Specification for Synthetic-Resin Apparatus, Containers, or Packaging

(Notification No. 370, issued by the Ministry of Health and Welfare of Japan, dated in 1959)

Final revision by Notification No.380 (2020)

No.	Type of Synthetic resin	Representative Price (JPY) 1 condition of use and 4 solvents for Evaporation residue.
1	Mainly composed of phenol resin (PF), melamine resin (MF) or urea resin (UF)	46000
2	Mainly made of formaldehyde (except PF, MF, UF)	44500
3	Mainly composed of polyvinyl chloride (PVC)	92500
4	Mainly composed of polyethylene (PE) or polypropylene (PP)	38500
5	Mainly composed of polystyrene (PS)	49500
6	Mainly composed of polyvinylidene chloride (PVDC)	64500
7	Mainly composed of polyethylene terephthalate (PET)	53500
8	Mainly composed of polymethyl methacrylate (PMMA)	49500
9	Mainly composed of polyamide (PA)	50500
10	Mainly composed of polymethyl pentene (PMP)	38500
11	Mainly composed of polycarbonate (PC)	124500
12	Mainly composed of polyvinyl alcohol (PVA)	38500
13	Mainly composed of polylactic acid (PLA)	53500
14	Mainly composed of polyethylene naphthalate (PEN)	46000
15	Synthetic resin in general (general standards)	18000

Before order, please confirm;

· · · · · · · · · · · · · · · · · · ·
The test parameters are determined by,
☐ Kind of Resin. What is the main material of Apparatus or Container-Packages
☐ Is it single layerd, multi layerd or laminated?
Elution conditons are determined by
☐ Condition of use. How high temprature is the material used?
≦100°C and/or >100°C
☐ Is there a specific side which contact with food?
□ Is there any printing or coating on its surface?
Solvents for Evaporation residue are determined by
☐ What kind of foods are in contact with the apparatus or Packages?
1) Fats, oils and fatty foods (Heptane)
2) Alcoholic beverages (20% ethanol)
3) Other foods

NOTES:Test samples of laminated products for material testing.

A laminated product is tested on the food contact side of the product.

3)-1 pH over 5 (water)

3)-2 pH 5 or less (4% Acetic Acid)

In order to perform material testing, a single material of the food contact side is required as a form of pellets or films. When a single material is not provided, peeling off the resin from the laminated product will be available with an extra charge (about JPY4000).

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1. Mainly composed of phenol resin (PF), melamine resin (MF) or urea resin (UF)								
Test Item			Standard	Elution condition		Unit Price		
	rest Item		Stariuaru	Condition of use ≦100°C	Condition of use>100°C	(JPY)		
Material Test	Cadmium and Lead	Not exceed the absorbar	xceed the absorbance of the standard solution (100 μg/g or less)			11000		
	Heavy metals	Not darker in color than	arker in color than the control solution (1 µg/mL or less)		4% acetic acid 95°C × 30min	3000		
	Phenol	Not exceed the absorba	t exceed the absorbance of the standard solution (5 $\mu g/mL$ or less)		Water 95°C × 30min	5500		
	Formaldehyde	Not darker in color than	ot darker in color than the contrast solution (about 4 μg/mL or less)		Water 93 C × 30mm	6000		
Elution Test		Fats, oils and fatty foods		Heptane 2	5°C × 1hour	7000		
		Alcoholic beverages		20 % ethanol	60°C × 30min	4500		
	Evaporation residue	vaporation residue pH over 5 30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500			
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500		

2. Mainly made of formaldehyde (except PF, MF, UF)							
	Test Item	st Item Standard		Elution condition		Unit Price	
	rest item		Stariuaru	Condition of use $\leq 100^{\circ}$ C	Condition of use>100°C	(JPY)	
Material Test	Cadmium and Lead	Not exceed the absorbar	exceed the absorbance of the standard solution (100 µg/g or less)		11000		
	Heavy metals	Not darker in color than	the control solution (1 µg/mL or less)	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000	
Elution	Formaldehyde	Not darker in color than	the contrast solution (about 4 µg/mL or less)			6000	
Test		Fats, oils and fatty foods	beverages 30 ug/ml or less	Heptane 25°C × 1hour		7000	
		Alcoholic beverages		20 % ethanol	60°C × 30min	4500	
	Evaporation residue	pH over 5		Water 60°C × 30min	Water 95°C × 30min	4500	
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500	

3. Mainly composed of polyvinyl chloride (PVC)								
Test Item		2		Elution condition		Unit		
	rest item		Standard	Condition of use ≦100°C	Condition of use>100°C	Price (JPY)		
	Cadmium and Lead	Not exceed the absorbar	nce of the standard solution (100 $\mu g/g$ or less)	s)		11000		
Material Test	Dibutyl tin compound	Not larger than the peak	area of the standard solution (50 μg/g or less)		20000			
	Cresyl phosphate	Not larger than the peak	area of the standard solution (1000 μ g/g or less)	s)				
	Vinyl chloride	Not larger than the peak	ot larger than the peak area of the standard solution (1 $\mu g/g$ or less)			17000		
	Heavy metals	Not darker in color than	ot darker in color than the control solution (1 µg/mL or less)		4% acetic acid 95°C × 30min	3000		
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000		
Elution		Fats, oils and fatty foods	150 μg/mL or less	Heptane 2	5°C × 1hour	7000		
Test		Alcoholic beverages		20 % ethanol	60°C × 30min	4500		
	Evaporation residue pH over 5 pH 5 or less	30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500			
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500		

4. Maintainean and affinish day (PE) as a harmonidae (PD)								
4. Mainly composed of polyethylene (PE) or polypropylene (PP)								
Test Item			Standard	Elution o	condition	Unit Price		
	rose reom			Condition of use ≦100°C	Condition of use>100°C	(JPY)		
Material Test	Cadmium and Lead	Not exceed the absorba	xceed the absorbance of the standard solution (100 µg/g or less)					
	Heavy metals	Not darker in color than	darker in color than the control solution (1 µg/mL or less)		4% acetic acid 95°C × 30min	3000		
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000		
Elution Test		Fats, oils and fatty foods	When Condition for use is $>100^{\circ}C:30~\mu g/mL$ or less When Condition for use is $\le100^{\circ}C:150~\mu g/mL$ or less	Heptane 2	5°C × 1hour	7000		
	Evenovation vasidus	Alcoholic beverages		20 % ethanol	60°C × 30min	4500		
	Evaporation residue	pH over 5 30 μg/mL or less	30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500		
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500		

5. Mainly composed of polystyrene (PS)								
Test Item		0		Elution	condition	Unit		
	rest Item		Standard	Condition of use ≦100°C	Condition of use>100°C	Price (JPY)		
	Cadmium and Lead	Not exceed the absorbar	d the absorbance of the standard solution (100 µg/g or less)			11000		
Material Test	Ethyl benzene,		ne foam (limited to that using hot water), an 2 mg/g and styrene and ethyl benzene shall be espectively.			11000		
	Heavy metals	Not darker in color than	ot darker in color than the control solution (1 μg/mL or less)		4% acetic acid 95°C × 30min	3000		
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000		
Elution		Fats, oils and fatty foods	240 μg/mL or less	Heptane 2	25°C×1hour	7000		
Test		Alcoholic beverages		20 % ethanol	60°C × 30min	4500		
	Evaporation residue	pH over 5	30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500		
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500		

6. Mainly composed of polyvinylidene chloride (PVDC)								
Test Item Standard		Chan danid	Elution condition		Unit Price			
	rest Item		Standard	Condition of use $\leq 100^{\circ}$ C	Condition of use>100°C	(JPY)		
Material	Cadmium and Lead	Not exceed the absorbar	nce of the standard solution (100 µg/g or less)	f the standard solution (100 μg/g or less)				
Test	Barium	Not exceed the absorba	nce of the standard solution (100 $\mu g/g$ or less)					
	Vinylidene chloride	Not larger than the peak area of the standard solution (6 $\mu g/g$ or less)				17000		
	Heavy metals	Not darker in color than	t darker in color than the control solution (1 µg/mL or less)		4% acetic acid 95°C × 30min	3000		
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000		
Elution		Fats, oils and fatty foods		Heptane 2	5°C × 1hour	7000		
Test		Alcoholic beverages		20 % ethanol	60°C × 30min	4500		
	Evaporation residue	pH over 5	30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500		
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500		

7. Mainly composed of polyethylene terephthalate (PET)							
	Test Item	0		Elution o	condition	Unit	
	rest item		Standard	Condition of use ≦100°C	Condition of use>100°C	Price (JPY)	
Material Test	Cadmium and Lead	Not exceed the absorbar	exceed the absorbance of the standard solution (100 µg/g or less)			11000	
	Heavy metals	Not darker in color than	darker in color than the control solution (1 µg/mL or less)		4% acetic acid 95°C × 30min	3000	
	Quantity of KMnO4 consumed	10 μg/mL or less	g/mL or less		Water 95°C × 30min	4000	
	Antimony	Not exceed the absorba	t exceed the absorbance of the standard solution (0.05 µg/mL or less)		4% acetic acid	7500	
Elution	Germanium	Not exceed the absorba	ot exceed the absorbance of the standard solution (0.1 µg/mL or less)		95°C × 30min	7500	
Test		Fats, oils and fatty foods		Heptane 25°C × 1hour		7000	
		Alcoholic beverages		20 % ethanol	60°C × 30min	4500	
	Evaporation residue	pH over 5 30 μg/mL or less	30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500	
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500	

8. Mainly composed of polymethyl methacrylate (PMMA)							
	Test Item	0		Elution condition		Unit Price	
	rest item		Standard	Condition of use ≦100°C	Condition of use>100°C	(JPY)	
Material Test	Cadmium and Lead	Not exceed the absorbar	nce of the standard solution (100 µg/g or less)			11000	
	Heavy metals	Not darker in color than	the control solution (1 µg/mL or less)	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000	
Elution	Methyl methacrylate	Not larger than the peak	Not larger than the peak area of the standard solution (15 µg/mL or less)		60°C × 30min	11000	
Test		Fats, oils and fatty foods		Heptane 25°C × 1hour		7000	
		Alcoholic beverages		20 % ethanol	60°C × 30min	4500	
	Evaporation residue	vaporation residue pH over 5 30 μg/mL or less	30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500	
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500	

9. Mair). Mainly composed of polyamide (PA)								
	Test Item	Standard		Elution o	Elution condition				
	rest item		Stariuaru	Condition of use ≦100°C	Condition of use>100°C	Price (JPY)			
Material Test	Cadmium and Lead	Not exceed the absorbar	nce of the standard solution (100 µg/g or less)			11000			
	Heavy metals	Not darker in color than	darker in color than the control solution (1 µg/mL or less)		4% acetic acid 95°C × 30min	3000			
	Quantity of KMnO4 consumed	10 μg/mL or less	0 μg/mL or less		Water 95°C × 30min	4000			
Elution	Caprolactam	Not larger than the peak	Not larger than the peak area of the standard solution (15 µg/mL or less)		60°C × 30min	12000			
Test		Fats, oils and fatty foods		Heptane 25°C × 1hour		7000			
		Alcoholic beverages		20 % ethanol	60°C × 30min	4500			
	Evaporation residue	pH over 5	30 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500			
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500			

10. Mainly composed of polymethyl pentene (PMP)								
	Test Item		Standard	Elution condition		Unit Price		
	rest item		Stariuaru	Condition of use $\leq 100^{\circ}$ C	Condition of use>100°C	(JPY)		
Material Test	Cadmium and Lead	Not exceed the absorbar	exceed the absorbance of the standard solution (100 μg/g or less)		11000			
	Heavy metals	Not darker in color than	t darker in color than the control solution (1 μg/mL or less)		4% acetic acid 95°C × 30min	3000		
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000		
Elution		Fats, oils and fatty foods	120 μg/mL or less	Heptane 2	5°C × 1hour	7000		
Test		Alcoholic beverages		20 % ethanol	60°C × 30min	4500		
	Evaporation residue	pH over 5 30 µg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4500			
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500		

11. Mainly composed of polycarbonate (PC)							
Test Item Standard Elution condition					condition	Unit	
l est item		Standard		Condition of use ≦100°C	Condition of use>100°C	Price (JPY)	
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)				11000	
	Bisphenol A	500 μg/g or less (Includ	ing phenol and p-tert-butylphenol)			※1 27000	
	Diphenyl carbonate	500 μg/g or less				27000	
	Amines	1 μg/g or less (Triethylamine and tributylamine)				22000	
	Heavy metals	Not darker in color than the control solution (1 µg/mL or less)		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000	
	Bisphenol A	Fats, oils and fatty foods		Heptane 25°C × 1hour		※ 2	
		Alcoholic beverages		20 % ethanol	60°C × 30min	4	
Elution		pH over 5	2.5 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	solvents	
Test		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	37000	
		Fats, oils and fatty foods		Heptane 25°C × 1hour		7000	
		Alcoholic beverages	30 μg/mL or less	20 % ethanol 60°C × 30min		4500	
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4500	
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500	

X1 JPY27000 when Bisphenol A and Diphenyl carbonate are tested at a time. When tested separately, Bisphenol A is JPY22000 and Diphenyl carbonate is JPY17000.

X2 1 solvent: JPY22000, 2 solvents: JPY27000, 3 solvents: JPY32000, 4 solvents: JPY 37000.

12. Mainly composed of polyvinyl alcohol (PVA)							
Test Item Standard Elution condition					ondition	Unit Price	
rest item				Condition of use ≦100°C	Condition of use>100°C	(JPY)	
Material Test	Cadmium and Lead	Not exceed the absorba	nce of the standard solution (100 µg/g or less)			11000	
	Heavy metals	Not darker in color than the control solution (1 µg/mL or less)		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000	
Elution	Evaporation residue	Fats, oils and fatty foods	s - 30 μg/mL or less	Heptane 25°C × 1hour		7000	
Test		Alcoholic beverages		20 % ethanol 60°C × 30min		4500	
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4500	
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500	

13. Mainly composed of polylactic acid (PLA)						
Elution condition					condition	Unit
	Test Item	Standard		Condition of use ≦100°C	Condition of use>100°C	Price (JPY)
Material Test	Cadmium and Lead	Not exceed the absorbar	nce of the standard solution (100 µg/g or less)			11000
	Heavy metals	Not darker in color than the control solution (1 µg/mL or less)		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000
Elution	Total lactic acid	Not larger than the peak area of the standard solution (30 μ g/mL or less)				15000
Test	Evaporation residue	Fats, oils and fatty foods	<u>·</u>	Heptane 25°C × 1hour		7000
		Alcoholic beverages		20 % ethanol 60°C × 30min		4500
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4500
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500

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14. Mainly composed of polyethylene naphthalate (PEN)							
Test Item Standard Elution condition					ondition	Unit Price	
	rest item			Condition of use $\leq 100^{\circ}$ C	Condition of use $> 100^{\circ}$ C	(JPY)	
Material Test	Cadmium and Lead	Not exceed the absorba	nce of the standard solution (100 µg/g or less)			11000	
	Heavy metals	Not darker in color than	the control solution (1 µg/mL or less)	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Quantity of KMnO4 consumed	10 μg/mL or less		Water 60°C × 30min	Water 95°C × 30min	4000	
Elution	Germanium	Not exceed the absorbance of the standard solution (0.1 µg/mL or less)		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	7500	
Test	Evaporation residue	Fats, oils and fatty foods	s 30 μg/mL or less	Heptane 25°C × 1hour		7000	
		Alcoholic beverages		20 % ethanol	60°C × 30min	4500	
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4500	
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4500	

15. Synthetic resin in general (general standard)							
Test Item		Standard	Elution o	Unit Price			
			Condition of use ≦100°C	Condition of use>100°C	(JPY)		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 $\mu g/g$ or less)			11000		
Elution	Heavy metals	Not darker in color than the control solution (1 μg/mL or less)	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000		
Test	Quantity of KMnO4 consumed	10 μg/mL or less	Water 60°C × 30min	Water 95°C × 30min	4000		

Specification for Synthetic-Resin Apparatus, Containers, or Packaging

Required amounts of test samples

- 1. Required amounts of each test samples
- 1. Mainly composed of phenol resin (PF), melamine resin (MF) or urea resin (UF)

 For each synthetic resin, the required amount for one condition of operating temperature is shown.

Table-1 Required amounts of test samples

<u> </u>	l able-i	Required amounts of test sam	ipies		
Test category		ElutionTest			
Type of Synthetic resin	Material Test	soaking extraction	one-side extraction	filling extraction	
1. phenol resin (PF), melamine resin (MF) or urea resin (UF)	3g				
Mainly made of formaldehyde (except PF, MF, UF)					
4. polyethylene (PE) or polypropylene (PP)					
7. polyethylene terephthalate (PET)		According to Evaporation			
8. polymethyl methacrylate (PMMA)		residue condition, * 1 condition: minimum 1 sheet. *4 conditions: minimum 3 sheets. (1 sheet: 210 mm × 297 mm, A4 size)	According to Evaporation residue condition, * 1condition: minimum 3 sheets. *4conditions: minimum 9 sheets. (1sheet: 210mm × 297mm, A4 size)		
9. polyamide (PA)	3g			Contact us	
10. polymethyl pentene (PMP)					
12. polyvinyl alcohol (PVA)					
13. polylactic acid (PLA)					
14. polyethylene naphthalate (PEN)					
3. polyvinyl chloride (PVC)	10g				
5. polystyrene (PS)	5g				
6. polyvinylidene chloride (PVDC)	8g				
11. polycarbonate (PC)	9g				
15. Synthetic resin in general (general standard)	3g	minimum 1 sheet (1sheet : 210mm × 297mm, A4 size)			

2. Test samples of laminated products for material testing.

A laminated product is tested on the food contact side of the product.

In order to perform material testing, a single material of the food contact side is required as a form of pellets or films. When a single material is not provided, peeling off the resin from the laminated product will be available with an extra charge (about JPY4000).