

Korea Standards and Specifications for Utensils, Containers and Packaging for Food Products

**Food Additive Standards Division
Korea Food and Drug Administration
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Note to reader : If there should be any differences between the original Korean texts and English translation, the original Korean texts shall prevail. For further information, please contact Food Additive Standards Division, Korea Food and Drug Administration.

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Article 7. Standards and Specifications for Utensils, Containers and Packaging for Food Products

I . General Standards for Utensils, Containers and Packaging

1. Utensils, containers and packaging shall not have a structure, in which their contents are easily contaminated physically or chemically.
2. The standard for non-volatile residues may not be applied for the containers or packaging whose food-contact surfaces is composed of food-grade substances such as starch, glycerin and wax.
3. Tin plating used in food contact surface of utensils, containers and packaging shall not contain more than 0.1% of lead.
4. Metals for manufacture or repair in food contact surface of utensils, containers and packaging shall not contain more than 0.1% of lead or 5% of antimony.
5. Solder for manufacture or repair of utensils, containers and packaging shall not contain more than 0.1% of lead.
6. Electrode of utensils applied the current to food directly shall not make of metals other than iron, aluminum, platinum, titanium, and stainless steel.
7. Food contact surface shall not be printed in the manufacture of utensils, containers and packaging. Printing inks applied to the non food-contact side must be sufficiently dried and in this case the benzophenone as ink compounds shall not migrate more than 0.6 mg/L. In case of flexible packaging, among synthetic polymer packaging with printing non food-contact side, residual toluene as ink compounds shall not be more than 2 mg/m².
8. Utensils, containers and packaging of synthetic polymer shall not contain not more than 100 mg/kg(as sum) of lead, cadmium, mercury and hexavalent chromium.

II. Common Manufacturing Standards for Utensils, Containers and Packaging

1. Food contact surface of utensils, containers and packaging which are made of copper or copper alloy must be properly treated with tin coating, silver coating or other methods to ensure hygiene safety. However, exempt materials having specific its own gloss and plate concerned to be peeled using at high temperature.
2. Colorant for manufacturing of utensils, containers and packaging shall not use other than permitted as food additives, except the case that colorant are melted glaze, glass, enamel, or there is no possibility that colorant migrates into foods.
3. Di-(2-ethylhexyl)phthalate(DEHP) shall not be used in the manufacture of utensils, containers and packaging, except there is no possibility that di-(2-ethylhexyl)phthalate migrates into foods.

III. Usage Specifications for Utensils, Containers and Packaging that come into contact with food

1. Di-(2-ethylhexyl)adipate(DEHA) shall not be used in the manufacture of cling wraps, except there is no possibility that di-(2-ethylhexyl)adipate migrates into foods.
2. Di-n-butylphthalate(DBP), benzyl-n-butylphthalate(BBP) and bisphenol A(BPA) shall not be used in the manufacture of feeding bottles(including nipples).
3. The interval of marking indicating volume on feeding bottle(except glass) should be 10 mL, except the lowest mark of the scale is difficult. The highest mark of scale on the feeding bottle and their error tolerance is as the following table(However, if the highest mark of scale is not showed in the following table, the nearest value specified in the table shall be applied and higher value in the middle).

[Table] The highest mark of scale of the feeding bottle and error tolerance(unit : mL)

Highest mark of scale		50	100	120	150	200	240	250	300
Error tolerance	Glass	±4	±6.5	±7	±8	±9	±10	±10	±12
	Synthetic polymer	±3	±4	±4	±4	±4	±5	±5	±6

4. The usage and thermal shock strength(endurable temperature difference) of heat-cooking glassware, depending on the experiment of 「Korean Industrial Standards」 (Korean Agency for Technology and Standards notice) KS L 2424, is as the following table.

[Table] The usage and thermal shock strength(endurable temperature difference) of glassware used for cooking purposes

Usage		Thermal shock strength (endurable temperature difference)
for direct heating	Used by direct exposure to flame for such purpose as cooking with heat, able to withstand sudden heating and	400℃ or higher

	cooling	
	Used by direct exposure to flame for such purpose as cooking with heat	150°C or higher
for oven	Used without direct exposure to flame for such purpose as cooking with heat	120°C or higher
for microwave oven	Used by microwave for such purpose as cooking with heat	120°C or higher
for boiling water	Used for purpose other than the above, able to sufficiently withstand a thermal impact of the degree caused by boiling water	120°C or higher

IV. Specification for Each Material

1. Synthetic Polymer

1-1 Poly(vinyl chloride)(PVC)

A. Definition

Poly(vinyl chloride) is containing above 50% of vinyl chloride among the base polymers.

B. Residue Specification(mg/kg)

- 1) Vinyl chloride : not more than 1.0
- 2) Dibutyltin compound : not more than 50(as dibutyltin dichloride)
- 3) Cresol esters of phosphoric acid : not more than 1,000

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30(However, not more than 150 if n-heptane is used as the food simulant)
- 4) Di-butylphthalate : not more than 0.3
- 5) Benzyl-n-butylphthalate : not more than 30
- 6) Di-(2-ethylhexyl)phthalate : not more than 1.5
- 7) Di-n-octylphthalate : not more than 5
- 8) Diisononylphthalate : not more than 9
- 9) Diisodecylphthalate : not more than 9
- 10) Di-(2-ethylhexyl)adipate : not more than 18

1-2 Polyethylene(PE) and Polypropylene(PP)

A. Definition

Polyethylene is containing above 50% of ethylene among the base polymers.

Polypropylene is containing above 50% of propylene among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30(However, not more than 150 if n-heptane used as the food simulant and using temperature is not more than 100°C)
- 4) 1-Hexene : not more than 3(in compliance with only the polyethylene)
- 5) 1-Octene : not more than 15(in compliance with only the polyethylene)

1-3 Polystyrene(PS)

A. Definition

Polystyrene is containing above 50% of styrene or α -methyl styrene among the base polymers and including foamed polystyrene.

B. Residue Specification(mg/kg)

- 1) Volatile organic compounds(as sum of styrene, toluene, ethyl benzene, isopropyl benzene and n-propyl benzene) : not more than 5,000(However, in case of formed polystyrene used to boiling water, total amount of volatile organic compounds shall be not more than 2,000 and amount of styrene and ethyl benzene among total volatile organic compounds are not more than 1,000 respectively)

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30(However, not more than 240 if n-heptane is used as the food simulant)

1-4 Poly(vinylidene chloride)(PVDC)

A. Definition

Poly(vinylidene chloride) is containing above 50% of vinylidene chloride among the base polymers.

B. Residue Specification(mg/kg)

- 1) Vinylidene chloride : not more than 6.0
- 2) Barium : not more than 100

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30

1-5 Poly(ethyleneterephthalate)(PET)

A. Definition

Poly(ethyleneterephthalate) is containing above 50% of polymers that terephthalic acid or dimethyl terephthalate react with ethyleneglycol among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) antimony : not more than 0.04
- 5) Germanium : not more than 0.1
- 6) Terephthalic acid : not more than 7.5
- 7) Isophthalic acid : not more than 5.0

1-6 Phenol-formaldehyde resin(PF)

A. Definition

Phenol-formaldehyde resin is containing above 50% of polymers consisting of phenol and formaldehyde among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Non-volatile residues : not more than 30
- 3) Phenol : not more than 5
- 4) Formaldehyde : not more than 4.0

1-7 Melamine-formaldehyde resin(MF)

A. Definition

Melamine-formaldehyde resin is containing above 50% of polymers consisting of melamine and formaldehyde among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Non-volatile residues : not more than 30
- 3) Phenol : not more than 5
- 4) Formaldehyde : not more than 4.0
- 5) Melamine : not more than 30

1-8 Urea-formaldehyde resin(UF)

A. Definition

Urea-formaldehyde resin is containing above 50% of polymers consisting of urea and formaldehyde among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Non-volatile residues : not more than 30
- 3) Phenol : not more than 5
- 4) Formaldehyde : not more than 4.0

1-9 Polyacetal(polyoxymethylene(POM))

A. Definition

Polyacetal is containing above 50% of polymers consisting of formaldehyde and trioxymethylene among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Formaldehyde : not more than 4.0

1-10 Acrylic Resin

A. Definition

Acrylic resin is containing above 50% of acrylic acid, methacrylic acid, acrylate or methyl methacrylate, etc. among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Methylmethacrylate : not more than 6(only for synthetic polymer containing above 50% of methylmethacrylate among the base polymers)

1-11 Polyamide(PA)

A. Definition

Polyamide is containing above 50% of polymers that lactam, amino carboxylate or dibasic acid react with diamine among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Caprolactam : not more than 15
- 5) 4,4'-methylenedianiline : not more than 0.01
- 6) Ethylenediamine : not more than 12
- 7) Hexamethylenediamine : not more than 2.4
- 8) Lauro lactam : not more than 5

1-12 Polymethylpentene(PMP)

A. Definition

Polymethylpentene is containing above 50% of methylpentene among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30(However, not more than 120 if n-heptane is used as the food simulant)
- 4) 4-methyl-1-pentene : not more than 0.05

1-13 Polycarbonate(PC)

A. Definition

Polycarbonate is containing above 50% of polymers that bisphenol A react with diphenyl carbonate or carbonyl chloride among the base polymers.

B. Residue Specification(mg/kg)

1) Amines(as sum of triethylamine and tributylamine) : not more than 1.0

C. Migration Specification(mg/L)

1) Lead : not more than 1.0

2) Consumption of potassium permanganate : not more than 10

3) Non-volatile residues : not more than 30

4) Bisphenol A(as sum of phenol, bisphenol A and p-tert-butylphenol) : not more than 2.5(However, migration specification of bisphenol A is not more than 0.6)

5) Diphenylcarbonate : not more than 0.05

1-14 Poly(vinylalcohol)(PVA)

A. Definition

Poly(vinylalcohol) is containing above 50% of vinyl alcohol among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Vinyl acetate : not more than 12

1-15 Polyurethane(PU)

A. Definition

Polyurethane is containing above 50% of polymers consisting of isocyanate and polyol among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Isocyanate : not more than 0.1
- 5) 4,4'-methylenedianiline : not less than 0.01

1-16 Polybutene-1(PB-1)

A. Definition

Polybutene-1 is containing above 50% of butene-1 among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30(However, not more than 150 if n-heptane used as the food simulant and using temperature is below 100°C, and not more than 120 if n-heptane used as the food simulant and using temperature is above 100°C)

1-17 Acrylonitrile-butadiene-styrene copolymer(ABS) and Acrylonitrile-styrene copolymer(AS)

A. Definition

Acrylonitrile-butadiene-styrene copolymer is containing above 60% of copolymers consisting of styrene(including α -methylstyrene) and acrylonitrile, and butadiene rubber among the base polymers.

Acrylonitrile-styrene copolymer is containing above 50% of styrene(including α -methylstyrene) polymer, plus acrylonitrile polymer among the base polymers.

B. Residue Specification(mg/kg)

- 1) Volatile organic compounds(as sum of styrene, toluene, ethyl benzene, isopropyl benzene and n-propyl benzene) : not more than 5,000
- 2) 1,3-butadiene : not more than 1(in compliance with only the acrylonitrile-butadiene-styrene copolymer)

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30(However, not more than 240 if n-heptane is used as the food simulant)
- 4) Acrylonitrile : not more than 0.02

1-18 Polymethacrylstyrene(MS)

A. Definition

Polymethacrylstyrene is containing above 20% of methyl methacrylate and styrene(including α -methylstyrene), respectively, among the base polymers and the sum of 2 chemicals is above 60%.

B. Residue Specification(mg/kg)

- 1) Volatile organic compounds(as sum of styrene, toluene, ethyl benzene, isopropyl benzene and n-propyl benzene) : not more than 5,000

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30(However, not more than 240 if n-heptane is used as the food simulant)
- 4) Methyl methacrylate : not more than 6

1-19 Poly(butylene terephthalate)(PBT)

A. Definition

Poly(butylene terephthalate) is containing above 50% of polymers that terephthalic acid or dimethyl terephthalate react with buthylene glycol among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Terephthalic acid : not more than 7.5
- 5) Isophthalic acid : not more than 5.0
- 6) 1,4-butanediol : not more than 5.0

1-20 Polyarylsulfone(PASF)

A. Definition

Polyarylsulfone is containing above 50% of polymers consisting of 4,4'-dichlorodiphenylsulfone and bisphenol A among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Bisphenol A(as sum of phenol, bisphenol A and p-tert-butylphenol) : not more than 2.5(However, migration specification of bisphenol A is not more than 0.6)
- 5) 4,4'-Dichlorodiphenylsulfone : not more than 0.05

1-21 Polyarylate(PAR)

A. Definition

Polyarylate is containing above 50% of polymers that terephthalic acid or isophthalic acid react with bisphenol A among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Terephthalic acid : not more than 7.5
- 5) Isophthalic acid : not more than 5.0
- 6) Bisphenol A(as sum of phenol, bisphenol A and p-tert-butylphenol) : not more than 2.5(However, migration specification of bisphenol A is not more than 0.6)

1-22 Hydroxybutyl polyester(HBP)

A. Definition

Hydroxybutyl polyester is containing above 50% of copolymers consisting of hydroxybenzoic acid, aromatic dicarbonate, and aromatic diol among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30

1-23 Polyacrylonitrile(PAN)

A. Definition

Polyarylonitrile is containing above 50% of acrylonitrile among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Acrylonitrile : not more than 0.02

1-24 Fluorocarbon resin(FR)

A. Definition

Fluorocarbon resin is containing above 50% of fluoro-containing monomers among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30

1-25 Poly(phenylene ether)(PPE)

A. Definition

Poly(phenylene ether) is containing above 60% of 2,6-dimethylphenol and styrene among the base polymers.

B. Residue Specification(mg/kg)

- 1) Volatile organic compounds(as sum of styrene, toluene, ethyl benzene, isopropyl benzene and n-propyl benzene) : not more than 5,000

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30

1-26 Ionomer resin

A. Definition

Ionomer is a copolymer of ethylene and methyl acrylic acid, in which zinc, sodium, potassium, calcium and ammonium, etc. are cross-linked to carboxyl group.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30

1-27 Ethylene-vinylacetate copolymer(EVA)

A. Definition

Ethylene-vinylacetate is a copolymer consisting of ethylene and vinylacetate.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Vinyl acetate : not more than 12

1-28 Methylmethacrylate-acrylonitrile-butadiene-styrene copolymer(MABS)

A. Definition

Methylmethacrylate-acrylonitrile-butadiene-styrene copolymer is containing above 60% of copolymers consisting of methacrylate, acrylonitrile, butadiene, and styrene(including α -methylstyrene) among the base polymers.

B. Residue Specification(mg/kg)

- 1) Volatile organic compounds(as sum of styrene, toluene, ethyl benzene, isopropyl benzene and n-propyl benzene) : not more than 5,000
- 2) 1,3-butadiene : not more than 1

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Methyl methacrylate : not more than 6
- 5) Acrylonitrile : not more than 0.02

1-29 Poly(ethylenenaphthalate)(PEN)

A. Definition

Poly(ethylrenenaphthalate) is containing above 50% of polymers consisting of 2,6-dimethylnaphthalene dicarboxylate and ethylene glycol among the base polymer.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30

1-30 Epoxy Resin

A. Definition

Epoxy Resin is a polymer consisting of mainly bisphenol A and epichlorohydrine.

B. Residue Specification(mg/kg)

- 1) Amines(as sum of triethylamine and tributylamine) : not more than 1.0

C. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Bisphenol A(as sum of phenol, bisphenol A and p-tert-butylphenol) : not more than 2.5(However, migration specification of bisphenol A is not more than 0.6)
- 5) Bisphenol A diglycidyl ether(including bisphenol A diglycidyl ether dichloride and bisphenol A diglycidyl ether dihydrate) : not more than 1.0
- 6) Bisphenol F diglycidyl ether(including bisphenol F diglycidyl ether dichloride and bisphenol F diglycidyl ether dihydrate) : not more than 1.0
- 7) Epichlorohydrin : not more than 0.5
- 8) 4,4-methylenedianiline : not more than 0.01

1-31 Poly(phenylenesulfide)(PPS)

A. Definition

Poly(phenylenesulfide) is containing above 50% of polymers consisting of 1,4-dichlorobenzene and sodium sulfide among the base polymer.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) 1,4-Dichlorobenzene : not more than 12

1-32 Poly(ethersulfone)(PES)

A. Definition

Poly(ethersulfone) is containing above 50% of polymers that 4,4'-dihydroxy diphenylsulfone or 4,4'-dihydroxybiphenyl react with 4,4'-dichlorodiphenylsulfone among the base polymers, and not using bisphenol A.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) 4,4'-dichlorodiphenylsulfone : not more than 0.05
- 5) 4,4'-dihydroxydiphenylsulfone : not more than 0.05

1-33 Poly(cyclohexane-1,4-dimethylene terephthalate)(PCT)

A. Definition

Poly(cyclohexane-1,4-dimethylene terephthalate) is containing above 50% of polymers that terephthalic acid or dimethyl terephthalate react with 1,4-cyclohexane dimethanol among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Antimony : not more than 0.04
- 5) Terephthalic acid : not more than 7.5
- 6) Isophthalic acid : not more than 5.0

1—34 Polyimide (PI)

A. Definition

Polyimide is containing above 50% of polymers that aromatic or aliphatic dianhydride react with aromatic or aliphatic diamine among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30

1—35 Polyetheretherketone (PEEK)

A. Definition

Polyetheretherketone is containing above 50% of polymers consisting of 4,4'-dihalogenated diphenylketone and hydroquinone among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Hydroquinone : not more than 0.6

1-36 Polylactide(poly(lactic acid), PLA)

A. Definition

Poly lactide is containing above 50% of lactic acid among the base polymers.

B. Migration Specification(mg/L)

1) In the case of no containing starch in sample

a. Lead : not more than 1.0

b. Consumption of potassium permanganate : not more than 10

c. Non-volatile residues : not more than 30

2) In the case of containing starch in sample

Same as C. Migration Specification in 8. Starch Product(Proceed as directed under test method in 8. Starch Product)

1—37 Butylenesuccinate–adipate copolymer(PBSA)

A. Definition

Butylenesuccinate–adipate is containing above 60% of copolymers consisting of succinic acid, adipic acid, and 1,4–butanediol among the base polymers.

B. Migration Specification(mg/L)

1) In the case of no containing starch in sample

- a. Lead : not more than 1.0
- b. Consumption of potassium permanganate : not more than 10
- c. Non–volatile residues : not more than 30
- d. 1,4–Butanediol : not more than 5

2) In the case of containing starch in sample

Same as C. Migration Specification in 8. Starch product and d. 1,4–Butanediol migration specification in 1) In the case of no containing starch in sample(Proceed as directed under test method in 8. Starch Product)

1—38 Crosses-linked polyester resin

A. Definition

Crosses-linked polyester resin is containing above 50% of polymers that polyol or epoxide react with unsaturated dibasic acid among the base polymers.

B. Migration Specification(mg/L)

- 1) Lead : not more than 1.0
- 2) Consumption of potassium permanganate : not more than 10
- 3) Non-volatile residues : not more than 30
- 4) Terephthalic acid : not more than 7.5
- 5) Isophthalic acid : not more than 5.0