



COMPARING CARBON EMISSIONS OF DIFFERENT CUP/MATERIAL CHOICES

Product & Material	Embodied Carbon* (kg CO2e / tonne)	Recycled Carbon Saving***	Standard Unit Weight (g) PINT CUP	Carbon/CO2e (g) per unit	Washing Carbon	Carbon (g) per 20 uses (= 95% Cup Return Rate)	Carbon per 10 uses (g) (= 90% Cup Return Rate)	Carbon per 5 uses (g) (= 80% Cup Return Rate)
Single Use Cup								
PP	3105	-	14	43	-	869	435	217
PET	4032	-	14	56	-	1129	564	282
Paper**	919	-	25	23	-	460	230	115
Aluminium	9123	-	18	164	-	3284	1642	821
rPET	3125	22.5%	14	44	-	875	438	219
rPP	2541	18.2%	14	36	-	711	356	178
Re-usable Cup								
PP	3105	-	40	124	6.2	248	186	155
30% rPP	2936	5.4%	40	117	6.2	241	179	148
50% rPP	2823	9.1%	40	113	6.2	237	175	144
100% rPP	2541	18.2%	40	102	6.2	225	163	133
Polycarbonate	7620	-	40	305	6.2	428	367	336
Stainless Steel	3100	-	110	341	6.7	475	408	374

* Figures from DEFRA (UK Gov) Green House Gas Conversion Factors 2022

** High score is misleading for several reasons. Defra figures do not include plastic lined paper board as a material, so closest choice of paper and board was chosen. Figures do not include end of life emissions where paper scores badly in landfill and have a low chance of recovery for recycling.

*** DEFRA recycled material figures do not include the carbon saving of reduced demand for the virgin material. As a result they show quite a low carbon reduction for recycled materials compared with other data sets. Material specific research has shown using either 100% rPET and rPP to replace virgin material can have a carbon saving effect of upto 68%.

KEY:	
Best	
Worst	