

## Standards for Apparatus and Container-Packages made of Synthetic Resins

### 1.General Standards

Test Type	Materials test		Elution test			
	Test item	Standards	Test item	Leaching solution	Leaching conditions	Standards
Synthetic resin in general	Cadmium, Lead	Not more than 100 µg/g	Heavy Metal	4% acetic acid	60°C, 30min. *1	Not more than 1 µg/ml
			Quality of potassium permanganate (except for Phenolic Resin, Melamine Resin, and Urea Formaldehyde Resin)	Water	60°C, 30min. *1	Not more than 10 µg/ml

### 2.Specific Standards

Test Type	Materials test		Elution test			
	Test item	Standards	Test item	Leaching solution	Leaching conditions	Standards
Phenolic Resin, Melamine Resin, and Urea Formaldehyde Resin			Phenol	Water	60°C, 30min. *1	Not more than 5 µg/ml
			Formaldehyde	Water	60°C, 30min. *1	Not determined
			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 µg/ml
				20% ethanol	60°C, 30min.	
				Water	60°C, 30min. *1	
4% acetic acid						
Synthetic resin made of formaldehyde			Formaldehyde	Water	60°C, 30min. *1	Not determined
			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 µg/ml
				20% ethanol	60°C, 30min.	
				Water	60°C, 30min. *1	
				4% acetic acid		
Polyvinyl chloride	Dibutyl tin compounds	Not more than 50 µg/g	Evaporation residue *3	heptan	25°C, 1hr.	Not more than 150 µg/ml
	Cresol phosphate	Not more than 1,000 µg/g		20% ethanol	60°C, 30min.	Not more than 30 µg/ml
	Vinyl chloride	Not more than 1 µg/g		Water	60°C, 30min. *1	
				4% acetic acid		

Test Type	Materials test		Elution test				
	Test item	Standards	Test item	Leaching solution	Leaching conditions	Standards	
Polyethylene and Polypropylene			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 µg/ml Not more than 150 µg/ml for a sample used at the temperature of 100°C or less	
				20% ethanol	60°C, 30min.		Not more than 30 µg/ml
				Water	60°C, 30min. *1		
				4% acetic acid			
Polystyrene	Volatile substance *2	Not more than 5,000 µg/g	Evaporation residue *3	heptan	25°C, 1hr.	Not more than 240 µg/ml	
Polystyrene foam (Limited to that using hot water)	Volatile substance *2	Not more than 2,000 µg/g		20% ethanol	60°C, 30min.	Not more than 30 µg/ml	
	Styrene	Not more than 1,000 µg/g		Water	60°C, 30min. *1		
	Ethylbenzene	Not more than 1,000 µg/g		4% acetic acid			
Polyvinylidene chloride	Barium	Not more than 100 µg/g	Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 µg/ml	
				20% ethanol	60°C, 30min.		
	Vinylidene chloride	Not more than 6 µg/g		Water	60°C, 30min. *1		
				4% acetic acid			
Polyethylene terephthalate			Antimony	4% acetic acid	60°C, 30min. *1	Not more than 0.05 µg/ml	
			Germanium	4% acetic acid	60°C, 30min. *1	Not more than 0.1 µg/ml	
			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 µg/ml	
				20% ethanol	60°C, 30min.		
				Water	60°C, 30min. *1		
				4% acetic acid			
Polymethyl methacrylate			Methyl methacrylate	20% ethanol	60°C, 30min.	Not more than 15 µg/ml	
			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 µg/ml	
				20% ethanol	60°C, 30min.		
				Water	60°C, 30min. *1		
				4% acetic acid			

Type \ Test	Materials test		Elution test			
	Test item	Standards	Test item	Leaching solution	Leaching conditions	Standards
Nylon			$\epsilon$ -Caprolactam	20% ethanol	60°C, 30min.	Not more than 15 $\mu$ g/ml
			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 $\mu$ g/ml
				20% ethanol	60°C, 30min.	
				Water	60°C, 30min. *1	
4% acetic acid						
Polymethyl pentene			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 120 $\mu$ g/ml
				20% ethanol	60°C, 30min.	Not more than 30 $\mu$ g/ml
				Water	60°C, 30min. *1	
				4% acetic acid		
Polycarbonate	Bisphenol A (including phenol and <i>p-t</i> -butylphenol)	Not more than 500 $\mu$ g/g	Bisphenol A *3 (including phenol and <i>p-t</i> -butylphenol)	heptan	25°C, 1hr.	Not more than 2.5 $\mu$ g/ml
				20% ethanol	60°C, 30min.	
				Water	60°C, 30min. *1	
				4% acetic acid		
	Diphenylcarbonate	Not more than 500 $\mu$ g/g	Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 $\mu$ g/ml
				20% ethanol	60°C, 30min.	
	Amines (triethylamine and tributylamine)	Not more than 1 $\mu$ g/g		Water	60°C, 30min. *1	
				4% acetic acid		
Polyvinyl alcohol			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 $\mu$ g/ml
				20% ethanol	60°C, 30min.	
				Water	60°C, 30min. *1	
				4% acetic acid		
Polylactic acid			Lactic acid	Water	60°C, 30min. *1	Not more than 30 $\mu$ g/ml
			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 $\mu$ g/ml
				20% ethanol	60°C, 30min.	
				Water	60°C, 30min. *1	
4% acetic acid						
Polyethylene naphthalate			Germanium	4% acetic acid	60°C, 30min. *1	Not more than 0.1 $\mu$ g/ml
			Evaporation residue *3	heptan	25°C, 1hr.	Not more than 30 $\mu$ g/ml
				20% ethanol	60°C, 30min.	
				Water	60°C, 30min. *1	
4% acetic acid						

\*1 95°C for 30 minutes when used at the temperature exceeding 100°C.

\*2 A total of styrene, toluene, ethylbenzene, isopropylbenzene, and n-propylbenzene.

\*3 The below solvent is used as leaching solution in apparatus and container-packages for the below food, respectively.

Food		Leaching solution
Fats and oils and fatty foods		heptan
Alcoholic bevarages		20% ethanol
Foods except for fats and oil and fatty foods and alcoholic bevarages	pH value exceed 5.	Water
	pH value is 5 or less	4% acetic acid