

Table 1 Elution Study on Bisphenol A

Samples	No. of Samples	Solvent	Temperature	Time	Elution Amount (ppb)	Notes	Reference Number
Tableware	4	water	60°C	5 minutes	5.1~11.8	goods not meeting specification	*91
Tableware	4	20%EtOH	60°C	5 minutes	7.4~28.9	goods not meeting specification	
Tableware	1	4% acetic acid	60°C	5 minutes	10.4	goods not meeting specification	
Tableware	4	water	95°C	5 minutes	19.0~26.3	goods not meeting specification	
Tableware	1	4% acetic acid	95°C	5 minutes	21.1	goods not meeting specification	
Tableware	4	n-heptan	25°C	5 minutes	28.9~39.1	goods not meeting specification	
Nursing bottles	1	water	60°C	5 minutes	ND(<0.5)		*91
Nursing bottles	4	20%EtOH	60°C	5 minutes	ND(<0.5)		
Nursing bottles	1	4% acetic acid	60°C	5 minutes	ND(<0.5)		
Nursing bottles	4	water	95°C	5 minutes	ND(<0.5)~0.5		
Nursing bottles	1	4% acetic acid	95°C	5 minutes	ND(<0.5)		
Nursing bottles	1	n-heptan	25°C	5 minutes	ND(<0.5)		
Tableware	6	water	95°C	5 minutes	ND(<0.5)~4.6		*91
Tableware	6	20%EtOH	60°C	5 minutes	ND(<0.5)~2.9		
Plastic bottles	6	n-heptan	25°C	60 minutes	ND(<5)~18	Returnable model project	*92
Plastic bottles	6	20%EtOH	60°C	30 minutes	ND(<5)~100	Returnable model project	
Plastic bottles	6	water	95°C	30 minutes	ND(<5)~180	Returnable model project	
Plastic bottles	6	4% acetic acid	95°C	30 minutes	ND(<5)~88	Returnable model project	
Tableware and nursing bottles	67	water, n-heptan	in accordance with the Food Sanitation Law	in accordance with the Food Sanitation Law	ND(<100)~180		*93
Nursing bottles	7	water	95°C	no description	ND(<0.2)~5.5		*95
Nursing bottles	7	water	26°C	no description	ND(<0.2)		
Vegetable cans	20	juice in can	—	—	ND~22.9µg/can		*94
Tableware for school lunch	30	water	80°C (allowed to cool)	30 minutes	ND(<0.5)	15 samples were used ones(1 to 3 years)	*96
Tableware for school lunch	30	soup	80 (allowed to cool)	30 minutes	ND(<10)	15 samples were used ones(1 to 3 years)	
Tableware for school lunch	30	soup	60°C (allowed to cool)	30 minutes	ND(<10)	15 samples were used ones(1 to 3 years)	
Tableware for school lunch	6	olive oil	60°C (allowed to cool)	30 minutes	ND(<50)	3 samples were used ones(1 to 3 years)	
Tableware for school lunch	15	n-heptan	25°C (kept warm)	60 minutes	ND(<0.5)~1.0		
Tableware for school lunch	15	water	60°C (kept warm)	30 minutes	ND(<0.5)		
Tableware for school lunch	15	20%EtOH	60°C (kept warm)	30 minutes	ND(<0.5)~0.6		
Tableware for school lunch	15	4% acetic acid	60°C (kept warm)	30 minutes	ND(<0.5)		

Note 1: ND means below detection limit.

Note 2: Products not meeting specifications mean polycarbonate A-products containing more than 500 ppm of bisphenol A. (this level is the standard level according to the Food Sanitation Law). These products have been recalled as violating against the Food Sanitation Law.

Table 2

Elution Study on Styrene Monomer, Dimer and Trimer

Sample	No. of Samples	Solvent	Temperature	Time	Elution Amount	Reference Number
Food containers	9	water	60°C	30 minutes	Dimer ND(<0.01 µg/cm ²)	*112
					Trimer ND(<0.01 µg/cm ²)	
		20% ethanol	60°C	30 minutes	Dimer ND(<0.01 µg/cm ²)	
					Trimer 0.01~0.02 µg/cm ²	
		50% ethanol	60°C	30 minutes	Dimer ND(<0.01 µg/cm ²)	
					Trimer 0.06~0.14 µg/cm ²	
Food containers	19	water	Room temperature	30 minutes	Monomer ND(<0.01)~0.12 ppm	*113
			25°C	1 hour	Monomer ND(<0.01)~1.74 ppm	
		n-heptan	40°C	1 hour	Monomer ND(<0.01)~4.60 ppm	
Food containers	14	water	100°C	20 minutes	Monomer 0.003~0.044 mg/L	*114
Polystyrene-molded products	1	water	90°C	30 minutes	Dimer ND(<0.01 mg/L)	*115
					Trimer ND(<0.01 mg/L)	
		4% acetic acid	90°C	30 minutes	Dimer ND(<0.01 mg/L)	
					Trimer ND(<0.01 mg/L)	
		20% ethanol	90°C	30 minutes	Dimer ND(<0.01 mg/L)	
					Trimer ND(<0.01 mg/L)	
		50% ethanol	90°C	30 minutes	Dimer 0.4 mg/L	
					Trimer 2.5 mg/L	
Food containers	12	water	100°C	5 minutes	Monomer 1~33 ppb	*116
Cup noodles in a polystyrene container	8	soup, cooking waste, noodles	Boiling water	10 minutes	Dimer ND(<5 ppb)	*117
					Trimer ND(<5 ppb)~62 ppb	
Cup noodles in a polystyrene container	3	water	95°C	10 minutes	Monomer 1~2 ppb	*117
					Dimer ND(<1 ppb)	
					Trimer ND(<1 ppb)	
Cup noodles in a polystyrene container	3	salad oil	95°C	10 minutes	Monomer 20~100 ppb	*117
					Dimer 50~100 ppb	
					Trimer 20 ppb~1.6 ppm	

Note: ND means below detection limit.

Table 3

Elution Study on Phthalates

Sample	No. of Samples	Measured Substance	Eluting Fluid	Eluting Condition	Elution Amount (ppb)	Notes	Reference Number
Plastic packaged foods	260	DEHP	—	—	65 (drinks)		*127
		DEHP	—	—	290 (foods)		
Pie	8	DEP	—	—	1.8		*127
Cheese and butter	—	DEHP	—	—	0.2~16.8		*128
	—	DEHP	—	—	2.5~7.3		
Vinyl chloride toys	10	DBP,DOP,DHP,DNP	—	—	—	0.2~24% (contents)	*129
Vinyl chloride toys	—	phthalates	—	—	—	10~40% (contents)	*130
Vinyl chloride toys	20	DINP	Saliva	15 minutes	1.38 µg/min	Study on amounts migrating into volunteer's saliva	*131
	10	DINP	Saliva	15 minutes	2.44 µg/min		
	10	DINP	Saliva	15 minutes	1.63 µg/min		
Vinyl chloride toys	10	DINP	Artificial saliva	30 minutes, 20°C	2.5 µg/min	eluted using a rotating device (64 rpm)	*131
	10	DINP	Artificial saliva	30 minutes, 20°C	4.1 µg/min		