13: Input data on SimaPro for Detergent for washing machine

Products			
Detergent powder WM	100	kg	Chemicals\Washing agents
Resources			
Materials/fuels			
Fatty alcohol sulfonate, mix, at plant/RER U	16	kg	
Soap, at plant/RER U	7	kg	
Zeolite, powder, at plant/RER U	22	kg	
Sodium silicate, spray powder 80%, at plant/RER U	4	kg	
Sodium percarbonate, powder, at plant/RER U	7	kg	
Sodium sulphate, powder, production mix, at plant/RER U	24	kg	
Sodium perborate, tetrahydrate, powder, at plant/RER U	20	kg	

Table B.14: Input data on SimaPro for Softening for washing machine

Products			
Softening WM	100	kg	Chemicals\Washing agents
Avoided products			
Materials/fuels			
Fatty alcohol sulfonate, mix, at plant/RER U	15	kg	as cationic tensides
Fatty alcohol sulfonate, mix, at plant/RER U	5	kg	as isopropilic acid
Fatty acids, from vegetarian oil, at plant/RER U	4	kg	
Sodium perborate, monohydrate, powder, at plant/RER U	2	kg	as sodium citrate
Water demineralized ETH U	74	kg	

Table B.15: Input data on SimaPro for Detergent for Dish washer

Products			

Detergent C - EN 50242 or IEC 60436 DW	100	kg	Chemicals\Washing agents
Resources			
Materials/fuels			
Sodium tripolyphosphate, at plant/RER U	55	kg	
Sodium perborate, monohydrate, powder, at plant/RER U	6	kg	sodium perborate monohydrate
EDTA, ethylenediaminetetraacetic acid, at plant/RER U	2	kg	Tetraacetyl ethylendiamine
Sodium silicate, spray powder 80%, at plant/RER U	5	kg	sodium disilicate
Ethoxylated alcohols, unspecified, at plant/RER U	2	kg	linear fatty alcohol ethoxylate (non ionic surfactant, low foaming)
Sodium percarbonate, powder, at plant/RER U	30	kg	sodium carbonate

Table B.16: Input data on SimaPro for Rinsing agent for Dish washer

Products			
Rinsing agent DW	100	kg	Chemicals\Washing agents
Avoided products			
Resources			
Materials/fuels			
Ethoxylated alcohols, unspecified, at plant/RER U	15	kg	
Cumene, at plant/RER U	11,5	kg	
Acetic acid, 98% in H2O, at plant/RER U	3	kg	as citric acid (anhydrous)
Water, deionised, at plant/CH U	70,5	kg	H2O

B.1.4 Eco-indocator95 – rev. EuP v.2.03

The Eco-indicator 95 method was developed under the Dutch NOH programme by PRé consultants in a joint project with Philips Consumer Electronics, NedCar, Océ Copiers, Schuurink, CML Leiden, TU-Delft, IVAM-ER (Amsterdam) and CE Delft.

This V2 version is adapted for SimaPro 6.0. All characterisation factors in this method are entered for the 'unspecified' sub-compartment of each compartment (raw materials, air, water, soil) and thus applicable on all sub-compartments.

Other adaptations (V2.1):
- Solid waste expanded with all mass waste flows in SimaPro 6 database
- Energy expanded with energy resources in SimaPro 6 database
- Pesticides to water expanded with pesticides to water in SimaPro 6 database
- Carbon dioxide, biogenic and uptake from carbon dioxide from air (carbon dioxide, in air) are added to the methodology. Similar for 'Carbon monoxide, fossil' and 'carbon monoxide, biogenic'.

Other adaptations (August 2004):

- Energy expanded with energy resources in SimaPro not adapted in V2.1 (values taken from Cumulative energy demand V1.2 method)
- Greenhouse, Summer smog: Methane, biogenic and Methane, fossil added
- Euthrophication: phosphorus compounds completed.
- Acidification, Euthrophication: nitrogen compounds completed.
- Acidification: sulphur compounds completed.
- "Particulates, > 2,5 um, and < 10um" added with the assumption that the characterization factor is the same as for "Particulates, < 10 um"

Other adaptations (March 2005):
- Eutrophication: dinitrogen monoxide removed; nitrogen, to water added (equal to nitrogen, total, to water)
- Solid waste: waste, from drilling, unspecified added.

Other adaptations (August 2005, v.2.03):
- In impact category energy resources the characterisation value for "Gas, natural in ground" has been changed from 40,3 to 38,3 MJ LHV/m^3 following the ecoinvent 1.2 update.

This method is not fully adapted for inventory data from the ecoinvent library and the USA Input Output Database 98, and therefore omits emissions that could have been included in impact assessment.
The characterisation conforms to the CML guide used in the SimaPro2 method; however the toxicity scores are specified into heavy metals, carcinogenic substances, pesticides and winter smog.
Normalisation is based on 1990 levels for Europe excl. former USSR. In Europe 'g' missing data was extrapolated using GNP's (gross national product); 'e' missing data was extrapolated using energy use. The Europe 'e' normalisation is used in the Eco-indicator method.

Weighting is based on distance to target. Criteria for target levels are:
- One excess death per million per year
- 5% ecosystem degradation
- Avoidance of smog periods.

Due to continual adjustments of the method and/or inventory data sets the Eco-indicator 95 in SimaPro will not give the same result as the original printed version. See database manual for further information[2].

SimaPro 7.1	Method	Date:	08/08/2007	Period:	16.11.31
Project	EupProject				
Name	Eco-indicator 95 - rev EuP V2.03				
Comment	Revised by Laura Cutaia (29.07.07) to convert output in form of the software EuP Ecoreport				
Use Damage Assessment	No				
Use Normalization	Yes				
Use Weighting	Yes				
Use Addition	Yes				
Weighting	Pt				

[2] More information and the "Manual for Designers" can also be downloaded from http://www.pre.nl

unit					
Impact category	greenhouse	kg CO2			
Air	(unspecified)	Carbon dioxide	000124-38-9	1	kg CO2 / kg
Air	(unspecified)	Carbon dioxide, biogenic	000124-38-9	1	kg CO2 / kg
Air	(unspecified)	Carbon dioxide, fossil	000124-38-9	1	kg CO2 / kg
Air	(unspecified)	Carbon dioxide, in air	000124-38-9	-1	kg CO2 / kg
Air	(unspecified)	Carbon monoxide	000630-08-0	1,57	kg CO2 / kg
Air	(unspecified)	Carbon monoxide, biogenic	000630-08-0	1,57	kg CO2 / kg
Air	(unspecified)	Carbon monoxide, fossil	000630-08-0	1,57	kg CO2 / kg
Air	(unspecified)	Chlorinated fluorocarbons, hard		7100	kg CO2 / kg
Air	(unspecified)	Chlorinated fluorocarbons, soft		1600	kg CO2 / kg
Air	(unspecified)	Chloroform	000067-66-3	25	kg CO2 / kg
Air	(unspecified)	Dinitrogen monoxide	010024-97-2	296	kg CO2 / kg
Air	(unspecified)	Ethane, 1-chloro-1,1-difluoro-, HCFC-142	000075-68-3	1800	kg CO2 / kg
Air	(unspecified)	Ethane, 1,1-dichloro-1-fluoro-, HCFC-141b	001717-00-6	580	kg CO2 / kg
Air	(unspecified)	Ethane, 1,1-difluoro-, HFC-152a	000075-37-6	150	kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,1-trichloro-, HCFC-140	000071-55-6	100	kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,1-trifluoro-, HCFC-143a	000420-46-2	3800	kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,1,2-tetrafluoro-, HFC-134a	000811-97-2	1300	kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-, CFC-113	000076-13-1	4500	kg CO2 / kg
Air	(unspecified)	Ethane, 1,2-dichloro-1,1,2,2-tetrafluoro-, CFC-114	000076-14-2	7000	kg CO2 / kg
Air	(unspecified)	Ethane, 2-chloro-1,1,1,2-tetrafluoro-, HCFC-124	002837-89-0	440	kg CO2 / kg
Air	(unspecified)	Ethane, 2,2-dichloro-1,1,1-trifluoro-, HCFC-123	000306-83-2	90	kg CO2 / kg
Air	(unspecified)	Ethane, chloropentafluoro-, CFC-115	000076-15-3	7000	kg CO2 / kg
Air	(unspecified)	Ethane, hexafluoro-, HFC-116	000076-16-4	9200	kg CO2 / kg
Air	(unspecified)	Ethane, pentafluoro-, HFC-125	000354-33-6	3400	kg CO2 / kg
Air	(unspecified)	Methane	000074-82-8	21	kg CO2 / kg
Air	(unspecified)	Methane, biogenic	000074-82-8	21	kg CO2 / kg
Air	(unspecified)	Methane, bromochlorodifluoro-, Halon 1211	000353-59-3	4900	kg CO2 / kg
Air	(unspecified)	Methane, bromotrifluoro-, Halon 1301	000075-63-8	4900	kg CO2 / kg
Air	(unspecified)	Methane, chlorodifluoro-, HCFC-22	000075-45-6	1600	kg CO2 / kg
Air	(unspecified)	Methane, chlorotrifluoro-, CFC-13	000075-72-9	13000	kg CO2 / kg
Air	(unspecified)	Methane, dichloro-, HCC-30	000075-09-2	15	kg CO2 / kg
Air	(unspecified)	Methane, dichlorodifluoro-, CFC-12	000075-71-8	7100	kg CO2 / kg
Air	(unspecified)	Methane, fossil	000074-82-8	11	kg CO2 / kg
Air	(unspecified)	Methane, tetrachloro-, CFC-10	000056-23-5	1300	kg CO2 / kg
Air	(unspecified)	Methane, tetrafluoro-, FC-14	000075-73-0	6500	kg CO2 / kg
Air	(unspecified)	Methane, trichlorofluoro-, CFC-11	000075-69-4	3400	kg CO2 / kg
Air					
Air	ozone layer	kg CFC11			
Air	(unspecified)	Chlorinated fluorocarbons, hard		1	kg CFC11 / kg
Air	(unspecified)	Chlorinated fluorocarbons, soft		0,055	kg CFC11 / kg
Air	(unspecified)	Ethane, 1-chloro-1,1-difluoro-, HCFC-142	000075-68-3	0,065	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1-dichloro-1-fluoro-, HCFC-141b	001717-00-6	0,11	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,1-trichloro-, HCFC-140	000071-55-6	0,12	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,1-trifluoro-2,2-chlorobromo-, Halon 2311	000151-67-7	0,14	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,1,2-tetrafluoro-2-bromo-, Halon 2401	000124-72-1	0,25	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-, CFC-113	000076-13-1	1,07	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,2-dibromotetrafluoro-, Halon 2402	000124-73-2	7	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,2-dichloro-1,1,2,2-tetrafluoro-, CFC-114	000076-14-2	0,8	kg CFC11 / kg
Air	(unspecified)	Ethane, 2-chloro-1,1,1,2-tetrafluoro-, HCFC-124	002837-89-0	0,022	kg CFC11 / kg
Air	(unspecified)	Ethane, 2,2-dichloro-1,1,1-trifluoro-, HCFC-123	000306-83-2	0,02	kg CFC11 / kg
Air	(unspecified)	Ethane, chloropentafluoro-, CFC-115	000076-15-3	0,5	kg CFC11 / kg
Air	(unspecified)	Methane, bromo-, Halon 1001	000074-83-9	0,6	kg CFC11 / kg
Air	(unspecified)	Methane, bromochlorodifluoro-, Halon 1211	000353-59-3	4	kg CFC11 / kg
Air	(unspecified)	Methane, bromodifluoro-, Halon 1201	001511-62-2	1,4	kg CFC11 / kg
Air	(unspecified)	Methane, bromotrifluoro-, Halon 1301	000075-63-8	16	kg CFC11 / kg
Air	(unspecified)	Methane, chlorodifluoro-, HCFC-22	000075-45-6	0,055	kg CFC11 / kg
Air	(unspecified)	Methane, chlorotrifluoro-, CFC-13	000075-72-9	1	kg CFC11 / kg
Air	(unspecified)	Methane, dibromodifluoro-, Halon 1202	000075-61-6	1,25	kg CFC11 / kg
Air	(unspecified)	Methane, dichlorodifluoro-, CFC-12	000075-71-8	1	kg CFC11 / kg
Air	(unspecified)	Methane, tetrachloro-, CFC-10	000056-23-5	1,08	kg CFC11 / kg
Air	(unspecified)	Methane, trichlorofluoro-, CFC-11	000075-69-4	1	kg CFC11 / kg
Air	(unspecified)	Propane, 1,3-dichloro-1,1,2,2,3-pentafluoro-, HCFC-225cb	000507-55-1	0,033	kg CFC11 / kg
Air	(unspecified)	Propane, 3,3-dichloro-1,1,1,2,2-pentafluoro-, HCFC-	000422-56-0	0,025	kg CFC11 / kg

		225ca			
Impact category	acidification	kg SO2			
Air	(unspecified)	Ammonia	007664-41-7	1,88	kg SO2 / kg
Air	(unspecified)	Ammonium carbonate	000506-87-6	0,67	kg SO2 / kg
Air	(unspecified)	Ammonium nitrate	006484-52-2	0,4	kg SO2 / kg
Air	(unspecified)	Ammonium, ion	014798-03-9	1,78	kg SO2 / kg
Air	(unspecified)	Dinitrogen monoxide	010024-97-2	1,78	kg SO2 / kg
Air	(unspecified)	Hydrogen chloride	007647-01-0	0,88	kg SO2 / kg
Air	(unspecified)	Hydrogen fluoride	007664-39-3	1,6	kg SO2 / kg
Air	(unspecified)	Hydrogen sulfide	007783-06-4	1,88	kg SO2 / kg
Air	(unspecified)	Nitric acid	007697-37-2	0,51	kg SO2 / kg
Air	(unspecified)	Nitric oxide	010102-43-9	1,07	kg SO2 / kg
Air	(unspecified)	Nitrogen dioxide	010102-44-0	0,7	kg SO2 / kg
Air	(unspecified)	Nitrogen oxides	011104-93-1	0,7	kg SO2 / kg
Air	(unspecified)	Sulfur dioxide	007446-09-5	1	kg SO2 / kg
Air	(unspecified)	Sulfur oxides		1	kg SO2 / kg
Air	(unspecified)	Sulfur trioxide	007446-11-9	0,8	kg SO2 / kg
Air	(unspecified)	Sulfuric acid	007664-93-9	0,65	kg SO2 / kg
Impact category	eutrophication	kg PO4			
Ground	(unspecified)	Ammonia	007664-41-7	0,33	kg PO4 / kg
Water	(unspecified)	Ammonia	007664-41-7	0,33	kg PO4 / kg
Air	(unspecified)	Ammonia	007664-41-7	0,33	kg PO4 / kg
Air	(unspecified)	Ammonium carbonate	000506-87-6	0,12	kg PO4 / kg
Ground	(unspecified)	Ammonium nitrate	006484-52-2	0,074	kg PO4 / kg
Air	(unspecified)	Ammonium nitrate	006484-52-2	0,074	kg PO4 / kg
Water	(unspecified)	Ammonium, ion	014798-03-9	0,33	kg PO4 / kg
Ground	(unspecified)	Ammonium, ion	014798-03-9	0,33	kg PO4 / kg
Air	(unspecified)	Ammonium, ion	014798-03-9	0,33	kg PO4 / kg
Water	(unspecified)	BOD5, Biological Oxygen Demand		0,11	kg PO4 / kg
Water	(unspecified)	COD, Chemical Oxygen Demand		0,05	kg PO4 / kg
Water	(unspecified)	DOC, Dissolved Organic Carbon		0,066	kg PO4 / kg
Water	(unspecified)	Kjeldahl-N		0,42	kg PO4 / kg
Air	(unspecified)	Nitrate	014797-55-8	0,1	kg PO4 / kg
Ground	(unspecified)	Nitrate	014797-55-8	0,1	kg PO4 / kg
Water	(unspecified)	Nitrate	014797-55-8	0,1	kg PO4 / kg
Ground	(unspecified)	Nitric acid	007697-37-2	0,093	kg PO4 / kg
Water	(unspecified)	Nitric acid	007697-37-2	0,093	kg PO4 / kg
Air	(unspecified)	Nitric acid	007697-37-2	0,093	kg PO4 / kg
Air	(unspecified)	Nitric oxide	010102-43-9	0,2	kg PO4 / kg
Water	(unspecified)	Nitrite	014797-65-0	0,13	kg PO4 / kg
Air	(unspecified)	Nitrite	014797-65-0	0,13	kg PO4 / kg
Water	(unspecified)	Nitrogen	007727-37-9	0,42	kg PO4 / kg
Air	(unspecified)	Nitrogen dioxide	010102-44-0	0,13	kg PO4 / kg
Air	(unspecified)	Nitrogen oxides	011104-93-1	0,13	kg PO4 / kg
Ground	(unspecified)	Nitrogen oxides	011104-93-1	0,13	kg PO4 / kg
Water	(unspecified)	Nitrogen oxides	011104-93-1	0,13	kg PO4 / kg
Ground	(unspecified)	Nitrogen, total		0,42	kg PO4 / kg
Water	(unspecified)	Nitrogen, total		0,42	kg PO4 / kg
Air	(unspecified)	Nitrogen, total		0,42	kg PO4 / kg
Ground	(unspecified)	Phosphate	014265-44-2	1	kg PO4 / kg
Air	(unspecified)	Phosphate	014265-44-2	1	kg PO4 / kg
Water	(unspecified)	Phosphate	014265-44-2	1	kg PO4 / kg
Ground	(unspecified)	Phosphoric acid	007664-38-2	0,97	kg PO4 / kg
Air	(unspecified)	Phosphoric acid	007664-38-2	0,97	kg PO4 / kg
Water	(unspecified)	Phosphoric acid	007664-38-2	0,97	kg PO4 / kg
Water	(unspecified)	Phosphorus	007723-14-0	3,06	kg PO4 / kg
Ground	(unspecified)	Phosphorus	007723-14-0	3,06	kg PO4 / kg
Air	(unspecified)	Phosphorus	007723-14-0	3,06	kg PO4 / kg
Ground	(unspecified)	Phosphorus pentoxide	001314-56-3	1,34	kg PO4 / kg
Water	(unspecified)	Phosphorus pentoxide	001314-56-3	1,34	kg PO4 / kg
Air	(unspecified)	Phosphorus pentoxide	001314-56-3	1,34	kg PO4 / kg
Ground	(unspecified)	Phosphorus, total		3,06	kg PO4 / kg
Water	(unspecified)	Phosphorus, total		3,06	kg PO4 / kg
Air	(unspecified)	Phosphorus, total		3,06	kg PO4 / kg

Water	(unspecified)	Suspended solids, inorganic		0,08	kg PO4 / kg
Water	(unspecified)	Suspended solids, unspecified		0,08	kg PO4 / kg
Water	(unspecified)	TOC, Total Organic Carbon		0,066	kg PO4 / kg
Impact category	heavy metals	kg Pb			
Water	(unspecified)	Antimony	007440-36-0	2	kg Pb / kg
Water	(unspecified)	Arsenic, ion	017428-41-0	1	kg Pb / kg
Water	(unspecified)	Barium	007440-39-3	0,014	kg Pb / kg
Water	(unspecified)	Boron	007440-42-8	0,03	kg Pb / kg
Air	(unspecified)	Cadmium	007440-43-9	50	kg Pb / kg
Air	(unspecified)	Cadmium oxide	001306-19-0	50	kg Pb / kg
Water	(unspecified)	Cadmium, ion	022537-48-0	3	kg Pb / kg
Water	(unspecified)	Chromium	007440-47-3	0,2	kg Pb / kg
Water	(unspecified)	Copper, ion	017493-86-6	0,005	kg Pb / kg
Air	(unspecified)	Heavy metals, unspecified		1	kg Pb / kg
Water	(unspecified)	Lead	007439-92-1	1	kg Pb / kg
Air	(unspecified)	Lead	007439-92-1	1	kg Pb / kg
Water	(unspecified)	Manganese	007439-96-5	0,02	kg Pb / kg
Air	(unspecified)	Manganese	007439-96-5	1	kg Pb / kg
Water	(unspecified)	Mercury	007439-97-6	10	kg Pb / kg
Air	(unspecified)	Mercury	007439-97-6	1	kg Pb / kg
				0,0022	
Water	(unspecified)	Metallic ions, unspecified		23	kg Pb / kg
				0,0386	
Air	(unspecified)	Metals, unspecified		7	kg Pb / kg
Water	(unspecified)	Molybdenum	007439-98-7	0,14	kg Pb / kg
Water	(unspecified)	Nickel, ion	014701-22-5	0,5	kg Pb / kg
Impact category	carcinogens	kg B(a)P			
				0,0002	
Air	(unspecified)	Acrylonitrile	000107-13-1	2	kg B(a)P / kg
Air	(unspecified)	Arsenic	007440-38-2	0,044	kg B(a)P / kg
				0,0000	
Air	(unspecified)	Benzene	000071-43-2	44	kg B(a)P / kg
				0,0000	
Air	(unspecified)	Benzene, ethyl-	000100-41-4	44	kg B(a)P / kg
Air	(unspecified)	Benzo(a)pyrene	000050-32-8	1	kg B(a)P / kg
Air	(unspecified)	Chromium VI	018540-29-9	0,44	kg B(a)P / kg
				0,0000	
Air	(unspecified)	Ethene, chloro-	000075-01-4	11	kg B(a)P / kg
Air	(unspecified)	Fluoranthene	000206-44-0	1	kg B(a)P / kg
				0,0000	
Air	(unspecified)	Hydrocarbons, aromatic		44	kg B(a)P / kg
				0,0001	
Air	(unspecified)	Metals, unspecified		79	kg B(a)P / kg
Air	(unspecified)	Nickel	007440-02-0	0,0044	kg B(a)P / kg
Air	(unspecified)	PAH, polycyclic aromatic hydrocarbons	130498-29-2	0,4792	kg B(a)P / kg
				0,0000	
Air	(unspecified)	Tar	008007-45-2	44	kg B(a)P / kg
Impact category	winter smog - P.M.	kg SPM			
Air	(unspecified)	Carbon black	001333-86-4	1	kg SPM / kg
Air	(unspecified)	Iron dust		1	kg SPM / kg
Air	(unspecified)	Particulates, < 10 um		1	kg SPM / kg
Air	(unspecified)	Particulates, < 10 um (mobile)		1	kg SPM / kg
Air	(unspecified)	Particulates, < 10 um (stationary)		1	kg SPM / kg
Air	(unspecified)	Particulates, < 2.5 um		1	kg SPM / kg
Air	(unspecified)	Particulates, > 2.5 um, and < 10um		1	kg SPM / kg
Air	(unspecified)	Particulates, diesel soot		1	kg SPM / kg
Air	(unspecified)	Particulates, SPM		1	kg SPM / kg
Air	(unspecified)	Soot		1	kg SPM / kg
Air	(unspecified)	Sulfur dioxide	007446-09-5	1	kg SPM / kg
Air	(unspecified)	Sulfur oxides		1	kg SPM / kg
Impact	summer smog	kg C2H4			

category	- VOCs				
Air	(unspecified)	2-Propanol	000067-63-0	0,196	kg C2H4 / kg
Air	(unspecified)	Acetaldehyde	000075-07-0	0,527	kg C2H4 / kg
Air	(unspecified)	Acetone	000067-64-1	0,178	kg C2H4 / kg
Air	(unspecified)	Acetonitrile	000075-05-8	0,416	kg C2H4 / kg
Air	(unspecified)	Acrolein	000107-02-8	0,603	kg C2H4 / kg
Air	(unspecified)	Acrylonitrile	000107-13-1	0,416	kg C2H4 / kg
Air	(unspecified)	Alcohols, unspecified		0,196	kg C2H4 / kg
Air	(unspecified)	Aldehydes, unspecified		0,443	kg C2H4 / kg
Air	(unspecified)	Benzaldehyde	000100-52-7	0,334	kg C2H4 / kg
Air	(unspecified)	Benzene	000071-43-2	0,189	kg C2H4 / kg
Air	(unspecified)	Benzene, ethyl-	000100-41-4	0,593	kg C2H4 / kg
Air	(unspecified)	Benzo(a)pyrene	000050-32-8	0,761	kg C2H4 / kg
Air	(unspecified)	Biphenyl	000092-52-4	0,761	kg C2H4 / kg
Air	(unspecified)	Biphenyl, hexachloro-	026601-64-9	0,761	kg C2H4 / kg
Air	(unspecified)	Butane	000106-97-8	0,41	kg C2H4 / kg
Air	(unspecified)	Butene	025167-67-3	0,992	kg C2H4 / kg
Air	(unspecified)	Caprolactam	000105-60-2	0,761	kg C2H4 / kg
Air	(unspecified)	Chloroform	000067-66-3	0,021	kg C2H4 / kg
Air	(unspecified)	Crude oil		0,398	kg C2H4 / kg
Air	(unspecified)	Diethyl ether	000060-29-7	0,398	kg C2H4 / kg
Air	(unspecified)	Ethane	000074-84-0	0,082	kg C2H4 / kg
Air	(unspecified)	Ethane, 1,1,1-trichloro-, HCFC-140	000071-55-6	0,021	kg C2H4 / kg
Air	(unspecified)	Ethane, 1,2-dichloro-	000107-06-2	0,021	kg C2H4 / kg
Air	(unspecified)	Ethanol	000064-17-5	0,268	kg C2H4 / kg
Air	(unspecified)	Ethene	000074-85-1	1	kg C2H4 / kg
Air	(unspecified)	Ethene, chloro-	000075-01-4	0,021	kg C2H4 / kg
Air	(unspecified)	Ethene, tetrachloro-	000127-18-4	0,005	kg C2H4 / kg
Air	(unspecified)	Ethene, trichloro-	000079-01-6	0,021	kg C2H4 / kg
Air	(unspecified)	Ethylene glycol	000107-21-1	0,196	kg C2H4 / kg
Air	(unspecified)	Ethylene oxide	000075-21-8	0,377	kg C2H4 / kg
Air	(unspecified)	Ethyne	000074-86-2	0,168	kg C2H4 / kg
Air	(unspecified)	Formaldehyde	000050-00-0	0,421	kg C2H4 / kg
Air	(unspecified)	Heptane	000142-82-5	0,529	kg C2H4 / kg
Air	(unspecified)	Hexane	000110-54-3	0,421	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aliphatic, alkanes, cyclic		0,398	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aliphatic, alkanes, unspecified		0,398	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aliphatic, alkenes, unspecified		0,906	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aliphatic, unsaturated		0,398	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aromatic		0,761	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, chlorinated		0,021	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, halogenated		0,021	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, unspecified		0,398	kg C2H4 / kg
Air	(unspecified)	Hydroxy compounds, unspecified		0,377	kg C2H4 / kg
Air	(unspecified)	Kerosene	064742-81-0	0,398	kg C2H4 / kg
Air	(unspecified)	Ketones, unspecified		0,326	kg C2H4 / kg
Air	(unspecified)	Methane	000074-82-8	0,007	kg C2H4 / kg
Air	(unspecified)	Methane, biogenic	000074-82-8	0,007	kg C2H4 / kg
Air	(unspecified)	Methane, dichloro-, HCC-30	000075-09-2	0,021	kg C2H4 / kg
Air	(unspecified)	Methane, fossil	000074-82-8	0,007	kg C2H4 / kg
Air	(unspecified)	Methane, tetrachloro-, CFC-10	000056-23-5	0,021	kg C2H4 / kg
Air	(unspecified)	Methanol	000067-56-1	0,123	kg C2H4 / kg
Air	(unspecified)	Methyl ethyl ketone	000078-93-3	0,473	kg C2H4 / kg
Air	(unspecified)	Methyl mercaptan	000074-93-1	0,377	kg C2H4 / kg
Air	(unspecified)	Naphthalene	000091-20-3	0,761	kg C2H4 / kg
Air	(unspecified)	NMVOC, non-methane volatile organic compounds, unspecified origin		0,416 0,0493	kg C2H4 / kg
Air	(unspecified)	PAH, polycyclic aromatic hydrocarbons	130498-29-2	2	kg C2H4 / kg
Air	(unspecified)	Pentane	000109-66-0	0,408	kg C2H4 / kg
Air	(unspecified)	Petrol	008006-61-9	0,398	kg C2H4 / kg
Air	(unspecified)	Phenol	000108-95-2	0,761	kg C2H4 / kg
Air	(unspecified)	Phenol, chloro-	025167-80-0	0,021	kg C2H4 / kg
Air	(unspecified)	Phenol, pentachloro-	000087-86-5	0,021	kg C2H4 / kg
Air	(unspecified)	Phthalic anhydride	000085-44-9	0,761	kg C2H4 / kg
Air	(unspecified)	Propane	000074-98-6	0,42	kg C2H4 / kg
Air	(unspecified)	Propene	000115-07-1	1,03	kg C2H4 / kg
Air	(unspecified)	Propionic acid	000079-09-4	0,377	kg C2H4 / kg

Air	(unspecified)	Styrene	000100-42-5	0,761	kg C2H4 / kg
Air	(unspecified)	Tar	008007-45-2	0,416	kg C2H4 / kg
Air	(unspecified)	Terpentine		0,377	kg C2H4 / kg
Air	(unspecified)	Toluene	000108-88-3	0,563	kg C2H4 / kg
Air	(unspecified)	Vinyl acetate	000108-05-4	0,223	kg C2H4 / kg
Air	(unspecified)	VOC, volatile organic compounds		0,398	kg C2H4 / kg
Impact category	pesticides	kg act.subst			
Water	(unspecified)	2,4-D	000094-75-7	1	kg act.subst/kg
Water	(unspecified)	2,4,5-T	000093-76-5	1	kg act.subst / kg
Water	(unspecified)	Acephate	030560-19-1	1	kg act.subst / kg
Water	(unspecified)	Aldicarb	000116-06-3	1	kg act.subst / kg
Water	(unspecified)	Aldrin	000309-00-2	1	kg act.subst / kg
Water	(unspecified)	Anilazine	000101-05-3	1	kg act.subst / kg
Water	(unspecified)	Atrazine	001912-24-9	1	kg act.subst / kg
Water	(unspecified)	Azinphos-ethyl	002642-71-9	1	kg act.subst / kg
Water	(unspecified)	Azinphos-methyl	000086-50-0	1	kg act.subst / kg
Water	(unspecified)	Benomyl	017804-35-2	1	kg act.subst / kg
Water	(unspecified)	Bentazone	025057-89-0	1	kg act.subst / kg
Water	(unspecified)	Bifenthrin	082657-04-3	1	kg act.subst / kg
Water	(unspecified)	Bis(2-chloroethyl)ether	000111-44-4	1	kg act.subst / kg
Water	(unspecified)	Bis(chloromethyl)ether	000542-88-1	1	kg act.subst / kg
Water	(unspecified)	Captafol	002939-80-2	1	kg act.subst / kg
Water	(unspecified)	Captan	000133-06-2	1	kg act.subst / kg
Water	(unspecified)	Carbaryl	000063-25-2	1	kg act.subst / kg
Water	(unspecified)	Carbendazim	010605-21-7	1	kg act.subst / kg
Water	(unspecified)	Carbofuran	001563-66-2	1	kg act.subst / kg
Water	(unspecified)	Chlordane	012789-03-6	1	kg act.subst / kg
Water	(unspecified)	Chlorfenvinphos	000470-90-6	1	kg act.subst / kg
Water	(unspecified)	Chloridazon	001698-60-8	1	kg act.subst / kg
Water	(unspecified)	Chlorothalonil	001897-45-6	1	kg act.subst / kg
Water	(unspecified)	Chlorpropham	000101-21-3	1	kg act.subst / kg
Water	(unspecified)	Chlorpyrifos	002921-88-2	1	kg act.subst / kg
Water	(unspecified)	Coumafos	000056-72-4	1	kg act.subst / kg
Water	(unspecified)	Cyanazine	021725-46-2	1	kg act.subst / kg
Water	(unspecified)	Cypermethrin	052315-07-8	1	kg act.subst / kg
Water	(unspecified)	Cyromazine	066215-27-8	1	kg act.subst / kg
Water	(unspecified)	DDT	000050-29-3	1	kg act.subst / kg
Water	(unspecified)	Deltamethrin	052918-63-5	1	kg act.subst / kg
Water	(unspecified)	Demeton	008065-48-3	1	kg act.subst / kg
Water	(unspecified)	Desmetryn	001014-69-3	1	kg act.subst / kg
Water	(unspecified)	Diazinon	000333-41-5	1	kg act.subst / kg
Water	(unspecified)	Dichlorprop	000120-36-5	1	kg act.subst / kg
Water	(unspecified)	Dichlorvos	000062-73-7	1	kg act.subst / kg
Water	(unspecified)	Dieldrin	000060-57-1	1	kg act.subst / kg
Water	(unspecified)	Dimethoate	000060-51-5	1	kg act.subst / kg
Water	(unspecified)	Dinoseb	000088-85-7	1	kg act.subst / kg
Water	(unspecified)	Dinoterb	001420-07-1	1	kg act.subst / kg
Water	(unspecified)	Diquat dibromide	000085-00-7	1	kg act.subst / kg
Water	(unspecified)	Disinfectants, unspecified		1	kg act.subst / kg
Water	(unspecified)	Disulfothon	000298-04-4	1	kg act.subst / kg
Water	(unspecified)	Diuron	000330-54-1	1	kg act.subst / kg
Water	(unspecified)	DNOC	000534-52-1	1	kg act.subst / kg
Water	(unspecified)	Endosulfan	000115-29-7	1	kg act.subst / kg
Water	(unspecified)	Endrin	000072-20-8	1	kg act.subst / kg
Water	(unspecified)	Ethoprop	013194-48-4	1	kg act.subst / kg
Water	(unspecified)	Fenitrothion	000122-14-5	1	kg act.subst / kg
Water	(unspecified)	Fenthion	000055-38-9	1	kg act.subst / kg
Water	(unspecified)	Fentin acetate	000900-95-8	1	kg act.subst / kg
Water	(unspecified)	Fentin chloride	000639-58-7	1	kg act.subst / kg
Water	(unspecified)	Fentin hydroxide	000076-87-9	1	kg act.subst / kg
Water	(unspecified)	Folpet	000133-07-3	1	kg act.subst / kg
Water	(unspecified)	Fungicides, unspecified		1	kg act.subst / kg
Water	(unspecified)	Glyphosate	001071-83-6	1	kg act.subst / kg
Water	(unspecified)	Heptachlor	000076-44-8	1	kg act.subst / kg
Water	(unspecified)	Heptenophos	023560-59-0	1	kg act.subst / kg
Water	(unspecified)	Herbicides, unspecified		1	kg act.subst / kg

Water	(unspecified)	Insecticides, unspecified		1	kg act.subst / kg
Water	(unspecified)	Iprodione	036734-19-7	1	kg act.subst / kg
Water	(unspecified)	Isoproturon	034123-59-6	1	kg act.subst / kg
Water	(unspecified)	Lindane	000058-89-9	1	kg act.subst / kg
Water	(unspecified)	Lindane, alpha-	000319-84-6	1	kg act.subst / kg
Water	(unspecified)	Lindane, beta-	000319-85-7	1	kg act.subst / kg
Water	(unspecified)	Linuron	000330-55-2	1	kg act.subst / kg
Water	(unspecified)	Malathion	000121-75-5	1	kg act.subst / kg
Water	(unspecified)	Maneb	012427-38-2	1	kg act.subst / kg
Water	(unspecified)	MCPA	000094-74-6	1	kg act.subst / kg
Water	(unspecified)	Mecoprop	000093-65-2	1	kg act.subst / kg
Water	(unspecified)	Metamitron	041394-05-2	1	kg act.subst / kg
Water	(unspecified)	Metazachlor	067129-08-2	1	kg act.subst / kg
Water	(unspecified)	Methabenzthiazuron	018691-97-9	1	kg act.subst / kg
Water	(unspecified)	Methomyl	016752-77-5	1	kg act.subst / kg
Water	(unspecified)	Metobromuron	003060-89-7	1	kg act.subst / kg
Water	(unspecified)	Metolachlor	051218-45-2	1	kg act.subst / kg
Water	(unspecified)	Metribuzin	021087-64-9	1	kg act.subst / kg
Water	(unspecified)	Mevinfos	007786-34-7	1	kg act.subst / kg
Water	(unspecified)	Monolinuron	001746-81-2	1	kg act.subst / kg
Water	(unspecified)	Oxamyl	023135-22-0	1	kg act.subst / kg
Water	(unspecified)	Oxydemethon methyl	000301-12-2	1	kg act.subst / kg
Water	(unspecified)	Parathion	000056-38-2	1	kg act.subst / kg
Water	(unspecified)	Parathion, methyl	000298-00-0	1	kg act.subst / kg
Water	(unspecified)	Permethrin	052645-53-1	1	kg act.subst / kg
Water	(unspecified)	Pesticides, unspecified		1	kg act.subst / kg
Water	(unspecified)	Phoxim	014816-18-3	1	kg act.subst / kg
Water	(unspecified)	Pirimicarb	023103-98-2	1	kg act.subst / kg
Water	(unspecified)	Propachlor	001918-16-7	1	kg act.subst / kg
Water	(unspecified)	Propoxur	000114-26-1	1	kg act.subst / kg
Water	(unspecified)	Pyrazophos	013457-18-6	1	kg act.subst / kg
Water	(unspecified)	Simazine	000122-34-9	1	kg act.subst / kg
Water	(unspecified)	Thiram	000137-26-8	1	kg act.subst / kg
Water	(unspecified)	Tolclophos-methyl	057018-04-9	1	kg act.subst / kg
Water	(unspecified)	Triallate	002303-17-5	1	kg act.subst / kg
Water	(unspecified)	Triazofos	024017-47-8	1	kg act.subst / kg
Water	(unspecified)	Trichlorfon	000052-68-6	1	kg act.subst / kg
Water	(unspecified)	Trifluralin	001582-09-8	1	kg act.subst / kg
Water	(unspecified)	Zineb	012122-67-7	1	kg act.subst / kg
Impact category	energy resources	MJ LHV			
Prima	(unspecified)	Biomass, feedstock		1	MJ LHV / MJ
Prima	(unspecified)	Coal, 18 MJ per kg, in ground		18	MJ LHV / kg
Prima	(unspecified)	Coal, 26.4 MJ per kg, in ground		26,4	MJ LHV / kg
Prima	(unspecified)	Coal, 29.3 MJ per kg, in ground		29,3	MJ LHV / kg
Prima	(unspecified)	Coal, brown, 10 MJ per kg, in ground		10	MJ LHV / kg
Prima	(unspecified)	Coal, brown, 8 MJ per kg, in ground		8	MJ LHV / kg
Prima	(unspecified)	Coal, brown, in ground		10	MJ LHV / kg
Prima	(unspecified)	Coal, feedstock, 26.4 MJ per kg, in ground		26,4	MJ LHV / kg
Prima	(unspecified)	Coal, hard, unspecified, in ground		19,1	MJ LHV / kg
Prima	(unspecified)	Energy, from biomass		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from coal		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from coal, brown		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from gas, natural		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from hydro power		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from hydrogen		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from oil		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from peat		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from sulfur		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from uranium		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from wood		1	MJ LHV / MJ
Prima	(unspecified)	Energy, geothermal		1	MJ LHV / MJ
Prima	(unspecified)	Energy, gross calorific value, in biomass		1	MJ LHV / MJ
Prima	(unspecified)	Energy, kinetic, flow, in wind		1	MJ LHV / MJ
Prima	(unspecified)	Energy, potential, stock, in barrage water		1	MJ LHV / MJ
Prima	(unspecified)	Energy, recovered		1	MJ LHV / MJ
Prima	(unspecified)	Energy, solar		1	MJ LHV / MJ

Prima	(unspecified)	Energy, unspecified		1	MJ LHV / MJ
Prima	(unspecified)	Gas, mine, off-gas, process, coal mining/kg	008006-14-2	49,8	MJ LHV / kg
Prima	(unspecified)	Gas, mine, off-gas, process, coal mining/m3	008006-14-2	39,8	MJ LHV / m3
Prima	(unspecified)	Gas, natural, 30.3 MJ per kg, in ground	008006-14-2	30,3	MJ LHV / kg
Prima	(unspecified)	Gas, natural, 35 MJ per m3, in ground	008006-14-2	35	MJ LHV / m3
Prima	(unspecified)	Gas, natural, 36.6 MJ per m3, in ground	008006-14-2	36,6	MJ LHV / m3
Prima	(unspecified)	Gas, natural, 46.8 MJ per kg, in ground	008006-14-2	46,8	MJ LHV / kg
Prima	(unspecified)	Gas, natural, feedstock, 35 MJ per m3, in ground	008006-14-2	35	MJ LHV / m3
Prima	(unspecified)	Gas, natural, feedstock, 46.8 MJ per kg, in ground	008006-14-2	46,8	MJ LHV / kg
Prima	(unspecified)	Gas, natural, in ground	008006-14-2	38,3	MJ LHV / m3
Prima	(unspecified)	Gas, off-gas, oil production, in ground	008006-14-2	40,9	MJ LHV / m3
Prima	(unspecified)	Gas, petroleum, 35 MJ per m3, in ground		35	MJ LHV / m3
Prima	(unspecified)	Methane	000074-82-8	35,9	MJ LHV / kg
Prima	(unspecified)	Oil, crude, 38400 MJ per m3, in ground		38400	MJ LHV / m3
Prima	(unspecified)	Oil, crude, 41 MJ per kg, in ground		41	MJ LHV / kg
Prima	(unspecified)	Oil, crude, 42 MJ per kg, in ground		42	MJ LHV / kg
Prima	(unspecified)	Oil, crude, 42.6 MJ per kg, in ground		42,6	MJ LHV / kg
Prima	(unspecified)	Oil, crude, 42.7 MJ per kg, in ground		42,7	MJ LHV / kg
Prima	(unspecified)	Oil, crude, feedstock, 41 MJ per kg, in ground		41	MJ LHV / kg
Prima	(unspecified)	Oil, crude, feedstock, 42 MJ per kg, in ground		42	MJ LHV / kg
Prima	(unspecified)	Oil, crude, in ground		45,8	MJ LHV / kg
Prima	(unspecified)	Peat, in ground		13	MJ LHV / kg
Prima	(unspecified)	Steam from waste incineration		1	MJ LHV / MJ
Prima	(unspecified)	Uranium ore, 1.11 GJ per kg, in ground		1110	MJ LHV / kg
				229100	
Prima	(unspecified)	Uranium, 2291 GJ per kg, in ground	007440-61-1	0	MJ LHV / kg
Prima	(unspecified)	Uranium, 451 GJ per kg, in ground	007440-61-1	451000	MJ LHV / kg
Prima	(unspecified)	Uranium, 560 GJ per kg, in ground	007440-61-1	560000	MJ LHV / kg
Prima	(unspecified)	Uranium, in ground	007440-61-1	560000	MJ LHV / kg
Prima	(unspecified)	Water, barrage		0,01	MJ LHV / kg
Prima	(unspecified)	Wood and wood waste, 9.5 MJ per kg		9,5	MJ LHV / kg
Prima	(unspecified)	Wood, feedstock		15,3	MJ LHV / kg
Prima	(unspecified)	Wood, unspecified, standing/kg		15,3	MJ LHV / kg
Impact category	solid waste	kg			
Waste	(unspecified)	Aluminium waste		1	kg / kg
Waste	(unspecified)	Asbestos		1	kg / kg
Waste	(unspecified)	Asphalt waste		1	kg / kg
Waste	(unspecified)	Bilge oil		1	kg / kg
Waste	(unspecified)	Bitumen waste		1	kg / kg
Waste	(unspecified)	Bulk waste, unspecified		1	kg / kg
Waste	(unspecified)	Calcium fluoride waste		1	kg / kg
Waste	(unspecified)	Cardboard waste		1	kg / kg
Waste	(unspecified)	Carton waste		1	kg / kg
Waste	(unspecified)	Catalyst waste		1	kg / kg
Waste	(unspecified)	Cathode iron ingots waste		1	kg / kg
Waste	(unspecified)	Cathode loss		1	kg / kg
Waste	(unspecified)	Chemical waste, inert		1	kg / kg
Waste	(unspecified)	Chemical waste, regulated		1	kg / kg
Waste	(unspecified)	Chemical waste, unspecified		1	kg / kg
Waste	(unspecified)	Chromium waste		1	kg / kg
Waste	(unspecified)	Coal ash		1	kg / kg
Waste	(unspecified)	Coal tailings		1	kg / kg
Waste	(unspecified)	Construction waste		1	kg / kg
Waste	(unspecified)	Copper absorbent waste		1	kg / kg
Waste	(unspecified)	Copper waste		1	kg / kg
Waste	(unspecified)	Dross		1	kg / kg
Waste	(unspecified)	Dross for recycling		1	kg / kg
Waste	(unspecified)	Dust, break-out		1	kg / kg
Waste	(unspecified)	Dust, unspecified		1	kg / kg
Waste	(unspecified)	E-saving bulb plastic waste		1	kg / kg
Waste	(unspecified)	E-saving bulb waste		1	kg / kg
Waste	(unspecified)	Electronic waste		1	kg / kg
Waste	(unspecified)	Electrostatic filter dust		1	kg / kg
Waste	(unspecified)	Fluoride waste		1	kg / kg
Waste	(unspecified)	Fly ash		1	kg / kg
Waste	(unspecified)	Gas pipe waste		1	kg / kg

Waste	(unspecified)	Glass waste		1	kg / kg
Waste	(unspecified)	Ion exchanger sludge		1	kg / kg
Waste	(unspecified)	Iron waste		1	kg / kg
Waste	(unspecified)	Light bulb waste		1	kg / kg
Waste	(unspecified)	Limestone waste		1	kg / kg
Waste	(unspecified)	Metal waste		1	kg / kg
Waste	(unspecified)	Mineral waste		1	kg / kg
Waste	(unspecified)	Mineral waste, from mining		1	kg / kg
Waste	(unspecified)	Mineral wool waste		1	kg / kg
Waste	(unspecified)	Oil separator sludge		1	kg / kg
Waste	(unspecified)	Oil waste		1	kg / kg
Waste	(unspecified)	Packaging waste, paper and board		1	kg / kg
Waste	(unspecified)	Packaging waste, plastic		1	kg / kg
Waste	(unspecified)	Packaging waste, steel		1	kg / kg
Waste	(unspecified)	Packaging waste, unspecified		1	kg / kg
Waste	(unspecified)	Packaging waste, wood		1	kg / kg
Waste	(unspecified)	Paint waste		1	kg / kg
Waste	(unspecified)	Photovoltaic cell waste		1	kg / kg
Waste	(unspecified)	Photovoltaic panel waste		1	kg / kg
Waste	(unspecified)	Photovoltaic production waste		1	kg / kg
Waste	(unspecified)	Photovoltaic/EVA cell waste		1	kg / kg
Waste	(unspecified)	Plastic waste		1	kg / kg
Waste	(unspecified)	Polyethylene waste		1	kg / kg
Waste	(unspecified)	Polystyrene waste		1	kg / kg
Waste	(unspecified)	Polyvinyl chloride waste		1	kg / kg
Waste	(unspecified)	Printed circuitboards waste		1	kg / kg
Waste	(unspecified)	Process waste		1	kg / kg
Waste	(unspecified)	Production waste		1	kg / kg
Waste	(unspecified)	Production waste, not inert		1	kg / kg
Waste	(unspecified)	Propylene glycol waste		1	kg / kg
Waste	(unspecified)	Refinery sludge		1	kg / kg
Waste	(unspecified)	Rejects		1	kg / kg
Waste	(unspecified)	Rejects, corrugated cardboard		1	kg / kg
Waste	(unspecified)	Residues		1	kg / kg
Waste	(unspecified)	Slags		1	kg / kg
Waste	(unspecified)	Slags and ashes		1	kg / kg
Waste	(unspecified)	Sludge		1	kg / kg
Waste	(unspecified)	Soot		1	kg / kg
Waste	(unspecified)	Steel waste		1	kg / kg
Waste	(unspecified)	Stones and rubble		1	kg / kg
Waste	(unspecified)	Tin waste		1	kg / kg
Waste	(unspecified)	Tinder from rolling drum		1	kg / kg
Waste	(unspecified)	Waste in bioactive landfill		1	kg / kg
Waste	(unspecified)	Waste in incineration		1	kg / kg
Waste	(unspecified)	Waste in inert landfill		1	kg / kg
Waste	(unspecified)	Waste to recycling		1	kg / kg
Waste	(unspecified)	Waste, final, inert		1	kg / kg
Waste	(unspecified)	Waste, from drilling, unspecified		1	kg / kg
Waste	(unspecified)	Waste, from incinerator		1	kg / kg
Waste	(unspecified)	Waste, industrial		1	kg / kg
Waste	(unspecified)	Waste, inorganic		1	kg / kg
Waste	(unspecified)	Waste, nuclear, unspecified/kg		1	kg / kg
Waste	(unspecified)	Waste, solid		1	kg / kg
Waste	(unspecified)	Waste, toxic		1	kg / kg
Waste	(unspecified)	Waste, unspecified		1	kg / kg
Waste	(unspecified)	Welding dust		1	kg / kg
Waste	(unspecified)	Wood ashes		1	kg / kg
Waste	(unspecified)	Wood waste		1	kg / kg
Waste	(unspecified)	Wood, sawdust		1	kg / kg
Waste	(unspecified)	Zeolite waste		1	kg / kg
Waste	(unspecified)	Zinc waste		1	kg / kg
Impact category	Heavy metals (air)	kg Ni eq			
Air	(unspecified)	Arsenic	007440-38-2	3,33	kg Ni eq / kg
Air	(unspecified)	Cadmium	007440-43-9	5	kg Ni eq / kg
Air	(unspecified)	Chromium	007440-47-3	0,5	kg Ni eq / kg
Air	(unspecified)	Chromium-51	014392-02-0	0,5	kg Ni eq / kBq

Air	(unspecified)	Chromium VI	018540-29-9	0,5	kg Ni eq / kg
Air	(unspecified)	Copper	007440-50-8	0,5	kg Ni eq / kg
Air	(unspecified)	Lead	007439-92-1	0,04	kg Ni eq / kg
Air	(unspecified)	Mercury	007439-97-6	5	kg Ni eq / kg
Air	(unspecified)	Nickel	007440-02-0	1	kg Ni eq / kg
Air	(unspecified)	Zinc	007440-66-6	0,04	kg Ni eq / kg
Impact category	PAHs (air)	kg PAH/20 eq			
				0,0000	
Air	(unspecified)	Carbon monoxide	000630-08-0	02	kg PAH/20eq/ kg
Air	(unspecified)	Hydrocarbons, aromatic, naphthalenes, C13, trisubstituted		20	kg PAH/20eq/ kg
Air	(unspecified)	Hydrocarbons, aromatic, styrenes, C10		20	kg PAH/20eq/ kg
Air	(unspecified)	Hydrocarbons, aromatic, styrenes, C9		20	kg PAH/20eq/ kg
Air	(unspecified)	Polycyclic organic matter, as 15-PAH		20	kg PAH/20eq/ kg
Air	(unspecified)	Polycyclic organic matter, as 7-PAH		20	kg PAH/20eq/ kg
Air	(unspecified)	Polycyclic organic matter, unspecified		20	kg PAH/20eq/ kg
Impact category	Heavy metals (water)	kg Hg/20 eq			
Water	(unspecified)	Arsenic, ion	017428-41-0	3	kg Hg/20 eq / kg
Water	(unspecified)	Cadmium, ion	022537-48-0	7	kg Hg/20 eq / kg
Water	(unspecified)	Chromium	007440-47-3	0,4	kg Hg/20 eq / kg
Water	(unspecified)	Copper, ion	017493-86-6	2,8	kg Hg/20 eq / kg
Water	(unspecified)	Lead	007439-92-1	0,5	kg Hg/20 eq / kg
Water	(unspecified)	Mercury	007439-97-6	20	kg Hg/20 eq / kg
Water	(unspecified)	Nickel	007440-02-0	7	kg Hg/20 eq / kg
Water	(unspecified)	Zinc	007440-66-6	0,2	kg Hg/20 eq / kg
Water	(unspecified)	Zinc, ion	023713-49-7	0,2	kg Hg/20 eq / kg
Impact category	POP (air)	kg TE eq			
Air	(unspecified)	Dioxin, 1,2,3,7,8,9-hexachlorodibenzo-	019408-74-3	0,1	kg TE eq / kg
Air	(unspecified)	Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin		1	kg TE eq / kg
Air	(unspecified)	Furan	000110-00-9	0,1	kg TE eq / kg
Impact category	POP (water)	kg TE eq			
Water	(unspecified)	Dioxin, 1,2,3,7,8,9-hexachlorodibenzo-	019408-74-3	0,1	kg TE eq / kg
Water	(unspecified)	Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin		1	kg TE eq / kg
Water	(unspecified)	Furan	000110-00-9	0,1	kg TE eq / kg
Normalisation-Weighting set	Europe g				
Normalisation					
greenhouse	7,42E-05				
ozone layer	1,24				
acidification	0,00888				
eutrophication	0,0262				
heavy metals	17,8				
carcinogens	106				
winter smog - P.M.	0,0106				
summer smog - VOCs	0,0507				
pesticides	1,21				
energy resources	6,29E-06				
solid waste	0				
Heavy metals (air)	0				
PAHs (air)	0				
Heavy metals (water)	0				

POP (air)	0				
POP (water)	0				
Pesa					
greenhouse	2,5				
ozone layer	100				
acidification	10				
eutrophicatio n	5				
heavy metals	5				
carcinogens	10				
winter smog - P.M.	5				
summer smog - VOCs	2,5				
pesticides	25				
energy resources	0				
solid waste	0				
Heavy metals (air)	0				
PAHs (air)	0				
Heavy metals (water)	0				
POP (air)	0				
POP (water)	0				
Normalisatio n-Weighting set	Europe e				
Normalisatio n					
greenhouse	7,65E-05				
ozone layer	1,08				
acidification	0,00888				
eutrophicatio n	0,0262				
heavy metals	18,4				
carcinogens	92				
winter smog - P.M.	0,0106				
summer smog - VOCs	0,0558				
pesticides	1,04				
energy resources	6,29E-06				
solid waste	0				
Heavy metals (air)	18,4				
PAHs (air)	92				
Heavy metals (water)	18,4				
POP (air)	0				
POP (water)	0				
Pesa					
greenhouse	2,5				
ozone layer	100				
acidification	10				
eutrophicatio n	5				
heavy metals	5				
carcinogens	10				
winter smog - P.M.	5				
summer smog - VOCs	2,5				

pesticides	25				
energy resources	0				
solid waste	0				
Heavy metals (air)	5				
PAHs (air)	10				
Heavy metals (water)	5				
POP (air)	0				
POP (water)	0				

B.1.5 SimaPro vs. EuP-Ecoreport output

According to "MEUUP Report" by R. Kemna on methodology used in sw EuP-Ecoreport set up, it was possible to have SimaPro outputs in compliance with EuP ones (MEEuP Methodology Report, Final, table 25 and Eco-indicator 95 - rev EuP V2.03).

In 8.4 Eco-indicator 95 - rev EuP V2.03 methodology was fully reported, while in the following table the main indicators used for Simapro outputs, in compliance with EuP- Ecoreport outputs, were reported.

Table B.17: Output indicators in Ecoindicator95-rev EuP method

Eco-indicator 95 - rev EuP V2.03 (Revised by Laura Cutaia)

Environmental impact	Unit
greenhouse	kg CO2
ozone layer	kg CFC11
acidification	kg SO2
eutrophication	kg PO4
heavy metals	kg Pb
carcinogens	kg B(a)P
winter smog - P.M.	kg SPM
summer smog - VOCs	kg C2H4
pesticides	kg act.subst
energy resources	MJ LHV
solid waste	kg
Heavy metals (air)	kg Ni eq
PAHs (air)	kg PAH/20 eq
Heavy metals (water)	kg Hg/20 eq
POP (air)	kg TE eq
POP (water)	kg TE eq

Hereinafter outputs from LCA of DW12 ps and WM 5 kgs have been reported, using SimaPro sw and revised Ecoindicator 95 methodology explained before.

In summary using SimaPro it was possible:
- to use quite all inventory data from producers (BOM) ;
- to use data input in the software in compliance with that available by producers (SimaPro data base contains many more data than EuP and makes possible the "simulation" of new record with new "components" or "materials" – as for detergents and washing agents according to data from producers) ;

- to have compliance between outputs from characterization phase of Eco-Indicator 95 (one of the most used methodology in impact assessment) and EuP-Ecoreport outputs, according to the "chracterisation factors" used in this method (MEEuP by R. Kemna). See the following figure.

Figure B.1: MEEuP Report – Summary of MEEUP weighting factors used to adapting Ecoindicator 95 to EuP-Ecoreport evaluating method

Table 25. Summary MEEUP weighting factors

GHG emissions (air)	CO_2	CO	N_2O	CH_4	CF_4	C_2F_6	SF_6	R134a	other
weighting → CO_2 eq. GWP-100	**1**	**1.57**	**296**	**21**	**6500**	**9200**	**22200**	**1300**	**IPCC**

Acidification emissions (air)	SO_X	NO_X	N_2O	NH_3	HF	HCl	H_2S	H_2SO_4
AP weighting → SO_2 equivalent	**1**	**0.7**	**1.78**	**1.88**	**1.6**	**0.88**	**1.88**	**0.65**

Heavy Metals (air)	Cd	Hg	As	HMU	Ni	Cr	Cu	Pb	Zn	MU
HM weighting -> Ni eq.	**5**	**5**	**3.33**	**2**	**1**	**0.5**	**0.5**	**0.04**	**0.04**	**0.01**

PAHs (air)	PAHs	C6H6	CO
HM weighting -> Ni eq.	**20**	**0.004**	**0.000002**

MU= Metals Unspecified
HMU= Heavy Metals Unspecified. *=preliminary factors

Heavy Metals (water)	Hg	Cd	Ni*	As	HMU	Cu*	Pb*	Cr	Zn
HM Weighting factor → Hg/20 eq.	**20**	**7**	**7**	**3**	**3**	**2.8**	**0.5**	**0.4**	**0.2**

Eutrophication (water)	P	P_2O_5	PO_4	N	NH_4+	NO_3-	BOD	Suspended Solids	DOC	TOC	COD
EP weighting → PO_4 equivalent	**3.07**	**1.34**	**1**	**0.42**	**0.33**	**0.1**	**0.11**	**0.08**	**0.066**	**0.066**	**0.05**

EC Directives and official EU references with threshold and conversion values from which the weighting factors are derived: *IPCC* (GWP), *EC 850/2004* (POP), *2001/81/EC* (SO_X, NO_X, NH_3, VOC), *1999/30/EC* (SO_2, NO_X, PM and Pb), *2000/69/EC* (aromatics, CO), *COM(2003)423* (As, Cd, Hg, Ni, PAHs), *1999/13/EC* & 2002/3/EC (VOC), *EC 2037/2000* (ODP), *91/271/EC & 98/15/EEC* (BOD, COD, P, N, susp. Solids to water), *76/464/EEC* (Metals etc. to water).

In any case in SimaPro it was not possibile to "simulate" distribution phase for final products, for lack of data from producers or from other sources; on the countrary in EuP-Ecoreport simulation of impacts due to distribution is considered by an "internal system".

B.1.5.1 12 place settings dishwasher

In the following table outputs for DW12 ps have been reported. In ored to compare it with that from EuP-Ecoreport outputs it has to be underlined:

- "DW12ps assembling" in Simapro corresponds to "Production total" in EuP; "assembling" for Simapro includes materials production, transport, forming and assembling also if these items have been calculated separately as in the outputs in 8.6;
- "Electricity LV use UCPTE U"+ "Delivery van (<3.5t) B250" + "DW12 ps Use consumables (per LC)" corresponds to "Use" in EuP;
- "DW12 EoL" corresponds to "End of Life".

According to the methodology explained and on the correspondence of the outputs (as in the first row - Row in EuP-Ecoreport) it has been possibile to make comparable SimaPro and EuP-Ecoreport outputs.
Main results are in the following table (LCA output by SimaPro according to Ecoindicator 95).

Table B.18: DW12 ps – LCA output (Ecoindicator95-rev EuP method)

Row in	Impact category	Unit	Total	DW12ps	Electricity	Delivery	DW12	DW12 ps

EuP-Ecoreport				assembling	LV use UCPTE U	van (<3.5t) B250	EoL	Use consumables (per LC)
14	greenhouse	kg CO2	2.318,08	202,89	1.756,35	4,68	-39,90	394,06
15	ozone layer	kg CFC11	0,00	0,00	0,00	0,00	-0,00	0,00
16	acidification	kg SO2	19,83	3,11	12,80	0,02	-0,14	4,04
22	eutrophication	kg PO4	2,68	0,24	0,43	0,00	-0,01	2,02
	heavy metals	kg Pb	0,03	0,00	0,01	0,00	-0,00	0,01
	carcinogens	kg B(a)P	0,00	0,00	0,00	0,00	-0,00	0,00
20	winter smog - P.M.	kg SPM	17,01	2,74	10,73	0,01	-0,08	3,62
17	summer smog - VOCs	kg C2H4	0,62	0,17	0,39	0,01	-0,03	0,08
	pesticides	kg act.subst	0,04	0,04	0,00	0,00	0,00	0,00
8	energy resources	MJ LHV	51.242,25	4.502,73	41.615,08	59,86	-562,20	5.626,78
12 (+13)	solid waste	kg	106,10	96,18	50,00	0,00	-40,08	0,00
19	Heavy metals (air)	kg Ni eq	0,01	0,00	0,00	0,00	-0,00	0,00
19,1	PAHs (air)	kg PAH/20 eq	0,00	0,00	0,00	0,00	-0,00	0,00
21	Heavy metals (water)	kg Hg/20 eq	0,06	0,00	0,02	0,00	-0,00	0,04
18	POP (air)	kg TE eq	0,00	0,00	0,00	0,00	0,00	0,00
23	POP (water)	kg TE eq	0,00	0,00	0,00	0,00	0,00	0,00

In the following table the same LCA output by SimaPro according to Ecoindicator 95 revised accordingly to EuP-Ecoreports outputs has been reported.

Table B.19: DW12 ps – LCA output (Ecoindicator95-rev EuP method) adapted to them of EuP-Ecoreport

Row in EuP-Ecoreport	Impact category	Unit	DW12ps assembling - Production total	USE	DW12 EoL	Total
8	energy resources	MJ LHV	4.502,73	47.301,72	-562,20	51.242,25
12 (+13)	solid waste	kg	96,18	50,00	-40,08	106,10
14	greenhouse	kg CO2	202,89	2.155,09	-39,90	2.318,08
15	ozone layer	kg CFC11	0,00	0,00	-0,00	0,00
16	acidification	kg SO2	3,11	16,85	-0,14	19,83
17	summer smog - VOCs	kg C2H4	0,17	0,49	-0,03	0,62
18	POP (air)	kg TE eq	0,00	0,00	0,00	0,00
19	Heavy metals (air)	kg Ni eq	0,00	0,00	-0,00	0,01
19,1	PAHs (air)	kg PAH/20 eq	0,00	0,00	-0,00	0,00
20	winter smog - P.M.	kg SPM	2,74	14,36	-0,08	17,01
21	Heavy metals (water)	kg Hg/20 eq	0,00	0,05	-0,00	0,06
22	eutrophication	kg PO4	0,24	2,46	-0,01	2,68
23	POP (water)	kg TE eq	0,00	0,00	0,00	0,00
	heavy metals	kg Pb	0,00	0,03	-0,00	0,03
	carcinogens	kg B(a)P	0,00	0,00	-0,00	0,00
	pesticides	kg act.subst	0,04	0,00	0,00	0,04

In the following table outputs by SW EuP-Ecoreport has been reported, in a way to be compared with that in tables below .

Table B.20: DW12 ps – LCA output from EuP-Ecoreport

			PRODUCTION Total	**DISTRIBUTION**	**USE**	**END-OF-LIFE**	Total
8	Total Energy (GER)	MJ	**3945**	**595**	**34487**	**-291**	**38736**
9	of which, electricity (in primary MJ)	MJ	**1142**	**1**	**30771**	**-29**	**31886**
10	Water (process)	ltr	**1955**	**0**	**50274**	**-19**	**52209**
11	Water (cooling)	ltr	**1213**	**0**	**82039**	**-160**	**83093**
12	Waste, non-haz./ landfill	g	**66470**	**313**	**40158**	**781**	**107723**
13	Waste, hazardous/ incinerated	g	**409**	**6**	**789**	**1514**	**2718**

14	Greenhouse Gases in GWP100	kg CO2 eq.	**270**	**37**	**1519**	**0**	**1825**
15	Ozone Depletion, emissions	mg R-11 eq.					
16	Acidification, emissions	g SO2 eq.	**2155**	**111**	**8828**	**7**	**11101**
17	Volatile Organic Compounds (VOC)	g	**9**	**8**	**19**	**1**	**37**
18	Persistent Organic Pollutants (POP)	ng i-Teq	**433**	**2**	**228**	**6**	**669**
19	Heavy Metals	mg Ni eq.	**3249**	**16**	**700**	**53**	**4018**
	PAHs	mg Ni eq.	**152**	**20**	**152**	**-2**	**322**
20	Particulate Matter (PM, dust)	g	**295**	**1370**	**1601**	**431**	**3698**
21	Heavy Metals	mg Hg/20	**2150**	**0**	**222**	**13**	**2385**
22	Eutrophication	g PO4	**57**	**0**	**4859**	**0**	**4917**
23	Persistent Organic Pollutants (POP)	ng i-Teq					

B.1.5.2 5kg washing machine

In the following Tables Simapro and EuP-Ecoreport outputs have been reported; methodology, remarks and considerations are the same than DW12 ps described before

Table B.21: WM 5 kg – LCA output (Ecoindicator95-rev EuP method)

Row in EuP-Ecoreport	Categoria d'impatto	Unità	Totale	WM 5kg assembling	Electricity LV use UCPTE U	Delivery van (<3.5t) B250	WM 5kg EoL	WM 5kg use materials (per LC)
14	greenhouse	kg CO2	3,42E+03	6,44E+02	1,93E+03	6,86E+00	-5,66E+01	8,95E+02
15	ozone layer	kg CFC11	1,44E-03	1,29E-04	1,25E-03	7,29E-06	-2,13E-05	7,73E-05
16	acidification	kg SO2	2,46E+01	6,13E+00	1,41E+01	2,55E-02	-2,49E-01	4,59E+00
22	eutrophication	kg PO4	1,75E+00	2,50E-01	4,74E-01	2,93E-03	-1,66E-02	1,04E+00
	heavy metals	kg Pb	3,70E-02	3,83E-03	1,52E-02	2,11E-05	-3,75E-04	1,83E-02
	carcinogens	kg B(a)P	1,27E-04	2,88E-05	4,64E-05	8,63E-08	-3,67E-05	8,81E-05
20	winter smog - P.M.	kg SPM	2,04E+01	5,02E+00	1,18E+01	1,03E-02	-1,74E-01	3,81E+00
17	summer smog - VOCs	kg C2H4	1,02E+00	2,91E-01	4,34E-01	1,91E-02	-4,62E-02	3,23E-01
	pesticides	kg act.subst	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
8	energy resources	MJ LHV	7,80E+04	1,23E+04	4,57E+04	8,77E+01	-8,43E+02	2,07E+04
12 (+13)	solid waste	kg	2,32E+02	2,09E+02	54,00E+00	0,00E+00	-4,01E+01	0,00E+00
19	Heavy metals (air)	kg Ni eq	8,02E-03	8,36E-04	3,67E-03	6,30E-06	-3,35E-05	3,55E-03
19,1	PAHs (air)	kg PAH/20 eq	2,96E-06	2,26E-06	1,23E-06	2,41E-07	-7,77E-07	1,00E-10
21	Heavy metals (water)	kg Hg/20 eq	7,05E-02	5,19E-03	1,95E-02	3,31E-06	-8,89E-04	4,66E-02
18	POP (air)	kg TE eq	2,84E-09	2,15E-09	4,08E-10	0,00E+00	2,59E-11	2,52E-10
23	POP (water)	kg TE eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table B.22: WM 5 kg – LCA output (Ecoindicator95-rev EuP method) adapted to them of EuP-Ecoreport

Row in EuP-Ecoreport	Categoria d'impatto	Unità	Totale	WM 5kg assembling	Electricity LV use UCPTE U	Delivery van (<3.5t) B250	WM 5kg EoL	WM 5kg use materials (per LC)
8	energy resources	MJ LHV	7,80E+04	1,23E+04	4,57E+04	8,77E+01	-8,43E+02	2,07E+04
12 (+13)	solid waste	kg	2,32E+02	2,09E+02	54,00E+00	0,00E+00	-4,01E+01	0,00E+00
14	greenhouse	kg CO2	3,42E+03	6,44E+02	1,93E+03	6,86E+00	-5,66E+01	8,95E+02
15	ozone layer	kg CFC11	1,44E-03	1,29E-04	1,25E-03	7,29E-06	-2,13E-05	7,73E-05
16	acidification	kg SO2	2,46E+01	6,13E+00	1,41E+01	2,55E-02	-2,49E-01	4,59E+00
17	summer smog - VOCs	kg C2H4	1,02E+00	2,91E-01	4,34E-01	1,91E-02	-4,62E-02	3,23E-01
18	POP (air)	kg TE eq	2,84E-09	2,15E-09	4,08E-10	0,00E+00	2,59E-11	2,52E-10
19	Heavy metals (air)	kg Ni eq	8,02E-03	8,36E-04	3,67E-03	6,30E-06	-3,35E-05	3,55E-03
19,1	PAHs (air)	kg PAH/20 eq	2,96E-06	2,26E-06	1,23E-06	2,41E-07	-7,77E-07	1,00E-10
20	winter smog - P.M.	kg SPM	2,04E+01	5,02E+00	1,18E+01	1,03E-02	-1,74E-01	3,81E+00

21	Heavy metals (water)	kg Hg/20 eq	7,05E-02	5,19E-03	1,95E-02	3,31E-06	-8,89E-04	4,66E-02
22	eutrophication	kg PO4	1,75E+00	2,50E-01	4,74E-01	2,93E-03	-1,66E-02	1,04E+00
23	POP (water)	kg TE eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	heavy metals	kg Pb	3,70E-02	3,83E-03	1,52E-02	2,11E-05	-3,75E-04	1,83E-02
	carcinogens	kg B(a)P	1,27E-04	2,88E-05	4,64E-05	8,63E-08	-3,67E-05	8,81E-05
	pesticides	kg act.subst	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table B.23: DW12 ps – LCA output from EuP-Ecoreport

	Resources Use and Emissions		Production	Distribution	Use	End of Life	Total
8	Total Energy (GER)	MJ	**3830**	**547**	**34230**	**-507**	**38100**
9	of which, electricity (in primary MJ)	MJ	**923**	**1**	**33815**	**-47**	**34692**
10	Water (process)	ltr	**1358**	**0**	**152455**	**-31**	**153782**
11	Water (cooling)	ltr	**1105**	**0**	**90160**	**-260**	**91005**
12	Waste, non-haz./ landfill	g	**69120**	**290**	**39889**	**-146**	**109153**
13	Waste, hazardous/ incinerated	g	**176**	**6**	**781**	**362**	**1324**
14	Greenhouse Gases in GWP100	kg CO2 eq.	**245**	**34**	**1508**	**-8**	**1778**
15	Ozone Depletion, emissions	mg R-11 eq.					
16	Acidification, emissions	g SO2 eq.	**1870**	**102**	**8754**	**-12**	**10714**
17	Volatile Organic Compounds (VOC)	g	**7**	**8**	**19**	**1**	**35**
18	Persistent Organic Pollutants (POP)	ng i-Teq	**427**	**2**	**226**	**0**	**654**
19	Heavy Metals	mg Ni eq.	**2429**	**15**	**687**	**24**	**3154**
	PAHs	mg Ni eq.	**190**	**19**	**153**	**-2**	**360**
20	Particulate Matter (PM, dust)	g	**388**	**1248**	**1601**	**375**	**3612**
21	Heavy Metals	mg Hg/20	**1597**	**0**	**234**	**2**	**1833**
22	Eutrophication	g PO4	**41**	**0**	**1**	**-1**	**41**
23	Persistent Organic Pollutants (POP)	ng i-Teq					

Appendix C SimaPro output

C.1.1.1 12 place settings dishwasher

Table C.1: DW 12 ps – Assembling phase – Output of SimaPro with "Ecoindicator 95 rev EuP method"

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
Unit	kg CO2	kg CFC11	kg SO2	kg PO4	kg Pb	kg B(a)P	kg SPM	kg C2H4	kg act.subst	MJ LHV	kg	kg Ni eq	kg PAH/20 eq	kg Hg/20 eq	kg TE eq	kg TE eq
Total	2,03E+02	7,30E-05	3,11E+00	2,37E-01	3,71E-03	2,69E-05	2,74E+00	1,70E-01	4,41E-02	4,50E+03	9,62E+01	9,82E-04	1,72E-06	3,59E-03	2,23E-09	1,05E-13
Steel I	4,54E-01	2,11E-09	4,33E-03	3,86E-04	9,46E-06	3,08E-07	2,84E-03	2,05E-04	0,00E+00	8,97E+00	4,85E-03	1,38E-06	2,86E-08	7,48E-07	4,24E-11	0,00E+00
Crude iron I	2,67E+00	1,24E-08	2,78E-02	2,49E-03	2,93E-05	1,76E-06	1,71E-02	1,28E-03	0,00E+00	6,06E+01	6,04E-01	4,99E-06	1,09E-07	3,87E-06	3,15E-15	0,00E+00
Steel I	1,43E+00	6,63E-09	1,36E-02	1,21E-03	2,98E-05	9,68E-07	8,93E-03	6,45E-04	0,00E+00	2,82E+01	1,52E-02	4,34E-06	9,01E-08	2,35E-06	1,33E-10	0,00E+00
X5CrNi18 (304) I	3,36E+01	6,41E-08	1,30E+00	1,18E-02	1,16E-04	3,65E-06	1,29E+00	4,28E-03	0,00E+00	4,87E+02	1,12E-01	1,68E-05	3,46E-07	1,50E-05	5,01E-10	0,00E+00
Steel I	7,36E+00	3,41E-08	7,02E-02	6,25E-03	1,53E-04	4,99E-06	4,60E-02	3,32E-03	0,00E+00	1,45E+02	7,85E-02	2,24E-05	4,64E-07	1,21E-05	6,87E-10	0,00E+00
Steel I	7,99E+00	3,71E-08	7,62E-02	6,79E-03	1,66E-04	5,42E-06	4,99E-02	3,61E-03	0,00E+00	1,58E+02	8,53E-02	2,43E-05	5,04E-07	1,32E-05	7,46E-10	0,00E+00
Steel I	1,09E+00	5,05E-09	1,04E-02	9,24E-04	2,27E-05	7,38E-07	6,80E-03	4,92E-04	0,00E+00	2,15E+01	1,16E-02	3,31E-06	6,86E-08	1,79E-06	1,02E-10	0,00E+00
Aluminium rec. I	3,63E-01	0,00E+00	6,07E-03	7,90E-05	8,31E-10	2,99E-11	5,96E-03	4,60E-04	0,00E+00	4,81E+00	5,36E-02	3,79E-08	6,71E-10	0,00E+00	0,00E+00	0,00E+00
Brass, at plant/CH U	4,81E-02	3,73E-09	2,36E-03	1,08E-04	6,82E-05	1,71E-07	2,30E-03	3,35E-05	0,00E+00	9,77E-01	0,00E+00	2,79E-05	0,00E+00	2,36E-06	2,94E-13	0,00E+00
Chromium I	8,90E-01	1,17E-09	4,03E-03	2,26E-04	1,42E-07	6,89E-10	4,14E-03	6,38E-05	0,00E+00	1,37E+01	1,68E-03	2,18E-08	2,21E-10	1,85E-07	2,97E-16	0,00E+00
Copper I	4,98E+00	3,09E-10	4,58E-01	2,12E-03	7,53E-08	3,45E-10	4,46E-01	1,84E-04	0,00E+00	6,29E+01	8,88E+01	2,25E-08	4,29E-09	4,90E-08	7,88E-17	0,00E+00
Zinc I	1,87E-02	1,18E-09	2,61E-04	9,06E-06	1,94E-07	5,21E-10	2,19E-04	3,57E-06	0,00E+00	2,51E-01	4,02E-03	4,12E-08	1,74E-11	1,94E-07	3,01E-16	0,00E+00
Cardboard duplex/tripl	4,13E-01	1,05E-07	2,03E-03	2,05E-04	1,99E-06	2,61E-08	1,48E-03	1,57E-04	0,00E+00	7,89E+00	7,81E-02	7,85E-07	4,20E-10	5,93E-07	0,00E+00	0,00E+00

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
PS (EPS) B250 (1998)	1,93E+00	1,06E-06	1,42E-02	1,20E-03	4,19E-06	5,34E-08	8,06E-03	1,61E-03	0,00E+00	5,65E+01	3,07E-02	6,94E-07	1,41E-09	1,56E-06	0,00E+00	0,00E+00
Kraft paper, bleached, at plant/RER U	-1,41E-03	5,06E-10	2,92E-05	1,46E-05	6,81E-08	5,04E-10	1,73E-05	1,73E-06	0,00E+00	2,43E-01	0,00E+00	9,38E-09	0,00E+00	2,23E-07	1,55E-14	0,00E+00
PE (LDPE) I	1,96E-01	0,00E+00	3,04E-03	2,90E-04	1,30E-07	1,55E-10	2,09E-03	1,45E-03	0,00E+00	1,45E+01	6,86E-03	0,00E+00	3,13E-10	0,00E+00	0,00E+00	0,00E+00
Poplar I	1,25E-01	2,55E-09	1,61E-03	2,61E-04	2,19E-07	1,45E-09	3,58E-04	1,88E-04	0,00E+00	2,57E+01	1,06E-01	4,43E-07	8,22E-10	4,04E-07	6,51E-16	0,00E+00
ABS I	2,64E+00	7,85E-07	1,39E-02	1,49E-03	8,37E-07	1,61E-08	7,85E-03	1,65E-03	0,00E+00	6,81E+01	9,54E-02	0,00E+00	5,97E-09	0,00E+00	0,00E+00	0,00E+00
EPDM rubber ETH U	1,75E+00	5,74E-06	1,47E-02	1,10E-03	4,73E-05	1,85E-07	1,21E-02	8,45E-03	0,00E+00	5,67E+01	0,00E+00	8,87E-06	1,50E-09	3,52E-05	7,03E-13	0,00E+00
PS (EPS) B250 (1998)	1,08E-01	5,90E-08	7,97E-04	6,70E-05	2,34E-07	2,99E-09	4,51E-04	9,02E-05	0,00E+00	3,16E+00	1,71E-03	3,88E-08	7,87E-11	8,71E-08	0,00E+00	0,00E+00
PA 6 I	3,30E+00	0,00E+00	7,03E-03	1,04E-03	4,52E-06	1,62E-08	2,09E-03	2,63E-03	0,00E+00	6,59E+01	5,32E-03	2,86E-06	7,59E-10	0,00E+00	0,00E+00	0,00E+00
PB B250 (1998)	1,33E-01	4,80E-08	1,05E-03	7,94E-05	1,14E-07	4,59E-10	6,29E-04	2,20E-04	0,00E+00	3,19E+00	3,51E-03	3,74E-08	8,88E-11	8,86E-08	0,00E+00	0,00E+00
PE (HDPE) I	1,84E-01	0,00E+00	2,56E-03	2,61E-04	1,38E-07	3,50E-11	1,57E-03	1,64E-03	0,00E+00	1,48E+01	6,28E-03	0,00E+00	2,35E-10	0,00E+00	0,00E+00	0,00E+00
PMMA I	3,67E-02	6,00E-09	2,67E-04	4,15E-05	5,82E-09	1,39E-11	1,74E-04	1,87E-05	0,00E+00	5,96E-01	7,46E-04	0,00E+00	2,88E-11	0,00E+00	0,00E+00	0,00E+00
HDPE B250	5,14E-01	2,57E-07	3,13E-03	3,22E-04	8,31E-07	2,41E-09	1,44E-03	1,73E-03	0,00E+00	1,78E+01	7,66E-03	2,28E-07	2,88E-10	7,69E-07	0,00E+00	0,00E+00
PP I	5,69E+00	0,00E+00	9,33E-02	7,02E-03	4,45E-06	4,62E-09	6,72E-02	2,67E-02	0,00E+00	4,08E+02	1,60E-01	0,00E+00	7,24E-09	0,00E+00	0,00E+00	0,00E+00
PP I	3,74E-02	0,00E+00	6,14E-04	4,62E-05	2,92E-08	3,04E-11	4,42E-04	1,76E-04	0,00E+00	2,69E+00	1,06E-03	0,00E+00	4,76E-11	0,00E+00	0,00E+00	0,00E+00
PS (EPS) B250 (1998)	1,41E+00	7,69E-07	1,04E-02	8,73E-04	3,05E-06	3,89E-08	5,87E-03	1,18E-03	0,00E+00	4,11E+01	2,23E-02	5,06E-07	1,03E-09	1,13E-06	0,00E+00	0,00E+00
PUR semi rigid foam I	1,37E-02	9,15E-11	1,23E-04	1,69E-05	6,46E-07	4,82E-11	9,47E-05	1,88E-05	0,00E+00	2,71E-01	2,33E-03	8,80E-10	1,48E-11	1,45E-08	2,33E-17	0,00E+00
PVC B250	3,97E-01	1,14E-07	4,69E-03	4,39E-04	1,96E-06	2,74E-09	2,50E-03	1,15E-03	0,00E+00	1,19E+01	2,49E-02	2,12E-07	1,04E-09	3,61E-06	0,00E+00	0,00E+00
PVC B250	4,73E-01	1,36E-07	5,59E-03	5,24E-04	2,34E-06	3,27E-09	2,98E-03	1,38E-03	0,00E+00	1,42E+01	2,97E-02	2,53E-07	1,24E-09	4,30E-06	0,00E+00	0,00E+00
adhesive - glue	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Bitumen refinery Europe U	3,27E+00	4,10E-05	2,48E-02	2,18E-03	3,23E-05	5,82E-08	1,72E-02	2,18E-02	0,00E+00	3,05E+02	0,00E+00	9,14E-06	7,82E-09	1,24E-05	1,24E-13	0,00E+00
Concrete I	8,55E-02	1,58E-09	4,46E-04	5,65E-05	1,30E-07	6,96E-10	1,47E-02	1,76E-05	0,00E+00	1,06E+00	2,21E-03	1,50E-08	1,02E-10	2,51E-07	4,03E-16	0,00E+00
Cotton fabric I	9,56E-01	5,70E-08	6,85E-03	8,72E-02	2,00E-04	2,53E-08	2,44E-02	3,05E-02	3,04E-02	4,91E+01	2,76E-01	5,40E-07	8,23E-10	2,13E-04	1,45E-14	0,00E+00

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
Liquid epoxy resins E	1,94E+00	1,23E-07	5,35E-03	3,04E-03	4,55E-07	8,60E-08	5,07E-03	5,57E-04	0,00E+00	3,39E+01	7,79E-02	6,37E-07	2,32E-09	5,94E-07	8,79E-28	7,05E-14
Cotton fibres I	9,76E-02	4,52E-10	9,03E-04	3,79E-02	1,46E-06	3,15E-10	9,03E-03	4,59E-05	1,37E-02	9,70E+00	2,54E-02	4,28E-09	1,69E-11	3,63E-06	1,15E-16	0,00E+00
Electronics for control units/RER U	4,24E+00	2,29E-07	3,48E-02	6,23E-03	5,85E-04	2,77E-06	3,05E-02	1,61E-03	0,00E+00	9,90E+01	0,00E+00	1,63E-04	0,00E+00	9,53E-04	3,92E-12	0,00E+00
Kraft paper, bleached, at plant/RER U	-9,79E-02	3,51E-08	2,03E-03	1,01E-03	4,72E-06	3,50E-08	1,20E-03	1,20E-04	0,00E+00	1,69E+01	0,00E+00	6,50E-07	0,00E+00	1,54E-05	1,08E-12	0,00E+00
Liquid epoxy resins E	9,52E-01	6,05E-08	2,62E-03	1,49E-03	2,23E-07	4,21E-08	2,49E-03	2,73E-04	0,00E+00	1,66E+01	3,81E-02	3,12E-07	1,14E-09	2,91E-07	4,30E-28	3,46E-14
Electronics for control units/RER U	9,36E-02	5,05E-09	7,69E-04	1,37E-04	1,29E-05	6,12E-08	6,74E-04	3,54E-05	0,00E+00	2,19E+00	0,00E+00	3,60E-06	0,00E+00	2,10E-05	8,65E-14	0,00E+00
Copper, at regional storage/RER U	5,92E-01	4,89E-08	4,32E-02	1,76E-03	1,33E-03	3,44E-06	4,30E-02	5,39E-04	0,00E+00	1,18E+01	0,00E+00	5,45E-04	0,00E+00	3,41E-05	4,48E-12	0,00E+00
Poplar I	2,52E-01	5,14E-09	3,24E-03	5,26E-04	4,41E-07	2,92E-09	7,21E-04	3,78E-04	0,00E+00	5,17E+01	2,13E-01	8,92E-07	1,66E-09	8,14E-07	1,31E-15	0,00E+00
Water demineralized ETH U	4,96E-02	6,52E-08	3,77E-04	1,48E-05	5,05E-07	1,25E-09	3,00E-04	1,57E-05	0,00E+00	1,13E+00	0,00E+00	2,48E-07	3,97E-11	1,08E-06	3,25E-15	0,00E+00
Paint ETH S	9,45E-02	8,07E-08	6,72E-04	2,65E-05	1,09E-05	6,67E-08	5,74E-04	4,31E-05	0,00E+00	1,81E+00	0,00E+00	3,66E-06	6,55E-11	7,05E-07	4,87E-15	0,00E+00
Electricity MV use in UCPTE U	9,19E+00	4,54E-06	6,57E-02	2,24E-03	6,24E-05	2,05E-07	5,49E-02	2,01E-03	0,00E+00	2,18E+02	0,00E+00	1,57E-05	4,48E-09	9,17E-05	5,70E-13	0,00E+00
Heat gas B250	2,01E+00	2,29E-08	2,46E-03	3,14E-04	7,49E-07	1,49E-07	1,06E-03	2,29E-04	0,00E+00	3,39E+01	0,00E+00	3,89E-07	1,60E-09	9,32E-07	0,00E+00	0,00E+00
Truck 28t B250	3,64E+00	4,06E-06	4,94E-02	8,31E-03	5,54E-06	2,84E-08	5,26E-03	9,13E-03	0,00E+00	4,77E+01	0,00E+00	1,92E-06	3,83E-08	1,52E-06	0,00E+00	0,00E+00
Sea ship B250	8,55E-02	9,51E-08	1,30E-03	2,91E-05	1,81E-06	3,96E-09	1,15E-03	8,36E-05	0,00E+00	1,18E+00	0,00E+00	7,83E-07	5,72E-11	6,86E-08	0,00E+00	0,00E+00
Hot rolling, steel/RER U	2,08E+00	1,71E-07	7,04E-03	3,11E-03	2,19E-04	2,41E-07	6,90E-03	1,51E-03	0,00E+00	4,39E+01	0,00E+00	6,11E-06	0,00E+00	2,24E-04	3,05E-12	0,00E+00
Sheet rolling, steel/RER U	1,33E+00	9,58E-08	6,19E-03	2,42E-03	1,81E-04	1,66E-07	5,93E-03	3,65E-04	0,00E+00	2,86E+01	0,00E+00	1,91E-06	0,00E+00	1,36E-03	2,95E-12	0,00E+00
Extruding alum I	8,40E+01	9,07E-06	6,56E-01	2,65E-02	2,63E-04	4,77E-07	4,83E-01	2,80E-02	0,00E+00	1,54E+03	5,15E+00	6,29E-05	2,64E-08	4,22E-04	7,52E-13	0,00E+00
Wire drawing, copper/RER U	9,93E-01	5,35E-08	7,22E-03	5,52E-04	8,53E-05	2,54E-07	6,22E-03	2,96E-04	0,00E+00	2,34E+01	0,00E+00	3,24E-05	0,00E+00	4,74E-05	4,43E-13	0,00E+00
Foaming, expanding/RER U	5,89E-01	7,79E-08	3,18E-03	2,28E-04	2,81E-06	3,22E-08	2,53E-03	5,75E-03	0,00E+00	1,19E+01	0,00E+00	1,93E-06	0,00E+00	2,69E-06	3,61E-14	0,00E+00
Injection	6,08E+00	3,79E-	2,82E-02	4,08E-03	4,80E-	4,36E-07	2,05E-	1,58E-	0,00E+00	1,52E+0	0,00E+0	9,05E-	0,00E+00	8,70E-05	7,87E-	0,00E+0

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
moulding/RER U		06			05		02	03		2	0	06			13	0
Extrusion PVC I	1,16E-01	0,00E+00	1,77E-03	1,31E-04	1,14E-08	5,27E-11	1,44E-03	3,39E-04	0,00E+00	1,63E+00	4,99E-03	1,27E-12	1,12E-10	0,00E+00	0,00E+00	0,00E+00

Table C.2: DW 12 ps – EoL phase – Output of SimaPro with "Ecoindicator 95 rev EuP method"

Impact category	Unit	Total	Recycling only B250 avoided	Incineration B250 (98) avoided	Landfill B250 (98)
greenhouse	kg CO2	-3,99E+01	-4,32E+01	3,23E+00	1,14E-01
ozone layer	kg CFC11	-1,25E-05	-1,23E-05	-2,06E-07	5,34E-09
acidification	kg SO2	-1,37E-01	-1,34E-01	-2,71E-03	9,05E-05
eutrophication	kg PO4	-1,29E-02	-1,29E-02	-4,06E-05	3,45E-05
heavy metals	kg Pb	-2,84E-04	-2,82E-04	-1,42E-06	7,99E-08
carcinogens	kg B(a)P	-6,88E-06	-6,86E-06	-2,34E-08	4,10E-11
winter smog - P.M.	kg SPM	-8,24E-02	-7,84E-02	-4,03E-03	3,91E-05
summer smog - VOCs	kg C2H4	-3,53E-02	-3,53E-02	-1,67E-05	3,88E-05
pesticides	kg act.subst	0,00E+00	0,00E+00	0,00E+00	0,00E+00
energy resources	MJ LHV	-5,81E+02	-5,60E+02	-2,08E+01	6,94E-02
solid waste	kg	-4,00E+01	-4,00E+01	0,00E+00	0,00E+00
Heavy metals (air)	kg Ni eq	-1,92E-05	-2,00E-05	6,97E-07	2,73E-08
PAHs (air)	kg PAH/20 eq	-5,94E-07	-5,99E-07	5,54E-09	5,29E-11
Heavy metals (water)	kg Hg/20 eq	-8,49E-04	-8,42E-04	-8,00E-06	9,65E-07
POP (air)	kg TE eq	1,04E-10	0,00E+00	1,04E-10	1,29E-14
POP (water)	kg TE eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table C.3: DW 12 ps – Life Cycle – Output of SimaPro with "Ecoindicator 95 rev EuP method"

Impact category	Unit	Total	DW12ps assembling	Electricity LV use UCPTE U	Delivery van (<3.5t) B250	DW12 EoL	DW12 ps Use consumables (per LC)
greenhouse	kg CO2	2,32E+03	2,03E+02	1,76E+03	4,68E+00	-3,99E+01	3,94E+02
ozone layer	kg CFC11	1,23E-03	7,30E-05	1,14E-03	4,98E-06	-1,22E-05	2,69E-05
acidification	kg SO2	1,98E+01	3,11E+00	1,28E+01	1,74E-02	-1,36E-01	4,04E+00
eutrophication	kg PO4	2,68E+00	2,37E-01	4,32E-01	2,00E-03	-1,25E-02	2,02E+00
heavy metals	kg Pb	3,12E-02	3,71E-03	1,38E-02	1,44E-05	-2,88E-04	1,40E-02
carcinogens	kg B(a)P	9,39E-05	2,69E-05	4,23E-05	5,89E-08	-6,89E-06	3,16E-05
winter smog - P.M.	kg SPM	1,70E+01	2,74E+00	1,07E+01	7,02E-03	-8,31E-02	3,62E+00
summer smog - VOCs	kg C2H4	6,24E-01	1,70E-01	3,95E-01	1,31E-02	-3,27E-02	7,89E-02
pesticides	kg act.subst	4,41E-02	4,41E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00
energy resources	MJ LHV	5,12E+04	4,50E+03	4,16E+04	5,99E+01	-5,62E+02	5,63E+03
solid waste	kg	5,61E+01	9,62E+01	0,00E+00	0,00E+00	-4,01E+01	0,00E+00
Heavy metals (air)	kg Ni eq	5,61E-03	9,82E-04	3,34E-03	4,30E-06	-1,99E-05	1,30E-03
PAHs (air)	kg PAH/20 eq	2,41E-06	1,72E-06	1,12E-06	1,64E-07	-5,94E-07	0,00E+00
Heavy metals (water)	kg Hg/20 eq	5,71E-02	3,59E-03	1,78E-02	2,26E-06	-8,55E-04	3,65E-02
POP (air)	kg TE eq	2,83E-09	2,23E-09	3,71E-10	0,00E+00	9,69E-11	1,30E-10
POP (water)	kg TE eq	1,05E-13	1,05E-13	0,00E+00	0,00E+00	0,00E+00	0,00E+00

C.1.1.2 5kg washing machine

Table C.4: WM 5 – Assembling phase – Output of SimaPro with "Ecoindicator 95 rev EuP method"

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
Unit	kg CO2	kg CFC11	kg SO2	kg PO4	kg Pb	kg B(a)P	kg SPM	kg C2H4	kg act.subst	MJ LHV	kg	kg Ni eq	kg PAH/20 eq	kg Hg/20 eq	kg TE eq	kg TE eq
Total	6,44E+02	1,29E-04	6,13E+00	2,50E-01	3,83E-03	2,88E-05	5,02E+00	2,91E-01	0,00E+00	1,23E+04	2,09E+02	8,36E-04	2,26E-06	5,19E-03	2,15E-09	0,00E+00
Cast iron ETH U	2,80E+01	2,00E-05	2,04E-01	7,46E-03	6,20E-04	3,17E-06	1,77E-01	1,38E-02	0,00E+00	4,29E+02	0,00E+00	2,07E-04	3,32E-07	5,53E-04	3,03E-11	0,00E+00
Crude iron I	5,76E+00	2,67E-08	6,00E-02	5,37E-03	6,32E-05	3,79E-06	3,68E-02	2,77E-03	0,00E+00	1,31E+02	1,30E+00	1,08E-05	2,36E-07	8,35E-06	6,81E-15	0,00E+00
X5CrNi18 (304) I	7,50E+00	1,43E-08	2,90E-01	2,62E-03	2,57E-05	8,14E-07	2,87E-01	9,54E-04	0,00E+00	1,09E+02	2,50E-02	3,75E-06	7,71E-08	3,35E-06	1,12E-10	0,00E+00
X5CrNi18 (304) I	2,18E+00	4,16E-09	8,44E-02	7,62E-04	7,49E-06	2,37E-07	8,35E-02	2,77E-04	0,00E+00	3,15E+01	7,26E-03	1,09E-06	2,24E-08	9,75E-07	3,24E-11	0,00E+00
Steel I	1,41E+01	6,53E-08	1,34E-01	1,20E-02	2,93E-04	9,54E-06	8,80E-02	6,36E-03	0,00E+00	2,78E+02	1,50E-01	4,28E-05	8,88E-07	2,32E-05	1,31E-09	0,00E+00
Steel I	6,91E+00	3,21E-08	6,59E-02	5,87E-03	1,44E-04	4,68E-06	4,32E-02	3,12E-03	0,00E+00	1,36E+02	7,38E-02	2,10E-05	4,36E-07	1,14E-05	6,45E-10	0,00E+00
Aluminium rec. I	2,02E+00	0,00E+00	3,39E-02	4,41E-04	4,64E-09	1,67E-10	3,33E-02	2,57E-03	0,00E+00	2,69E+01	2,99E-01	2,12E-07	3,75E-09	0,00E+00	0,00E+00	0,00E+00
Aluminium rec. I	9,81E-01	0,00E+00	1,64E-02	2,14E-04	2,25E-09	8,10E-11	1,61E-02	1,24E-03	0,00E+00	1,30E+01	1,45E-01	1,03E-07	1,82E-09	0,00E+00	0,00E+00	0,00E+00
Brass, at plant/CH U	2,88E-02	2,23E-09	1,42E-03	6,46E-05	4,09E-05	1,02E-07	1,38E-03	2,01E-05	0,00E+00	5,85E-01	0,00E+00	1,67E-05	0,00E+00	1,41E-06	1,76E-13	0,00E+00
Copper I	2,65E+00	1,64E-10	2,43E-01	1,12E-03	4,00E-08	1,83E-10	2,37E-01	9,76E-05	0,00E+00	3,34E+01	4,72E+01	1,20E-08	2,28E-09	2,60E-08	4,18E-17	0,00E+00
Chromium I	2,20E+01	2,89E-08	9,95E-02	5,60E-03	3,51E-06	1,70E-08	1,02E-01	1,58E-03	0,00E+00	3,39E+02	4,15E-02	5,39E-07	5,47E-09	4,57E-06	7,35E-15	0,00E+00
Copper I	6,60E+00	4,10E-10	6,06E-01	2,80E-03	9,97E-08	4,56E-10	5,91E-01	2,44E-04	0,00E+00	8,33E+01	1,18E+02	2,98E-08	5,68E-09	6,48E-08	1,04E-16	0,00E+00
Nickel I	2,13E-02	1,83E-11	1,32E-03	5,38E-06	1,69E-09	8,76E-12	1,33E-03	1,30E-06	0,00E+00	2,72E-01	2,54E-05	2,17E-10	6,18E-12	2,89E-09	4,66E-18	0,00E+00
Zinc I	4,00E-01	2,53E-08	5,60E-03	1,94E-04	4,16E-06	1,12E-08	4,70E-03	7,64E-05	0,00E+00	5,37E+00	8,61E-02	8,83E-07	3,72E-10	4,15E-06	6,45E-15	0,00E+00
Cardboard duplex/tripl	7,17E-02	1,83E-08	3,52E-04	3,56E-05	3,45E-07	4,53E-09	2,56E-04	2,72E-05	0,00E+00	1,37E+00	1,36E-02	1,36E-07	7,30E-11	1,03E-07	0,00E+00	0,00E+00
PS (EPS) B250 (1998)	1,86E+00	1,02E-06	1,37E-02	1,15E-03	4,03E-06	5,14E-08	7,75E-03	1,55E-03	0,00E+00	5,43E+01	2,95E-02	6,68E-07	1,35E-09	1,50E-06	0,00E+00	0,00E+00

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
Kraft paper, bleached, at plant/RER U	-4,94E-03	1,77E-09	1,02E-04	5,11E-05	2,39E-07	1,77E-09	6,04E-05	6,06E-06	0,00E+00	8,51E-01	0,00E+00	3,28E-08	0,00E+00	7,80E-07	5,44E-14	0,00E+00
PE (LDPE) I	2,05E-01	0,00E+00	3,18E-03	3,03E-04	1,36E-07	1,63E-10	2,18E-03	1,52E-03	0,00E+00	1,52E+01	7,17E-03	0,00E+00	3,28E-10	0,00E+00	0,00E+00	0,00E+00
PP I	8,81E-03	0,00E+00	1,44E-04	1,09E-05	6,88E-09	7,14E-12	1,04E-04	4,14E-05	0,00E+00	6,32E-01	2,48E-04	0,00E+00	1,12E-11	0,00E+00	0,00E+00	0,00E+00
Poplar I	1,12E-01	2,29E-09	1,44E-03	2,34E-04	1,96E-07	1,30E-09	3,21E-04	1,68E-04	0,00E+00	2,30E+01	9,48E-02	3,97E-07	7,36E-10	3,62E-07	5,83E-16	0,00E+00
ABS I	4,24E+00	1,26E-06	2,24E-02	2,39E-03	1,34E-06	2,59E-08	1,26E-02	2,65E-03	0,00E+00	1,09E+02	1,53E-01	0,00E+00	9,58E-09	0,00E+00	0,00E+00	0,00E+00
EPDM rubber ETH U	5,91E+00	1,94E-05	4,96E-02	3,72E-03	1,60E-04	6,23E-07	4,10E-02	2,85E-02	0,00E+00	1,91E+02	0,00E+00	2,99E-05	5,08E-09	1,19E-04	2,37E-12	0,00E+00
PA 6 I	5,23E-02	0,00E+00	1,12E-04	1,65E-05	7,17E-08	2,57E-10	3,31E-05	4,17E-05	0,00E+00	1,05E+00	8,44E-05	4,53E-08	1,20E-11	0,00E+00	0,00E+00	0,00E+00
PA 66 GF30 I	5,45E-03	5,00E-10	3,64E-05	3,99E-06	3,62E-09	1,11E-12	1,45E-05	5,98E-07	0,00E+00	5,85E-02	2,26E-04	0,00E+00	2,30E-12	1,82E-08	0,00E+00	0,00E+00
PA 66 I	1,17E+00	9,67E-08	7,30E-03	9,11E-04	5,89E-07	4,04E-10	2,81E-03	1,44E-04	0,00E+00	1,26E+01	2,95E-02	0,00E+00	8,13E-10	1,08E-06	0,00E+00	0,00E+00
PC I	1,13E+00	4,14E-07	5,76E-03	6,65E-04	2,40E-07	9,22E-10	2,69E-03	4,64E-04	0,00E+00	2,17E+01	4,28E-02	0,00E+00	1,49E-09	0,00E+00	0,00E+00	0,00E+00
PC 30% glass fibre I	1,09E-02	3,83E-09	5,69E-05	6,47E-06	5,18E-09	1,12E-11	2,72E-05	4,30E-06	0,00E+00	2,08E-01	4,22E-04	3,85E-10	1,39E-11	9,71E-10	1,55E-18	0,00E+00
PE (HDPE) I	1,06E-02	0,00E+00	1,47E-04	1,49E-05	7,93E-09	2,01E-12	8,99E-05	9,39E-05	0,00E+00	8,51E-01	3,60E-04	0,00E+00	1,35E-11	0,00E+00	0,00E+00	0,00E+00
HDPE B250	9,63E-02	4,82E-08	5,88E-04	6,04E-05	1,56E-07	4,52E-10	2,70E-04	3,25E-04	0,00E+00	3,33E+00	1,44E-03	4,28E-08	5,40E-11	1,44E-07	0,00E+00	0,00E+00
PP granulate average B250	1,12E+01	8,76E-06	1,08E-01	8,21E-03	2,65E-05	8,27E-08	6,55E-02	2,40E-02	0,00E+00	4,36E+02	1,86E-01	7,06E-06	8,33E-09	2,41E-05	0,00E+00	0,00E+00
PP granulate average B250	5,23E+00	4,11E-06	5,04E-02	3,85E-03	1,24E-05	3,88E-08	3,07E-02	1,12E-02	0,00E+00	2,04E+02	8,71E-02	3,31E-06	3,91E-09	1,13E-05	0,00E+00	0,00E+00
PP granulate average B250	3,94E-03	3,09E-09	3,79E-05	2,90E-06	9,36E-09	2,92E-11	2,31E-05	8,45E-06	0,00E+00	1,54E-01	6,55E-05	2,49E-09	2,94E-12	8,50E-09	0,00E+00	0,00E+00
PP GF30 I	7,74E-02	1,87E-10	1,17E-03	8,99E-05	1,41E-07	1,35E-10	8,33E-04	3,04E-04	0,00E+00	4,85E+00	2,63E-03	1,18E-08	8,72E-11	2,98E-08	4,76E-17	0,00E+00
PVC B250	5,04E-01	1,44E-07	5,96E-03	5,58E-04	2,49E-06	3,48E-09	3,17E-03	1,47E-03	0,00E+00	1,51E+01	3,16E-02	2,70E-07	1,32E-09	4,58E-06	0,00E+00	0,00E+00
PB B250 (1998)	3,17E-02	1,14E-08	2,49E-04	1,89E-05	2,72E-08	1,09E-10	1,50E-04	5,23E-05	0,00E+00	7,60E-01	8,35E-04	8,90E-09	2,11E-11	2,11E-08	0,00E+00	0,00E+00
Bitumen refinery Europe U	2,05E-02	2,57E-07	1,55E-04	1,36E-05	2,02E-07	3,64E-10	1,08E-04	1,36E-04	0,00E+00	1,91E+00	0,00E+00	5,72E-08	4,90E-11	7,78E-08	7,75E-16	0,00E+00
Concrete I	1,24E+00	2,30E-08	6,48E-03	8,21E-04	1,89E-06	1,01E-08	2,13E-01	2,55E-04	0,00E+00	1,54E+0	3,20E-02	2,18E-07	1,48E-09	3,64E-06	5,85E-15	0,00E+0

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
										1						0
Electronics for control units/RER U	1,57E+00	8,49E-08	1,29E-02	2,31E-03	2,17E-04	1,03E-06	1,13E-02	5,96E-04	0,00E+00	3,67E+01	0,00E+00	6,05E-05	0,00E+00	3,54E-04	1,45E-12	0,00E+00
PP granulate average B250	5,35E-02	4,20E-08	5,16E-04	3,94E-05	1,27E-07	3,97E-10	3,14E-04	1,15E-04	0,00E+00	2,09E+00	8,90E-04	3,38E-08	4,00E-11	1,16E-07	0,00E+00	0,00E+00
Glass (white) B250	1,38E+00	1,26E-06	8,07E-03	6,04E-04	8,34E-05	8,98E-09	4,86E-03	1,25E-03	0,00E+00	2,18E+01	1,23E-01	4,09E-06	2,84E-09	1,42E-06	0,00E+00	0,00E+00
Gravel I	2,18E-04	8,05E-12	2,39E-06	3,36E-07	6,62E-10	3,54E-12	6,09E-07	1,33E-07	0,00E+00	2,85E-03	1,20E-05	7,63E-11	8,53E-13	1,27E-09	2,05E-18	0,00E+00
Lubricating oil, at plant/RER U	2,78E-02	2,40E-08	2,49E-04	1,35E-04	3,90E-07	2,33E-09	2,01E-04	1,44E-04	0,00E+00	2,28E+00	0,00E+00	9,00E-08	0,00E+00	7,44E-07	6,81E-15	0,00E+00
Kraft paper, bleached, at plant/RER U	-5,08E-02	1,82E-08	1,05E-03	5,26E-04	2,45E-06	1,82E-08	6,22E-04	6,23E-05	0,00E+00	8,76E+00	0,00E+00	3,38E-07	0,00E+00	8,02E-06	5,60E-13	0,00E+00
Copper I	6,69E-01	4,15E-11	6,15E-02	2,84E-04	1,01E-08	4,62E-11	5,99E-02	2,47E-05	0,00E+00	8,45E+00	1,19E+01	3,02E-09	5,76E-10	6,57E-09	1,06E-17	0,00E+00
Poplar I	2,52E-01	5,14E-09	3,24E-03	5,26E-04	4,41E-07	2,92E-09	7,21E-04	3,78E-04	0,00E+00	5,17E+01	2,13E-01	8,92E-07	1,66E-09	8,14E-07	1,31E-15	0,00E+00
Water demineralized ETH U	3,32E-01	4,37E-07	2,52E-03	9,91E-05	3,39E-06	8,35E-09	2,01E-03	1,05E-04	0,00E+00	7,55E+00	0,00E+00	1,66E-06	2,66E-10	7,23E-06	2,18E-14	0,00E+00
Lubricating oil, at plant/RER U	4,38E-02	3,78E-08	3,93E-04	2,12E-04	6,15E-07	3,68E-09	3,17E-04	2,28E-04	0,00E+00	3,60E+00	0,00E+00	1,42E-07	0,00E+00	1,17E-06	1,07E-14	0,00E+00
Electricity MV use in UCPTE U	1,54E+01	7,60E-06	1,10E-01	3,74E-03	1,04E-04	3,44E-07	9,20E-02	3,36E-03	0,00E+00	3,64E+02	0,00E+00	2,63E-05	7,50E-09	1,54E-04	9,55E-13	0,00E+00
Heat gas B250	3,22E+00	3,69E-08	3,96E-03	5,05E-04	1,20E-06	2,39E-07	1,71E-03	3,68E-04	0,00E+00	5,45E+01	0,00E+00	6,26E-07	2,57E-09	1,50E-06	0,00E+00	0,00E+00
Truck 28t B250	5,38E+00	6,00E-06	7,30E-02	1,23E-02	8,20E-06	4,20E-08	7,78E-03	1,35E-02	0,00E+00	7,05E+01	0,00E+00	2,84E-06	5,67E-08	2,25E-06	0,00E+00	0,00E+00
Sea ship B250	1,20E-01	1,33E-07	1,82E-03	4,08E-05	2,53E-06	5,54E-09	1,61E-03	1,17E-04	0,00E+00	1,65E+00	0,00E+00	1,10E-06	8,01E-11	9,60E-08	0,00E+00	0,00E+00
Hot rolling, steel/RER U	2,49E+00	2,05E-07	8,44E-03	3,73E-03	2,63E-04	2,88E-07	8,28E-03	1,81E-03	0,00E+00	5,27E+01	0,00E+00	7,33E-06	0,00E+00	2,69E-04	3,65E-12	0,00E+00
Sheet rolling, steel/RER U	1,07E+00	7,67E-08	4,96E-03	1,94E-03	1,45E-04	1,33E-07	4,75E-03	2,92E-04	0,00E+00	2,29E+01	0,00E+00	1,53E-06	0,00E+00	1,09E-03	2,37E-12	0,00E+00
Extruding alum I	4,69E+02	5,06E-05	3,66E+00	1,48E-01	1,47E-03	2,66E-06	2,69E+00	1,56E-01	0,00E+00	8,57E+03	2,87E+01	3,51E-04	1,47E-07	2,36E-03	4,20E-12	0,00E+00
Wire drawing, copper/RER U	4,29E-01	2,31E-08	3,12E-03	2,39E-04	3,69E-05	1,10E-07	2,69E-03	1,28E-04	0,00E+00	1,01E+01	0,00E+00	1,40E-05	0,00E+00	2,05E-05	1,91E-13	0,00E+00

Impact category	greenhouse	ozone layer	acidification	eutrophication	heavy metals	carcinogens	winter smog - P.M.	summer smog - VOCs	pesticides	energy resources	solid waste	Heavy metals (air)	PAHs (air)	Heavy metals (water)	POP (air)	POP (water)
Foaming, expanding/RER U	3,54E-01	4,68E-08	1,91E-03	1,37E-04	1,69E-06	1,94E-08	1,52E-03	3,46E-03	0,00E+00	7,17E+00	0,00E+00	1,16E-06	0,00E+00	1,61E-06	2,17E-14	0,00E+00
Injection moulding/RER U	10,01081	6,25E-06	0,046411	0,006722	7,91E-05	7,18E-07	0,033831	0,002601	0	250,801	0	1,49E-05	0	0,000143	1,3E-12	0
Extrusion PVC I	0,067083	0	0,001029	7,58E-05	6,61E-09	3,05E-11	0,000833	0,000197	0	0,947131	0,00289	7,33E-13	6,5E-11	0	0	0

Table C.5: WM 5 – EoL phase – Output of SimaPro with "Ecoindicator 95 rev EuP method"

Impact category	Unit	Total	Recycling only B250 avoided	Incineration B250 (98) avoided	Landfill B250 (98)
greenhouse	kg CO2	-6,58E+01	-6,75E+01	8,93E-01	7,90E-01
ozone layer	kg CFC11	-2,33E-05	-2,33E-05	-4,93E-08	4,31E-08
acidification	kg SO2	-2,71E-01	-2,70E-01	-8,92E-04	5,12E-04
eutrophication	kg PO4	-1,92E-02	-1,94E-02	2,96E-06	1,53E-04
heavy metals	kg Pb	-4,39E-04	-4,38E-04	-1,24E-06	3,15E-07
carcinogens	kg B(a)P	-3,67E-05	-3,67E-05	-6,30E-09	2,96E-10
winter smog - P.M.	kg SPM	-1,85E-01	-1,84E-01	-1,08E-03	1,26E-04
summer smog - VOCs	kg C2H4	-5,61E-02	-5,64E-02	6,88E-06	2,82E-04
pesticides	kg act.subst	0,00E+00	0,00E+00	0,00E+00	0,00E+00
energy resources	MJ LHV	-9,62E+02	-9,70E+02	7,77E+00	5,39E-01
solid waste	kg	-4,92E+01	-4,92E+01	0,00E+00	0,00E+00
Heavy metals (air)	kg Ni eq	-3,81E-05	-3,83E-05	3,76E-08	1,56E-07
PAHs (air)	kg PAH/20 eq	-9,06E-07	-9,08E-07	1,58E-09	4,24E-10
Heavy metals (water)	kg Hg/20 eq	-1,08E-03	-1,08E-03	-2,38E-06	1,77E-06
POP (air)	kg TE eq	2,98E-11	0,00E+00	2,97E-11	5,52E-14
POP (water)	kg TE eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table C.6: WM 5 – Life Cycle – Output of SimaPro with "Ecoindicator 95 rev EuP method"

Impact category	Unit	Total	WM 5kg assembling	Electricity LV use UCPTE U	Delivery van (<3.5t) B250	WM 5kg EoL	WM 5kg use materials (per LC)
greenhouse	kg CO2	3,42E+03	6,44E+02	1,93E+03	6,86E+00	-5,66E+01	8,95E+02
ozone layer	kg CFC11	1,44E-03	1,29E-04	1,25E-03	7,29E-06	-2,13E-05	7,73E-05
acidification	kg SO2	2,46E+01	6,13E+00	1,41E+01	2,55E-02	-2,49E-01	4,59E+00
eutrophication	kg PO4	1,75E+00	2,50E-01	4,74E-01	2,93E-03	-1,66E-02	1,04E+00
heavy metals	kg Pb	3,70E-02	3,83E-03	1,52E-02	2,11E-05	-3,75E-04	1,83E-02
carcinogens	kg B(a)P	1,27E-04	2,88E-05	4,64E-05	8,63E-08	-3,67E-05	8,81E-05
winter smog - P.M.	kg SPM	2,04E+01	5,02E+00	1,18E+01	1,03E-02	-1,74E-01	3,81E+00
summer smog - VOCs	kg C2H4	1,02E+00	2,91E-01	4,34E-01	1,91E-02	-4,62E-02	3,23E-01
pesticides	kg act.subst	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
energy resources	MJ LHV	7,80E+04	1,23E+04	4,57E+04	8,77E+01	-8,43E+02	2,07E+04
solid waste	kg	1,69E+02	2,09E+02	0,00E+00	0,00E+00	-4,01E+01	0,00E+00
Heavy metals (air)	kg Ni eq	8,02E-03	8,36E-04	3,67E-03	6,30E-06	-3,35E-05	3,55E-03
PAHs (air)	kg PAH/20 eq	2,96E-06	2,26E-06	1,23E-06	2,41E-07	-7,77E-07	1,00E-10
Heavy metals (water)	kg Hg/20 eq	7,05E-02	5,19E-03	1,95E-02	3,31E-06	-8,89E-04	4,66E-02
POP (air)	kg TE eq	2,84E-09	2,15E-09	4,08E-10	0,00E+00	2,59E-11	2,52E-10
POP (water)	kg TE eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00