

**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)

**Representative Price(JPY)**

Tax excluded

No.	Type of Synthetic resin	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)	43,000
2	Mainly made of formaldehyde (except PF, MF, UF)	42,000
3	Mainly composed of polyvinyl chloride(PVC)	84,000
4	Mainly composed of polyethylene(PE) or polypropylene(PP)	36,000
5	Mainly composed of polystyrene(PS)	47,000
6	Mainly composed of polyvinylidene chloride(PVDC)	59,000
7	Mainly composed of polyethylene terephthalate(PET)	50,000
8	Mainly composed of polymethyl methacrylate(PMMA)	47,000
9	Mainly composed of polyamide(PA)	47,000
10	Mainly composed of polymethyl pentene(PMP)	36,000
11	Mainly composed of polycarbonate(PC)	116,000
12	Mainly composed of polyvinyl alcohol(PVA)	36,000
13	Mainly composed of polylactic acid(PLA)	51,000
14	Mainly composed of polyethylene naphthalate (PEN)	43,000
15	Synthetic resin in general (general standards)	17,000

**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 layered, multi layered 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
    - 3)-1 pH over 5(water)
    - 3)-2 pH 5 or less(4% Acetic Acid)

NOTES: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 JPY4,000).

## Specification for Synthetic-Resin Apparatus, Containers, or Packaging

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1. Mainly composed of phenol resin(PF), melamine resin(MF) or urea resin(UF)						
Test Item		Standards	Elution condition		Unit Price (JPY)	
			Condition of use >100°C	Condition of use ≤100°C		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)			10000	
	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)				
Elution Test	Phenol	Not exceed the absorbance of the standard solution (5 µg/ml or less)	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Formaldehyde	Not darker in color than the contrast solution (about 4 µg/ml or less)	Water 60°C × 30min	Water 95°C × 30min	5000	
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less	Heptane 25°C × 1hour		7000
		Alcoholic beverages		20 % ethanol 60°C × 30min		4000
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4000
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000

2. Mainly made of formaldehyde (except PF,MF,UF)						
Test Item		Standards	Elution condition		Unit Price (JPY)	
			Condition of use >100°C	Condition of use ≤100°C		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)			10000	
	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)				
Elution Test	Quantity of KMnO4 consumed	10 µg/ml or less	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Formaldehyde	Not darker in color than the contrast solution (about 4 µg/ml or less)	Water 60°C × 30min	Water 95°C × 30min	4000	
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less	Heptane 25°C × 1hour		6000
		Alcoholic beverages		20 % ethanol 60°C × 30min		7000
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4000
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000

3. Mainly composed of polyvinyl chloride(PVC)						
Test Item		Standards	Elution condition		Unit Price (JPY)	
			Condition of use >100°C	Condition of use ≤100°C		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)			10000	
	Dibutyl tin compound	Not larger than the peak area of the standard solution (50 µg/g or less)			18000	
	Cresyl phosphate	Not larger than the peak area of the standard solution (1000 µg/g or less)			15000	
	Vinyl chloride	Not larger than the peak area of the standard solution (1 µg/g or less)			15000	
Elution Test	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	
	Evaporation residue	Fats, oils and fatty foods	150 µg/ml or less	Heptane 25°C × 1hour		7000
		Alcoholic beverages	30 µg/ml or less	20 % ethanol 60°C × 30min		4000
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4000
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000

4. Mainly composed of polyethylene(PE) or polypropylene(PP)						
Test Item		Standards		Elution condition		Unit Price (JPY)
				Condition of use >100°C	Condition of use ≤100°C	
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)				10000
	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)				4% acetic acid 60°C × 30min
Elution Test	Quantity of KMnO4 consumed	10 µg/ml or less		Water 60°C × 30min	Water 95°C × 30min	4000
	Evaporation residue	Fats, oils and fatty foods	When Condition for use is >100°C: 30 µg/ml or less When Condition for use is ≤100°C: 150 µg/ml or less	Heptane 25°C × 1hour		7000
		Alcoholic beverages	30 µg/ml or less	20 % ethanol 60°C × 30min		4000
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4000
pH 5 or less		4% acetic acid 60°C × 30min		4% acetic acid 95°C × 30min	4000	

5. Mainly composed of polystyrene(PS)							
Test Item		Standards		Elution condition		Unit Price (JPY)	
				Condition of use >100°C	Condition of use ≤100°C		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)				10000	
	Volatile substances (Styrene, Toluene, Ethyl benzene, Isopropyl benzene, Propylbenzene)	5 mg/g or less But in case of polystyrene foam (limited to that using hot water), this shall be not more than 2 mg/g and styrene and ethyl benzene shall be not more than 1 mg/g, respectively.					
Elution Test	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	
	Evaporation residue	Fats, oils and fatty foods	240 µg/ml or less		Heptane 25°C × 1hour		7000
		Alcoholic beverages	30 µg/ml or less	20 % ethanol 60°C × 30min		4000	
pH over 5		Water 60°C × 30min		Water 95°C × 30min	4000		
pH 5 or less	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min		4000			

6. Mainly composed of polyvinylidene chloride(PVDC)							
Test Item		Standards		Elution condition		Unit Price (JPY)	
				Condition of use >100°C	Condition of use ≤100°C		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)				10000	
	Barium	Not exceed the absorbance of the standard solution (100 µg/g or less)				8000	
	Vinylidene chloride	Not larger than the peak area of the standard solution (6 µg/g or less)				15000	
Elution Test	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	
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less		Heptane 25°C × 1hour		7000
		Alcoholic beverages			20 % ethanol 60°C × 30min		4000
pH over 5		Water 60°C × 30min			Water 95°C × 30min	4000	
pH 5 or less	4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000				

7. Mainly composed of polyethylene terephthalate(PET)							
Test Item		Standards	Elution condition		Unit Price (JPY)		
			Condition of use >100°C	Condition of use ≤100°C			
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		10000			
	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)					
Elution Test	Quantity of KMnO4 consumed	10 µg/ml or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Antimony	Not exceed the absorbance of the standard solution (0.05 µg/ml or less)		Water 60°C × 30min	Water 95°C × 30min	4000	
	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	7000	
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less		Heptane 25°C × 1hour		7000
		Alcoholic beverages			20 % ethanol 60°C × 30min		4000
		pH over 5			Water 60°C × 30min	Water 95°C × 30min	4000
pH 5 or less		4% acetic acid 60°C × 30min			4% acetic acid 95°C × 30min	4000	

8. Mainly composed of polymethyl methacrylate(PMMA)							
Test Item		Standards	Elution condition		Unit Price (JPY)		
			Condition of use >100°C	Condition of use ≤100°C			
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		10000			
	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)					
Elution Test	Quantity of KMnO4 consumed	10 µg/ml or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Methyl methacrylate	Not larger than the peak area of the standard solution (15 µg/ml or less)		Water 60°C × 30min	Water 95°C × 30min	4000	
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less		20 % ethanol 60°C × 30min		11000
		Alcoholic beverages			Heptane 25°C × 1hour		7000
		pH over 5			20 % ethanol 60°C × 30min		4000
		pH 5 or less			Water 60°C × 30min	Water 95°C × 30min	4000
			4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000		

9. Mainly composed of polyamide(PA)							
Test Item		Standards	Elution condition		Unit Price (JPY)		
			Condition of use >100°C	Condition of use ≤100°C			
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		10000			
	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)					
Elution Test	Quantity of KMnO4 consumed	10 µg/ml or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Caprolactam	Not larger than the peak area of the standard solution (15 µg/ml or less)		Water 60°C × 30min	Water 95°C × 30min	4000	
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less		20 % ethanol 60°C × 30min		11000
		Alcoholic beverages			Heptane 25°C × 1hour		7000
		pH over 5			20 % ethanol 60°C × 30min		4000
		pH 5 or less			Water 60°C × 30min	Water 95°C × 30min	4000
			4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000		

10. Mainly composed of polymethyl pentene(PMP)							
Test Item		Standards	Elution condition		Unit Price (JPY)		
			Condition of use >100°C	Condition of use ≤100°C			
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		10000			
	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)					
Elution Test	Quantity of KMnO4 consumed	10 µg/ml or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	3000	
	Evaporation residue	Fats, oils and fatty foods	120 µg/ml or less		Water 60°C × 30min	Water 95°C × 30min	4000
		Alcoholic beverages	30 µg/ml or less		Heptane 25°C × 1hour		7000
		pH over 5			20 % ethanol 60°C × 30min		4000
		pH 5 or less			Water 60°C × 30min	Water 95°C × 30min	4000
						4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min

11. Mainly composed of polycarbonate(PC)						
Test Item		Standards		Elution condition		Unit Price (JPY)
				Condition of use >100°C	Condition of use ≤100°C	
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		/		10000
	Bisphenol A	500 µg/g or less (Including phenol and p-tert-butylphenol)				※1
	Diphenyl carbonate	500 µg/g or less				25000
	Amines	1 µg/g or less (Triethylamine and tributylamine)				20000
Elution Test	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	2.5 µg/ml or less	Heptane 25°C × 1hour		※2
		Alcoholic beverages		20 % ethanol 60°C × 30min		4
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	solvents
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less	Heptane 25°C × 1hour		7000
		Alcoholic beverages		20 % ethanol 60°C × 30min		4000
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4000
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000

※1 JPY25,000 when Bisphenol A and Diphenyl carbonate are tested at a time. When tested separately, Bisphenol A is JPY20000 and Diphenyl carbonate is JPY15000.

※2 1 solvent: JPY20000, 2 solvents: JPY25000, 3 solvents: JPY30000, 4 solvents: JPY 35000.

12. Mainly composed of polyvinyl alcohol(PVA)						
Test Item		Standards		Elution condition		Unit Price (JPY)
				Condition of use >100°C	Condition of use ≤100°C	
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		/		10000
Elution Test	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
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less	Heptane 25°C × 1hour		7000
		Alcoholic beverages		20 % ethanol 60°C × 30min		4000
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4000
		pH 5 or less		4% acetic acid 60°C × 30min	4% acetic acid 95°C × 30min	4000

13. Mainly composed of polylactic acid(PLA)						
Test Item		Standards		Elution condition		Unit Price (JPY)
				Condition of use >100°C	Condition of use ≤100°C	
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		/		10000
Elution Test	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
	Total lactic acid	Not larger than the peak area of the standard solution (30 µg/ml or less)				15000
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less	Heptane 25°C × 1hour		7000
		Alcoholic beverages		20 % ethanol 60°C × 30min		4000
		pH over 5		Water 60°C × 30min	Water 95°C × 30min	4000
pH 5 or less		4% acetic acid 60°C × 30min		4% acetic acid 95°C × 30min	4000	

14. Mainly composed of polyethylene naphthalate (PEN)						
Test Item		Standards	Elution condition		Unit Price (JPY)	
			Condition of use >100°C	Condition of use ≤100°C		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		10000		
Elution Test	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)				4% acetic acid 60°C × 30min
	Quantity of KMnO4 consumed	10 µg/ml or less		Water 60°C × 30min	Water 95°C × 30min	4000
	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	7000
	Evaporation residue	Fats, oils and fatty foods	30 µg/ml or less	Heptane 25°C × 1hour		7000
		Alcoholic beverages		20 % ethanol 60°C × 30min		4000
pH over 5		Water 60°C × 30min		Water 95°C × 30min	4000	
pH 5 or less		4% acetic acid 60°C × 30min		4% acetic acid 95°C × 30min	4000	

15. Synthetic resin in general (general standards)						
Test Item		Standards	Elution condition		Unit Price (JPY)	
			Condition of use >100°C	Condition of use ≤100°C		
Material Test	Cadmium and Lead	Not exceed the absorbance of the standard solution (100 µg/g or less)		10000		
Elution Test	Heavy metals	Not darker in color than the control solution (1 µg/ml or less)				4% acetic acid 60°C × 30min
	Quantity of KMnO4 consumed	10 µg/ml or less		Water 60°C × 30min	Water 95°C × 30min	4000

## Required amounts of test samples

## 1. Required amounts of each test samples

The test content varies depending on the type of synthetic resin and the intended use.

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

Table-1 Required amounts of test samples

Test category Type of Synthetic resin	Material Test	ElutionTest		
		soaking extraction	one-side extraction	filling extraction
1. phenol resin(PF), melamine resin(MF) or urea resin(UF)	3g	According to Evaporation residue condition, * 1condition : minimum 1 sheet.  *4conditions : minimum 3 sheets.  (1sheet : 210mm × 297mm, A4 size)	According to Evaporation residue condition,  * 1condition : minimum 3 sheets.  *4conditions : minimum 9 sheets.  (1sheet : 210mm × 297mm, A4 size)	Contact us
2. Mainly made of formaldehyde (except PF,MF,UF)	3g			
4. polyethylene(PE) or polypropylene(PP)				
7. polyethylene terephthalate(PET)				
8. polymethyl methacrylate(PMMA)				
9. polyamide(PA)				
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 standards)	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 JPY4,000).