

SUPPLEMENT 2: GasSim2 Release Version 2.00.0060

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1. REVISIONS TO GASSIM2

This supplement to the GasSim2 manual covers revisions to the model in release version 2.00.0060. The previous released version number was 2.00.0054. Interim versions 2.00.0055 - 0059 were internal test versions trialled before releasing this latest version. Revisions are more substantive than the previous update. They are associated with bug fixes identified during the last six months, information on error trapping, and improvements to the functionality of the model. These improvements include a new Trace Gas database incorporating revised PI reporting thresholds; new waste composition files for each of the Devolved Administrations; and a new commercial and industrial waste composition editor.

Bug Fixes and Software Development

- Tier 2 processing has changed significantly in order to reduce hard disk space and memory requirements. Previously models with large numbers of receptors would not run because the memory requirements exceeded the 2Gb limit imposed by the operating system. Additionally very large output files were being created by aermod which meant that users often ran out of disk space. GasSim now uses the binary files that aermod can produce which are much smaller, and no longer requires all the results to be in memory simultaneously, avoiding the 2Gb limit. Various other changes have been made to further reduce the memory requirements, hard disk space usage, and speed up the processing;
- GasSim now checks whether a waste composition has been defined if it is used and gives an error message if not indicating which waste composition has not been defined (e.g. industrial waste) and where it is being used (which year and cell);
- Lateral emission of bulk gases for cells whose entire area was within 50m of the boundary were being reported as zero. This has been fixed.;
- Some justifications were never saved and others were only being saved after being entered twice. This has been fixed;
- Implausibly large values were being calculated in the results for lateral migration of trace gases. This has been fixed;
- Export of tier 2 results was only exporting the first objective – it now exports all those that are selected.;
- Some problems with the position of tables when printing to PDF files have been fixed;
- Some problems occurred when entering distances to receptors in the lateral migration module. These were caused by commas in the field and have been fixed; and
- Geosphere porosity must be greater than moisture content, but if both are chosen independently at random from overlapping ranges this may not be the case at run time. The model now chooses new values until this condition is met or 1000 choices have been made. The limit of 1000 retries avoids the software appearing to hang if consistent values are either highly unlikely or impossible.

Trace Gas Database

The trace gas database has been updated to reflect the new PI reporting thresholds (Environment Agency, 2005). From the trace gas list, it is now also possible to highlight the Priority trace gas components as defined by the Environment Agency (2004a). The distributions of these priority trace components have also been updated in accordance with Environment Agency R&D Technical Report P1-491/TR Environment Agency (2004b). The list of trace components with specific impact on odour has likewise been refreshed in review of Environment Agency guidance (2004b).

Table 1 Distribution used in the Old and New Versions of the Trace Gas Database

ID	Name	Old Distribution	New Distribution
1	Dioxins and furans (modelled as 2,3,7,8-TCDD)	SINGLE(0)	SINGLE(0)
2	Hydrochlorofluorocarbons (HCFCs) (Total)	LOGTRIANGULAR(0.02, 128.8, 916.2)	LOGTRIANGULAR(0.02, 128.8, 916.2)
3	Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230)	LOGTRIANGULAR(0.06, 102.3, 1230)
4	Halons	SINGLE(0)	SINGLE(0)
5	Acetalehyde (ethanal)	LOGTRIANGULAR(0.1,0.2, 52)	LOGUNIFORM(0.075,2.546)
6	Benzene	LOGTRIANGULAR(0.001, 0.1, 114)	LOGTRIANGULAR(3.1, 15, 73)
7	Chlorobenzene	LOGUNIFORM(0.002, 3000)	LOGUNIFORM(0.002, 3000)
8	Butadiene (modelled as 1,3-Butadiene)	LOGTRIANGULAR(5e-2, 1.45, 6)	LOGUNIFORM(1e-30,0.02)
9	Butene isomers	LOGTRIANGULAR(0.001, 0.2, 1.8)	LOGTRIANGULAR(0.001, 0.2, 1.8)
10	Vinyl chloride (chloroethene, chloroethylene)	LOGTRIANGULAR(0.001, 0.01, 7660)	LOGTRIANGULAR(1.1, 31, 730)
11	Chloroform (trichloromethane)	LOGTRIANGULAR(0.001, 0.2, 70)	LOGTRIANGULAR(0.001, 0.2, 70)
12	Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10)	LOGTRIANGULAR(0.006, 0.2, 10)
13	Para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, .05, 2.7)	LOGTRIANGULAR(0.006, .05, 2.7)
14	Ethylene Dichloride	LOGTRIANGULAR(0.006, 0.01, 1820)	LOGTRIANGULAR(0.006, 0.01, 1820)
15	Dichloromethane (methylene chloride)	LOGTRIANGULAR(0.001, .02, 1524)	LOGTRIANGULAR(0.001, .02, 1524)
16	Dimethyl Disulphide	LOGTRIANGULAR(0.001, 0.02, 40)	LOGTRIANGULAR(0.03, 0.17, 12)
17	Toluene	LOGTRIANGULAR(0.01, 0.1, 1250)	LOGTRIANGULAR(0.01, 0.1, 1250)
18	Ethyl Toluene (all isomers)	LOGTRIANGULAR(0.001, 0.01, 8.3)	LOGTRIANGULAR(0.001, 0.01, 8.3)
19	Formaldehyde (methanal)	LOGTRIANGULAR(0.2, 0.2, 52)	LOGTRIANGULAR(0.026,0.068,0.188)
20	Pentene (all isomers)	LOGTRIANGULAR(0.001, 0.2, 11)	LOGTRIANGULAR(0.24, 3.5, 12)
21	Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	LOGUNIFORM(0.001,50)	LOGUNIFORM(0.001,50)
22	Tetrachloroethylene (Tetrachloroethene)	LOGTRIANGULAR(0.001, 0.01, 7700)	LOGTRIANGULAR(0.001, 0.01, 7700)
23	Methyl Chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(0.001, 180, 1600)	LOGTRIANGULAR(0.001, 180, 1600)
24	Trichloroethylene (trichloroethene)	LOGTRIANGULAR(.01, 2.0, 608)	LOGTRIANGULAR(0.25, 1.65, 88)

25	Trimethylbenzene (all isomers)	LOGTRIANGULAR(0.001, .01, 187)	LOGTRIANGULAR(0.001, .01, 187)
27	Xylene (all isomers)	LOGTRIANGULAR(0.001, 0.001, 61784)	LOGTRIANGULAR(0.001, 0.001, 61784)
28	Total Fluoride (reported as HF)	LOGTRIANGULAR(5.6, 251.2, 735)	LOGTRIANGULAR(5.6, 251.2, 735)
29	Hydrogen Sulphide	LOGTRIANGULAR(0.00057, 2.4, 5570)	LOGTRIANGULAR(2.4, 53, 580)
30	Total Non-Methane Volatile Organic Compounds (NMVOCs)	LOGUNIFORM(5e-2, 1473)	LOGUNIFORM(5e-2, 1473)
31	Carbon Monoxide	LOGTRIANGULAR(0.11, 1.1, 5000)	LOGTRIANGULAR(0.11, 1.1, 5000)
32	Carbon Disulphide	LOGTRIANGULAR(1e-2, 0.1, 11)	LOGUNIFORM(0.9,170)
33	Carbon Tetrachloride (tetrachloromethane)	LOGTRIANGULAR(2e-4, 0.2, 152)	LOGUNIFORM(1e-30, 0.02)
34	Total Chloride (reported as HCl)	LOGTRIANGULAR(14.7, 79.5, 850)	LOGTRIANGULAR(14.7, 79.5, 850)
36	Nitrogen Oxides (NOx)	SINGLE(0)	SINGLE(0)
37	Sulphur Dioxide	LOGUNIFORM(30.8, 430.5)	LOGUNIFORM(30.8, 430.5)
39	Hydrofluorocarbons (HFCs) (Total)	SINGLE(0)	SINGLE(0)
40	Perfluorocarbons (PFCs) (Total)	SINGLE(0)	SINGLE(0)
41	Benzo(a)pyrene	UNIFORM(2E-6,6E-6)	UNIFORM(2E-6,6E-6)
42	Hexachlorocyclohexane (all isomers)	SINGLE(0)	SINGLE(0)
43	Trichlorobenzene (all isomers)	LOGTRIANGULAR(.01, 0.01, 0.13)	LOGTRIANGULAR(.01, 0.01, 0.13)
44	PAH (reported as Naphthalene)	LOGTRIANGULAR(1e-3, 0.2, 17)	LOGTRIANGULAR(1e-3, 0.2, 17)
45	Diethyl Disulphide	LOGTRIANGULAR(0.001, 0.02, 2.6)	LOGTRIANGULAR(0.001, 0.02, 2.6)
46	Dimethyl Sulphide	LOGTRIANGULAR(1e-3, 0.01, 60)	LOGTRIANGULAR(0.03, 0.73, 24.3)
47	Ethanethiol (ethyl mercaptan)	LOGTRIANGULAR(0.01, 0.01, 41.9)	LOGUNIFORM(1e-30,0.08)
48	Limonene	LOGTRIANGULAR(0.001, 0.1, 240)	LOGTRIANGULAR(0.001, 0.1, 240)
49	Methanethiol (methyl mercaptan)	LOGTRIANGULAR(5e-3, 0.01, 87)	LOGUNIFORM(1e-30,0.3)
50	Propanethiol	LOGTRIANGULAR(0.2, 0.2, 2.1)	LOGUNIFORM(1e-30, 0.09)
51	Sulphide, Total Simulations with H2S	LOGTRIANGULAR(1e-3,2.4,5575)	LOGTRIANGULAR(1e-3,2.4,5575)
52	Sulphide, Total Simulations without H2S	LOGTRIANGULAR(5e-4,8e-3,3.5)	LOGTRIANGULAR(5e-4,8e-3,3.5)
53	1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(2e-3, 0.2, 2)	LOGTRIANGULAR(2e-3, 0.2, 2)
54	1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(5e-3, 0.4, 8)	LOGTRIANGULAR(5e-3, 0.4, 8)
55	1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(5e-2, 0.25, 6.4)	LOGTRIANGULAR(5e-2, 0.25, 6.4)

56	Chlorofluoromethane	LOGTRIANGULAR(8e-3, 0.2, 110)	LOGTRIANGULAR(8e-3, 0.2, 110)
57	Dichlorofluoromethane	LOGTRIANGULAR(1e-3, 0.01, 602)	LOGTRIANGULAR(1e-3, 0.01, 602)
58	Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900)	LOGTRIANGULAR(0.005, 0.1, 9900)
59	1-Chloro-1,1-Difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31)	LOGTRIANGULAR(0.04, 0.57, 31)
60	Trichlorofluoromethane	LOGTRIANGULAR(.001, 0.01, 1000)	LOGTRIANGULAR(.001, 0.01, 1000)
61	Dichlorodifluoromethane	LOGTRIANGULAR(1e-2, 9, 790)	LOGTRIANGULAR(1e-2, 9, 790)
62	Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49)	LOGTRIANGULAR(0.1, 0.2, 49)
63	2-Chloro-1,1,1-Trifluoroethane	LOGUNIFORM(5e-2, 1.5)	LOGUNIFORM(5e-2, 1.5)
65	Freon 113	LOGTRIANGULAR(0.013, 4.8, 125)	LOGTRIANGULAR(0.013, 4.8, 125)
66	1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(1e-2, 9.8, 300)	LOGTRIANGULAR(1e-2, 9.8, 300)
67	Trichlorotrifluoroethane	LOGTRIANGULAR(1e-3, 4.8, 24)	LOGTRIANGULAR(1e-3, 4.8, 24)
68	1,1,2-Trichloroethane	LOGTRIANGULAR(4e-3, 1, 10)	LOGTRIANGULAR(4e-3, 1, 10)
69	1,1-Dichloroethane	LOGTRIANGULAR(1e-3, 0.1, 61800)	LOGTRIANGULAR(0.02, 0.28, 3.9)
70	1,1-Dichloroethene	LOGTRIANGULAR(1e-3, 0.01, 1516)	LOGTRIANGULAR(0.03, 2.8, 19)
71	1,2-Dichloropropane	SINGLE(0)	SINGLE(0)
72	2-Propanol	LOGTRIANGULAR(5e-3, 2, 34)	LOGTRIANGULAR(5e-3, 2, 34)
73	Acetone	LOGTRIANGULAR(5e-3, 0.1, 50)	LOGTRIANGULAR(5e-3, 0.1, 50)
74	Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38)	LOGTRIANGULAR(0.02, 0.4, 38)
75	Bromodichloromethane	SINGLE(0)	SINGLE(0)
76	Butane	LOGTRIANGULAR(0.19, 1.0, 709)	LOGTRIANGULAR(0.19, 1.0, 709)
77	Carbonyl sulphide	LOGTRIANGULAR(.006, 0.2, 4.4)	LOGTRIANGULAR(.006, 0.2, 4.4)
79	Chloroethane	LOGTRIANGULAR(1e-3, 0.01, 6146)	LOGUNIFORM(1e-30, 5.3)
80	Ethane	LOGTRIANGULAR(5e-3, 6.25, 200)	LOGTRIANGULAR(5e-3, 6.25, 200)
81	Ethanol	LOGTRIANGULAR(5e-3, 0.2, 810)	LOGTRIANGULAR(5e-3,0.2,810)
82	Ethylbenzene	LOGTRIANGULAR(1e-3, 0.001, 875)	LOGTRIANGULAR(1e-3, 0.001, 875)
84	Ethylene Dibromide	SINGLE(0)	SINGLE(0)
85	Fluorotrifluoromethane	LOGTRIANGULAR(.001, 0.01, 1000)	LOGTRIANGULAR(.001, 0.01, 1000)
86	Hexane	LOGTRIANGULAR(.001, 9.6, 44)	LOGTRIANGULAR(.001, 9.6, 44)
87	Mercury	SINGLE(0)	LOGUNIFORM(0.00017,0.00133)
88	Methyl Ethyl Ketone (2-butanone)	LOGTRIANGULAR(5e-3, 5E-3, 73)	LOGTRIANGULAR(5e-3, 5E-3, 73)

89	Methyl Isobutyl Ketone	LOGTRIANGULAR(5e-3, 0.2, 9.9)	LOGTRIANGULAR(5e-3, 0.2, 9.9)
91	Pentane	LOGTRIANGULAR(0.02, 0.3, 105)	LOGTRIANGULAR(0.02, 0.3, 105)
92	Propane	LOGTRIANGULAR(0.001, 1.9, 12.9)	LOGTRIANGULAR(0.001, 1.9, 12.9)
94	t-1,2-Dichloroethene	LOGTRIANGULAR(0.006, 1.0, 41)	LOGTRIANGULAR(0.02,0.24,2.6)
95	Nitric Acid	SINGLE(0)	SINGLE(0)
96	PM10s	SINGLE(0)	SINGLE(0)
97	Odour Units (Predicted)	TRIANGULAR(50000, 125000, 250000)	TRIANGULAR(50000, 125000, 250000)
98	Ethylene	UNIFORM(0.2,5.8)	UNIFORM(0.2,5.8)
99	Phenol	SINGLE(0)	SINGLE(0)
100	Nitrogen Monoxide (NO)	SINGLE(0)	SINGLE(0)
101	Nitrogen Dioxide (NO ₂)	SINGLE(0)	SINGLE(0)
102	Total Volatile Organic Compounds (VOCs)	LOGUNIFORM(5e-2, 1473)	LOGUNIFORM(5e-2, 1473)
103	1-butanethiol	N/A	LOGUNIFORM(1e-30,0.08)
104	2-butoxy ethanol	N/A	LOGUNIFORM(1e-30,0.05)
105	Arsenic	N/A	LOGTRIANGULAR(1e-4,0.0074,0.43)
106	Butyric Acid	N/A	LOGTRIANGULAR(1e-30,0.1,17.5)
107	Ethyl Butyrate	N/A	LOGUNIFORM(0.41,42)
108	Furan	N/A	LOGTRIANGULAR(0.02,0.82,6.2)

Waste Composition Files

Separate waste composition files have been created to reflect the difference between the composition of waste in each of the four Devolved Administrations using data compiled by ERM (2006) (Tables 2 – 5). The domestic waste data for England was compiled using Parfitt (2002), for Wales using NAW (2003), for Scotland using SEPA(2005) and for Northern Ireland using EHSNI (2005) and ERM(2005). The Civic Amenity data for England was also taken from Parfitt (2002) and for Wales from NAW (2003). For Northern Ireland and Wales, Civic Amenity data was not available so consequently the data for England was used. Likewise for commercial and industrial waste, data was only available for England and hence the data for each constituent country uses the information available for England, originally taken from Environment Agency (2003).

The waste compositions for subsequent years are obtained using government proposed targets for reducing biodegradable domestic waste (Waste Strategy 2000). In each year the biodegradable domestic waste of each country was reduced by the government reduction targets. The percentage of non-biodegradable domestic waste was then calculated as being the surplus, thus making 100%. All compositions for the remaining categories of waste remain unchanged throughout the time periods.

Commercial and Industrial Waste Composition Calculator

The commercial and industrial waste composition can now be specified on the basis of different commercial and industrial sectors (ERM 2006) (Tables 6 and 7). The percentages of each sector can be altered to reflect the different composition of industrial/commercial waste received at an individual landfill site. The defaults represent the average industrial and commercial waste composition for England. The user defined columns are editable and intended for use if the user knows the specific waste composition or if the waste comes from sectors which are not otherwise specified

Table 2 Waste Composition for England 2000-2010

	Domestic	Civic Amenity	Commercial	Industrial	Inert	Liquid Inert	Sewage Sludge	Composted Organic Material	Incinerator Ash	Residue from MRF	Recycling Schemes	Chemical Sludge	Industrial Liquid Waste	Water (%)	Cellulose (%)	Hemi-Cellulose (%)	Decomposition (%)
Newspapers	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (48.5)	SINGLE (9)	SINGLE (35)
Magazines	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (42.3)	SINGLE (9.4)	SINGLE (46)
Other Paper	SINGLE (19.8)	SINGLE (3.3)	SINGLE (28.8)	SINGLE (8.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (87.4)	SINGLE (8.4)	SINGLE (98)
Liquid Cartons	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Card Packaging	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Other Card	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Wood	SINGLE (3.0)	SINGLE (11.2)	SINGLE (3.3)	SINGLE (5.0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (21)	SINGLE (11)	SINGLE (75)
Textiles	SINGLE (3.3)	SINGLE (2.3)	SINGLE (1.1)	SINGLE (0.3)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (25)	SINGLE (20)	SINGLE (20)	SINGLE (50)
Disposable Nappies	SINGLE (3.3)	SINGLE (2.9)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Other Misc. Combustibles	SINGLE (0.3)	SINGLE (4.2)	SINGLE (10.4)	SINGLE (17.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Garden Waste	SINGLE (16)	SINGLE (32.1)	SINGLE (9.8)	SINGLE (4.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (25.7)	SINGLE (13)	SINGLE (62)
Other Putrescible	SINGLE (25.6)	SINGLE (14.8)	SINGLE (10.4)	SINGLE (6.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (55.4)	SINGLE (7.2)	SINGLE (76)
10mm Fines	SINGLE (4.1)	SINGLE (1.2)	SINGLE (1.9)	SINGLE (0.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (40)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Sewage Sludge	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (70)	SINGLE (14)	SINGLE (14)	SINGLE (75)
Composted Organic Material	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	UNIFORM (7.47, 9.59)	UNIFORM (7.47, 9.59)	SINGLE (57)
Incinerator Ash	SINGLE (0)	SINGLE (0)	SINGLE (0.2)	SINGLE (25.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	TRIANGULAR (0.5, 0.7, 1.5)	TRIANGULAR (0.5, 0.7, 1.5)	SINGLE (57)
Non Degradable	SINGLE (24.6)	SINGLE (28.0)	SINGLE (34.1)	SINGLE (30.7)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)

Table 3 Waste Composition for Wales 2000-2010

	Domestic	Civic Amenity	Commercial	Industrial	Inert	Liquid Inert	Sewage Sludge	Composted Organic Material	Incinerator Ash	Residue from MRF	Recycling Schemes	Chemical Sludge	Industrial Liquid Waste	Water (%)	Cellulose (%)	Hemi-Cellulose (%)	Decomposition (%)
Newspapers	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (48.5)	SINGLE (9)	SINGLE (35)
Magazines	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (42.3)	SINGLE (9.4)	SINGLE (46)
Other Paper	SINGLE (21.0)	SINGLE (3.3)	SINGLE (28.8)	SINGLE (8.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (87.4)	SINGLE (8.4)	SINGLE (98)
Liquid Cartons	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Card Packaging	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Other Card	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Wood	SINGLE (2.8)	SINGLE (11.2)	SINGLE (3.3)	SINGLE (5.0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (21)	SINGLE (11)	SINGLE (75)
Textiles	SINGLE (1.8)	SINGLE (2.3)	SINGLE (1.1)	SINGLE (0.3)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (25)	SINGLE (20)	SINGLE (20)	SINGLE (50)
Disposable Nappies	SINGLE (2.3)	SINGLE (2.9)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Other Misc. Combustibles	SINGLE (7.0)	SINGLE (4.2)	SINGLE (10.4)	SINGLE (17.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Garden Waste	SINGLE (12.7)	SINGLE (32.1)	SINGLE (9.8)	SINGLE (4.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (25.7)	SINGLE (13)	SINGLE (62)
Other Putrescible	SINGLE (17.8)	SINGLE (14.8)	SINGLE (10.4)	SINGLE (6.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (55.4)	SINGLE (7.2)	SINGLE (76)
10mm Fines	SINGLE (5.2)	SINGLE (1.2)	SINGLE (1.9)	SINGLE (0.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (40)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Sewage Sludge	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (70)	SINGLE (14)	SINGLE (14)	SINGLE (75)
Composted Organic Material	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	UNIFO RM(7.4 7, 9.59)	UNIFO RM(7.4 7, 9.59)	SINGLE (57)
Incinerator Ash	SINGLE (0)	SINGLE (0)	SINGLE (0.2)	SINGLE (25.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	TRIAN GULAR (0.5, 0.7, 1.5)	TRIAN GULAR (0.5, 0.7, 1.5)	SINGLE (57)
Non Degradable	SINGLE (29.4)	SINGLE (28.0)	SINGLE (34.1)	SINGLE (30.7)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)

Table 4 Waste Composition for Scotland 2000-2010

	Domestic	Civic Amenity	Commercial	Industrial	Inert	Liquid Inert	Sewage Sludge	Composted Organic Material	Incinerator Ash	Residue from MRF	Recycling Schemes	Chemical Sludge	Industrial Liquid Waste	Water (%)	Cellulose (%)	Hemi-Cellulose (%)	Decomposition (%)
Newspapers	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (48.5)	SINGLE (9)	SINGLE (35)
Magazines	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (42.3)	SINGLE (9.4)	SINGLE (46)
Other Paper	SINGLE (25.0)	SINGLE (9.3)	SINGLE (28.8)	SINGLE (8.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (87.4)	SINGLE (8.4)	SINGLE (98)
Liquid Cartons	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Card Packaging	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Other Card	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Wood	SINGLE (1.2)	SINGLE (12.6)	SINGLE (3.3)	SINGLE (5.0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (21)	SINGLE (11)	SINGLE (75)
Textiles	SINGLE (4.8)	SINGLE (2.2)	SINGLE (1.1)	SINGLE (0.3)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (25)	SINGLE (20)	SINGLE (20)	SINGLE (50)
Disposable Nappies	SINGLE (3.8)	SINGLE (0.3)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Other Misc. Combustibles	SINGLE (3.7)	SINGLE (13.7)	SINGLE (10.4)	SINGLE (17.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Garden Waste	SINGLE (6.7)	SINGLE (18.0)	SINGLE (9.8)	SINGLE (4.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (25.7)	SINGLE (13)	SINGLE (62)
Other Putrescible	SINGLE (21.4)	SINGLE (3.2)	SINGLE (10.4)	SINGLE (6.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (55.4)	SINGLE (7.2)	SINGLE (76)
10mm Fines	SINGLE (0.5)	SINGLE (0.8)	SINGLE (1.9)	SINGLE (0.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (40)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Sewage Sludge	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (70)	SINGLE (14)	SINGLE (14)	SINGLE (75)
Composted Organic Material	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	UNIFO RM(7.4 7, 9.59)	UNIFO RM(7.4 7, 9.59)	SINGLE (57)
Incinerator Ash	SINGLE (0)	SINGLE (0)	SINGLE (0.2)	SINGLE (25.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	TRIAN GULAR (0.5, 0.7, 1.5)	TRIAN GULAR (0.5, 0.7, 1.5)	SINGLE (57)
Non Degradable	SINGLE (32.9)	SINGLE (39.9)	SINGLE (34.1)	SINGLE (30.7)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)

Table 5 Waste Composition for Northern Ireland 2000-2010

	Domestic	Civic Amenity	Commercial	Industrial	Inert	Liquid Inert	Sewage Sludge	Composted Organic Material	Incinerator Ash	Residue from MRF	Recycling Schemes	Chemical Sludge	Industrial Liquid Waste	Water (%)	Cellulose (%)	Hemi-Cellulose (%)	Decomposition (%)
Newspapers	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (48.5)	SINGLE (9)	SINGLE (35)
Magazines	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (42.3)	SINGLE (9.4)	SINGLE (46)
Other Paper	SINGLE (18.2)	SINGLE (3.3)	SINGLE (28.8)	SINGLE (8.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (87.4)	SINGLE (8.4)	SINGLE (98)
Liquid Cartons	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Card Packaging	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Other Card	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	SINGLE (57.3)	SINGLE (9.9)	SINGLE (64)
Wood	SINGLE (2.8)	SINGLE (11.2)	SINGLE (3.3)	SINGLE (5.0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (21)	SINGLE (11)	SINGLE (75)
Textiles	SINGLE (1.8)	SINGLE (2.3)	SINGLE (1.1)	SINGLE (0.3)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (25)	SINGLE (20)	SINGLE (20)	SINGLE (50)
Disposable Nappies	SINGLE (2.3)	SINGLE (2.9)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Other Misc. Combustibles	SINGLE (7.1)	SINGLE (4.2)	SINGLE (10.4)	SINGLE (17.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (20)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Garden Waste	SINGLE (14.2)	SINGLE (32.1)	SINGLE (9.8)	SINGLE (4.7)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (25.7)	SINGLE (13)	SINGLE (62)
Other Putrescible	SINGLE (19.8)	SINGLE (14.8)	SINGLE (10.4)	SINGLE (6.8)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (65)	SINGLE (55.4)	SINGLE (7.2)	SINGLE (76)
10mm Fines	SINGLE (5.4)	SINGLE (1.2)	SINGLE (1.9)	SINGLE (0.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (40)	SINGLE (25)	SINGLE (25)	SINGLE (50)
Sewage Sludge	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (70)	SINGLE (14)	SINGLE (14)	SINGLE (75)
Composted Organic Material	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	UNIFO RM(7.4 7, 9.59)	UNIFO RM(7.4 7, 9.59)	SINGLE (57)
Incinerator Ash	SINGLE (0)	SINGLE (0)	SINGLE (0.2)	SINGLE (25.5)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (30)	TRIAN GULAR (0.5, 0.7, 1.5)	TRIAN GULAR (0.5, 0.7, 1.5)	SINGLE (57)
Non Degradable	SINGLE (28.4)	SINGLE (28.0)	SINGLE (34.1)	SINGLE (30.7)	SINGLE (100)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)	SINGLE (0)

Table 6 Commercial Waste Compositions

Waste Composition	Commercial Industry Types							
	Default	Travel Agents, Other Business, Finance, Real Estate and Computer-Related Activities Sector	Transport, Storage and Communications Sector	Social Work and Public Administration Sector	Retail Sector	Hotels and Catering Sector	Education Sector	Miscellaneous Sector
Newspapers	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Magazines	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Other Paper	SINGLE(19.8)	SINGLE(27.8)	SINGLE(23.7)	SINGLE(31.0)	SINGLE(35.5)	SINGLE(17.0)	SINGLE(21.2)	SINGLE(21.8)
Liquid Cartons	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Card Packaging	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Other Card	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Wood	SINGLE(3.0)	SINGLE(2.6)	SINGLE(6.3)	SINGLE(1.8)	SINGLE(3.9)	SINGLE(2.1)	SINGLE(2.3)	SINGLE(1.8)
Textiles	SINGLE(3.3)	SINGLE(1.6)	SINGLE(1.4)	SINGLE(1.4)	SINGLE(1.0)	SINGLE(1.6)	SINGLE(1.7)	SINGLE(1.2)
Disposable Nappies	SINGLE(3.3)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Other Misc. Combustibles	SINGLE(0.3)	SINGLE(3.9)	SINGLE(7.6)	SINGLE(18.2)	SINGLE(14.3)	SINGLE(5.1)	SINGLE(10.8)	SINGLE(23.8)
Garden Waste	SINGLE(16)	SINGLE(10.1)	SINGLE(7.7)	SINGLE(9.3)	SINGLE(6.3)	SINGLE(11.1)	SINGLE(12.3)	SINGLE(8.0)
Other Putrescible	SINGLE(25.6)	SINGLE(12.9)	SINGLE(12.7)	SINGLE(12.1)	SINGLE(8.5)	SINGLE(16.5)	SINGLE(19.1)	SINGLE(14.2)
10mm Fines	SINGLE(4.1)	SINGLE(2.3)	SINGLE(1.8)	SINGLE(2.1)	SINGLE(1.3)	SINGLE(2.5)	SINGLE(2.6)	SINGLE(1.8)
Sewage Sludge	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Composted Organic Material	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Incinerator Ash	SINGLE(0)	SINGLE(0.7)	SINGLE(0.4)	SINGLE(0.1)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0.4)
Non Degradable	SINGLE(24.6)	SINGLE(38.1)	SINGLE(38.4)	SINGLE(24)	SINGLE(29.2)	SINGLE(44.1)	SINGLE(30.0)	SINGLE(27)

Table 7 Industrial Waste Compositions

Waste Composition	Industry Types														
	Default	Food, Drink and Tobacco	Furniture and Other Manufacturing	Manufacture of Basic Metals	Manufacture of Chemicals and Chemical Products	Manufacture of Fabricated Metal Products	Manufacture of Machinery and Equipment	Manufacture of Motor Vehicles and Other Transport Equipment	Manufacture of Office Machinery, Media and Medical Equipment	Manufacture of Pulp, Paper and Paper Products	Manufacture of Textiles and Other Apparel	Manufacture of Non-Metallic Mineral Products	Production of Coke, Oil, Gas, Electricity and Water	Publishing, Printing and Recording Sector	Wood and Wood Products sector
Newspapers	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Magazines	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Other Paper	SINGLE(8.8)	SINGLE(5.4)	SINGLE(15.5)	SINGLE(0.8)	SINGLE(5.6)	SINGLE(5.9)	SINGLE(10.1)	SINGLE(7.0)	SINGLE(23.4)	SINGLE(23.0)	SINGLE(5.9)	SINGLE(2.7)	SINGLE(0.5)	SINGLE(65.8)	SINGLE(3.8)
Liquid Cartons	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Card Packaging	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Other Card	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Wood	SINGLE(5.0)	SINGLE(1.6)	SINGLE(28.7)	SINGLE(0.3)	SINGLE(1.7)	SINGLE(2.1)	SINGLE(4.4)	SINGLE(6.4)	SINGLE(3.9)	SINGLE(1.8)	SINGLE(1.5)	SINGLE(1.4)	SINGLE(0.1)	SINGLE(1.4)	SINGLE(78.4)
Textiles	SINGLE(0.3)	SINGLE(0.2)	SINGLE(1.3)	SINGLE(0.1)	SINGLE(0.5)	SINGLE(0.4)	SINGLE(0.5)	SINGLE(0.5)	SINGLE(1.0)	SINGLE(0.2)	SINGLE(1.9)	SINGLE(0.2)	SINGLE(0)	SINGLE(0.6)	SINGLE(0.4)
Disposable Nappies	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Other Misc. Combustibles	SINGLE(17.7)	SINGLE(38.6)	SINGLE(2.7)	SINGLE(71.5)	SINGLE(45.8)	SINGLE(14.3)	SINGLE(3.8)	SINGLE(6.0)	SINGLE(3.9)	SINGLE(39.6)	SINGLE(24.7)	SINGLE(43.7)	SINGLE(2.8)	SINGLE(6.0)	SINGLE(2.0)
Garden Waste	SINGLE(4.7)	SINGLE(2.0)	SINGLE(9.1)	SINGLE(0.5)	SINGLE(2.3)	SINGLE(3.0)	SINGLE(3.6)	SINGLE(3.4)	SINGLE(6.3)	SINGLE(1.5)	SINGLE(4.0)	SINGLE(1.3)	SINGLE(0.3)	SINGLE(4.2)	SINGLE(2.8)
Other Putrescible	SINGLE(6.8)	SINGLE(16.1)	SINGLE(10.3)	SINGLE(0.6)	SINGLE(2.8)	SINGLE(3.8)	SINGLE(4.7)	SINGLE(4.0)	SINGLE(7.1)	SINGLE(1.9)	SINGLE(5.8)	SINGLE(1.5)	SINGLE(0.3)	SINGLE(4.6)	SINGLE(3.1)
10mm Fines	SINGLE(0.5)	SINGLE(0.4)	SINGLE(2.0)	SINGLE(0.1)	SINGLE(0.5)	SINGLE(0.7)	SINGLE(0.8)	SINGLE(0.8)	SINGLE(1.4)	SINGLE(0.3)	SINGLE(0.9)	SINGLE(0.3)	SINGLE(0.1)	SINGLE(0.9)	SINGLE(0.6)
Sewage Sludge	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Composted Organic Material	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)	SINGLE(0)
Incinerator Ash	SINGLE(25.5)	SINGLE(0.2)	SINGLE(0.2)	SINGLE(9)	SINGLE(0.4)	SINGLE(1.7)	SINGLE(0)	SINGLE(5.9)	SINGLE(0)	SINGLE(3.5)	SINGLE(0)	SINGLE(6.6)	SINGLE(90.4)	SINGLE(0)	SINGLE(0.1)
Non Degradable	SINGLE(30.7)	SINGLE(35.5)	SINGLE(30.2)	SINGLE(17.1)	SINGLE(40.4)	SINGLE(68.1)	SINGLE(72.1)	SINGLE(66)	SINGLE(53)	SINGLE(28.2)	SINGLE(55.3)	SINGLE(42.3)	SINGLE(5.5)	SINGLE(16.5)	SINGLE(8.8)

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