



Polypropylene

Resistance of Polypropylene to Chemicals

Technical Information
Testing: ISO norm



About Basell

Basell develops, produces and markets polypropylene, polyethylene, advanced polyolefin materials and polyolefin catalysts, and also develops and licenses polyolefin processes.

Formed in October 2000, Basell is owned equally by BASF and Shell. Basell and its joint ventures serve customers in more than 120 countries with materials produced in 18 countries. The company's network of joint ventures expands Basell's technology and market base and enables the company to follow key customers as they expand and globalise their operations.

With research and development centres in Europe, North America and the Asia-Pacific region, Basell is continuing and expanding a technological heritage that dates back to the start of the polyolefins industry. The company is committed to continuously extending the property profile of its polyolefins portfolio and to developing with its customers a shared agenda for bringing new products to market as quickly as possible.

Basell is committed to strong Health, Safety and Environmental (HSE) performance. The company's products are used in countless consumer and industrial goods from food and drink packaging to car components, and from household products to underground piping.

Basell's corporate centre is located in Hoofddorp, The Netherlands, near Amsterdam. The company has regional offices in Brussels, Belgium; Mainz, Germany; Wilmington, Delaware, USA; Sao Paulo, Brazil, and Hong Kong, as well as sales offices in the major markets around the world.



Resistance of Polypropylene to Chemicals

The resistance of polypropylene produced by Basell – sold under the trademarks *Moplen*, *Clyrell*, *Adstif* and *Metocene* – to chemicals is governed by its non-polar character.

Polypropylene is resistant to many polar liquids such as alcohols, organic acids, esters, and ketones. However, it is swollen by aliphatic and aromatic hydrocarbons and by halogenated hydrocarbons. The less crystalline the polymer, the greater the swelling. Swelling also causes a drop in mechanical strength. However, after the liquids that cause the swelling have evaporated, polypropylene regains its original properties.

Polypropylene is resistant to aqueous solutions of inorganic salts and to almost all inorganic acids and alkalis – even at high concentrations and temperatures above 60°C. However, strong oxidizing agents (e.g. chloro-sulfonic acid, fuming sulfuric acid, concentrated nitric acid and halogens) will attack polypropylene at room temperature. For medical applications requiring sterilisation with steam, ethylene oxide or gamma ray, Basell has developed special grades.

If you are interested in such grades, please contact your local Basell representative.

To date, chemicals have never been observed to cause environmental stress-cracking in polypropylene.

Polypropylene is partially permeable to gases, low-boiling aliphatic and aromatic hydrocarbons, and halogenated hydrocarbons.

In the following tables are the results of numerous tests according to ISO 175. The results are based on 1 mm thick pressed samples stored for 30 days, under no load conditions, in the substance under investigation. Also taken into account where available, is practical knowledge for longer term contact with these substances. The assessment of chemical resistance is based on change in weight after 30 days storage in the substance under test as well as a tensile test on the swollen sample according to ISO 527-2.

The suitability of contact to chemicals can depend on the shape and requirements of the product.

In many cases, it is imperative that practical tests are carried out to confirm suitability.

In the tables abbreviations are used as follows:

Cold sat. = cold saturated solution
 b = measured value at boiling point of test substance
 a = aqueous solution

The resistance tables are marked with following symbols:

+ = Resistant
 Any swelling is slight with only minor changes to tensile yield stress.
 ± = Limited resistance
 Noticeable swelling and tensile yield stress is noticeably reduced. Tests should be carried out to confirm suitability in critical cases.
 – = Not resistant
 Swelling is severe and tensile yield stress is severely reduced.

Missing symbol indicates that no test was carried out under the condition stated.

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|-----------------------|---------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Chemicals | | | | | | |
| Acetic acid | a. 50 | + | + | | + | |
| Acetic acid | a. 10 | + | + | | + | + |
| Acetic acid (glacial) | 100 | + | ± | – | + | |
| Acetic anhydride | 100 | + | | | + | |
| Acetone | 100 | + | + | (b) | + | |
| Acrylonitrile | 100 | + | | | + | |
| Allyl alcohol | a. 96 | + | + | | + | |
| Aluminium salts | a. all | + | + | + | + | + |
| Alums (all types) | a. all | + | + | | + | + |
| Ammonia | a. 30 | + | + | | + | |
| Ammonia | a. 10 | + | + | | + | + |
| Ammonia, gaseous | 100 | + | + | | | |
| Ammonia, liquid | 100 | + | | | | |
| Ammonium acetate | a. all | + | + | + | + | + |
| Ammonium carbonate | a. all | + | + | + | + | + |
| Ammonium chloride | a. all | + | + | + | + | + |
| Ammonium nitrate | a. all | + | + | + | + | + |
| Ammonium phosphate | a. all | + | + | + | + | + |
| Ammonium sulphate | a. all | + | + | + | + | + |
| Amyl acetate | 100 | ± | – | | ± | |
| Amyl alcohol | 100 | + | + | | + | |
| Aniline | 100 | + | + | | + | |
| Anisole | 100 | ± | | | ± | |
| Barium salts | a. all | + | + | + | + | + |
| Benzaldehyde | 100 | + | | | + | |
| Benzaldehyde | a. cold sat. | + | | | + | |
| Benzene | 100 | ± | – | | – | |
| Benzoic acid | 100 | + | + | | + | |
| Benzoic acid | a. cold sat. | + | + | + | + | + |
| Benzyl alcohol | 100 | + | ± | | + | |
| Borax | a. cold sat. | + | + | | + | + |
| Boric acid | 100 | + | + | | + | |
| Boric acid | a. cold sat. | + | + | | + | + |
| Bromine vapour | high | – | | | – | |
| Bromine vapour | Low | ± | – | | – | |
| Bromine water | cold sat. | – | | | – | |
| Bromine, liquid | 100 | – | | | – | |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|-------------------------------------|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Chemicals | | | | | | |
| Butane, gaseous | 100 | + | + | | | |
| Butane, liquid | 100 | + | | | | |
| 1,4-Butane diol | 100 | + | + | | + | |
| Butane diol | 100 | + | + | | + | |
| Butyl acetate | 100 | ± | – | | ± | |
| n-Butyl alcohol (n-Butanol) | 100 | + | | | + | |
| Butyl glycol | 100 | + | | | + | |
| Calcium carbonate | a. cold sat. | + | + | + | + | + |
| Calcium chloride | a. cold sat. | + | + | + | + | + |
| Calcium hypochlorite | a. all | + | + | | + | |
| Calcium nitrate | a. cold sat. | + | + | | + | + |
| Carbon disulphide | 100 | ± | | | ± | |
| Carbon tetrachloride | 100 | – | | | – | |
| Chlorine water | cold sat. | ± | – | | – | |
| Chlorine, gas, dry | 100 | – | | | – | |
| Chlorine, gas, moist | 10 | ± | – | | – | |
| Chlorine, liquid | 100 | – | | | – | |
| Chloroacetic acid | 100 | + | | | ± | |
| Chlorobenzene | 100 | ± | – | | – | |
| Chloroform | 100 | ± | – | | – | |
| Chlorosulphonic acid | 100 | – | | | – | |
| Chromium salts (dibasic, tri basic) | a. cold. sat. | + | + | | + | + |
| Chromium trioxide (Chromic acid) | a. cold. sat. | ± | – | | | |
| Chromium trioxide | a. 20 | + | ± | | + | |
| Citric acid | a. cold sat. | + | + | + | + | + |
| Copper salts | a. cold sat. | + | + | | + | |
| Cresols | 100 | + | ± | | + | |
| Cresols | a. cold sat. | + | | | + | |
| Cyclohexane | 100 | ± | | | – | |
| Cyclohexanol | 100 | + | ± | | + | |
| Cyclohexanone | 100 | + | – | | ± | |
| Decahydronaphthaline | 100 | ± | – | | – | |
| Diethylether | 100 | ± | | | ± | |
| Diisopropylether | 100 | ± | – | | ± | |
| Dimethylformamide | 100 | + | | | + | |
| 1,4-Dioxan | 100 | ± | ± | – | ± | |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|------------------------|---------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Chemicals | | | | | | |
| Ethyl acetate | 100 | ± | ± | | ± | |
| Ethyl alcohol | 100 | + | | | + | |
| Ethyl alcohol | a. 96 | + | + | | + | |
| Ethyl alcohol | a. 50 | + | + | | + | |
| Ethyl alcohol | a. 10 | + | + | | + | |
| Ethyl chloride | 100 | – (b) | | | – (b) | |
| Ethylbenzene | 100 | ± | – | | – | |
| Ethylene chloride | 100 | ± | | | ± | |
| 2-Ethylhexanol | 100 | + | | | + | |
| Formaldehyde | a. 40 | + | + | | + | |
| Formaldehyde | a. 30 | + | + | | + | |
| Formaldehyde | a. 10 | + | + | | + | |
| Formic acid | a. 98 | + | ± | | + | |
| Formic acid | a. 85 | + | ± | | + | |
| Formic acid | a. 50 | + | ± | | + | |
| Formic acid | a. 10 | + | ± | | + | |
| Fructose | a. cold sat. | + | + | + | + | + |
| Glucose | a. cold sat. | + | + | + | + | + |
| Glycerine | 100 | + | + | + | + | |
| Glycerine | a. all | + | + | + | + | |
| Glycol | 100 | + | + | + | + | |
| Glycol | a. all | + | + | + | + | |
| n-Heptane | 100 | ± | ± | | – | |
| n-Hexane | 100 | ± | ± | | – | |
| Hydrobromic acid | 50 | + | | | + | |
| Hydrochloric acid | 36 | + | + | | + | |
| Hydrochloric acid | 10 | + | + | | + | + |
| Hydrofluoric acid | 40 | + | + | | + | |
| Hydrogen chloride, gas | all | + | + | | + | |
| Hydrogen peroxide | 30 | + | ± | | ± | |
| Hydrogen peroxide | 3 | + | + | | + | |
| Hydrogen sulphide | a. low | + | + | | + | |
| Iron salt | a. cold sat. | + | + | + | + | + |
| Isooctane | 100 | ± | ± | | – | |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|---|---------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Chemicals | | | | | | |
| Isopropylalcohol | 100 | + | + | | + | |
| Lactic acid | a. 90 | + | + | | + | |
| Lactic acid | a. 50 | + | + | | + | |
| Lactic acid | a. 10 | + | + | + | + | + |
| Magnesium salts | a. cold sat. | + | + | + | + | + |
| Menthol | 100 | + | | | + | |
| Mercury | 100 | + | + | | + | |
| Mercury salts | a. cold sat. | + | + | | + | + |
| Methyl acetate | 100 | + | + | (b) | ± | |
| Methyl alcohol | a. 50 | + | + | | + | |
| Methyl alcohol (methanol) | 100 | + | + | (b) | + | |
| Methyl ethyl ketone | 100 | + | ± | | ± | |
| Methylene chloride | 100 | ± | | | - | |
| Morpholine | 100 | + | + | | + | |
| Naphthalene | 100 | + | | | | |
| Nickel salts | a. cold sat. | + | + | | + | + |
| Nitric acid | 68 | - | - | | - | |
| Nitric acid | 50 | ± | - | | - | |
| Nitric acid | 25 | + | ± | | ± | |
| Nitric acid | 10 | + | + | | + | |
| Nitrobenzene | 100 | + | ± | | + | |
| Oleic acid | 100 | + | | | + | |
| Oxalic acid | a. cold sat. | + | ± | | + | |
| Ozone (< 0.5 ppm) | | + | ± | | | |
| Perchloroethylene (see tetrachloroethylene) | | | | | | |
| Phenol | 100 | + | + | | + | |
| Phenol | a. cold sat. | + | + | | + | |
| Phosphoric acid | 85 | + | + | | + | |
| Phosphoric acid | 50 | + | + | | + | |
| Phosphoric acid | 10 | + | + | + | + | + |
| Phosphorus oxychloride | 100 | + | ± | | | |
| Phosphorus pentoxide | 100 | + | | | + | |
| Phosphorus trichloride | 100 | + | | | ± | |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|---|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Chemicals | | | | | | |
| Phthalic acid | a. 50 | + | + | | + | |
| Potassium carbonate (potash) | a. cold sat. | + | + | | + | + |
| Potassium chlorate | a. cold sat. | + | + | | + | |
| Potassium chloride | a. cold sat. | + | + | + | + | + |
| Potassium dichromate | a. cold sat. | + | + | + | + | |
| Potassium hydroxide solution | 50 | + | + | | + | + |
| Potassium hydroxide solution | 25 | + | + | | + | + |
| Potassium hydroxide solution | 10 | + | + | | + | + |
| Potassium iodide | a. cold sat. | + | + | | + | + |
| Potassium nitrate | a. cold sat. | + | + | | + | + |
| Potassium permanganate | a. cold sat. | + | + | | + | |
| Potassium persulphate | a. cold sat. | + | | | + | |
| Potassium sulphate | a. cold sat. | + | + | | + | + |
| Propane, gas | 100 | + | + | | | |
| Propane, liquid | 100 | + | | | | |
| Propionic acid | a. 50 | + | + | | + | |
| Propylene glycol | 100 | + | + | | + | |
| Pyridine | 100 | ± | ± | | ± | |
| Silver salt | a. cold sat. | + | + | | + | + |
| Sodium acetate | a. cold sat. | + | + | + | + | + |
| Sodium bisulphite | a. cold sat. | + | + | | + | |
| Sodium carbonate | a. cold sat. | + | + | | + | + |
| Sodium carbonate | a. 10 | + | + | + | + | + |
| Sodium chlorate | a. 25 | + | + | | + | |
| Sodium chloride (common salt) | a. cold sat. | + | + | + | + | + |
| Sodium chlorite | a. 5 | + | | | + | |
| Sodium hydrogen carbonate (sodium bicarbonate) | a. cold sat. | + | + | + | + | + |
| Sodium hydroxide (caustic soda) | 100 | + | + | | + | |
| Sodium hydroxide solution | 50 | + | + | | + | + |
| Sodium hydroxide solution | 25 | + | + | | + | + |
| Sodium hydroxide solution | 10 | + | + | + | + | + |
| Sodium hypochlorite | a. 13 | ± | ± | | | |
| Sodium nitrate | a. cold sat. | + | + | | + | + |
| Sodium nitrite | a. cold sat. | + | | | + | |
| Sodium perborate | a. cold sat. | + | + | + | + | + |
| Sodium phosphate | a. cold sat. | + | + | + | + | + |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|--|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Chemicals | | | | | | |
| Sodium sulphate | a. cold sat. | + | + | + | + | + |
| Sodium sulphide | a. cold sat. | + | + | | + | + |
| Sodium sulphite | a. cold sat. | + | + | | + | + |
| Sodium thiosulphate (fixing salt) | a. cold sat. | + | + | | + | + |
| Stearic acid | 100 | + | | | + | |
| Succinic acid | a. cold sat. | + | + | | + | + |
| Sulphur | 100 | + | + | + | + | |
| Sulphur dioxide | all | + | + | | + | |
| Sulphuric acid | 98 | ± | – | | ± | |
| Sulphuric acid | 85 | + | ± | | ± | |
| Sulphuric acid | 50 | + | + | | + | |
| Sulphuric acid | 10 | + | + | + | + | + |
| | | | | | | |
| Tartaric acids | a. cold sat. | + | + | | + | + |
| Tetrachloroethane | 100 | ± | – | | – | |
| Tetrachloroethylene (perchloroethylene) | 100 | ± | – | | – | |
| Tetrahydrofurane | 100 | ± | – | | – | |
| Tetrahydronaphthaline | 100 | ± | – | | – | |
| Thiophene | 100 | ± | – | | ± | |
| Tin(II) chloride | a. cold sat. | + | + | | + | + |
| Toluene | 100 | ± | – | | – | |
| Trichloroethylene | 100 | ± | – | | – | |
| | | | | | | |
| Urea | a. cold sat. | + | + | | + | + |
| | | | | | | |
| Water | 100 | + | + | + | + | + |
| | | | | | | |
| Xylene | 100 | ± | – | | – | |
| | | | | | | |
| Zinc salts | a. cold sat. | + | + | | + | + |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|---|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Industrial commodities, cosmetics | | | | | | |
| Acronal® dispersion | | + | | | | + |
| Anti-freeze | | + | + | + | | + |
| Asphalt ¹ | | + | ± | | | + |
| Battery acid | | + | + | | | + |
| Beeswax | | + | ± | | | + |
| Bleaching solution (12.5% active chlorine) | | + | ± | | | |
| Bone oil | | + | + | | | + |
| Brake fluid ¹ | | + | + | | | |
| Chlorinated lime (aqueous suspension) | | + | + | | | |
| Chrome baths ¹ (ind.) | | + | + | | | |
| Chromic-sulphuric acid mixture | | - | | | | - |
| Detergent | a. commercial | + | | | | + |
| | a. ready for use | + | + | + | | + |
| Dextrin | a. cold sat. | + | | | | + |
| Diesel oil | | ± | | | | |
| Engine oil ¹ | | + | ± | - | | + |
| Fatty alcohol sulphonate | | + | | | | + |
| Fir-needle oil | | + | + | | | |
| Fixing salt | a. all | + | + | | | + |
| Floor polish ¹ | | + | ± | | | |
| Fuel oils ¹ | | ± | ± | | | - |
| Furniture polish ¹ | | + | ± | - | | |
| Ink ¹ | | + | + | | | + |
| Kerosene | | ± | ± | | | - |
| Lanolin® (wool fat) | | + | ± | | | + |
| Linseed oil | | + | + | | | + |
| Lysol® | | + | ± | | | + |

¹ Resistance is dependent on composition

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|--|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Industrial commodities, cosmetics | | | | | | |
| Mineral oils (free from aromatic hydrocarbons) ¹ | | + | ± | - | | |
| Nail varnish remover ¹ | | + | ± | | | |
| Nail varnish ¹ | | + | ± | | | |
| Oleum | all | - | | | | - |
| Paraffin | | + | + | - | | + |
| Paraffin oil | | + | ± | - | | + |
| Perfume | | + | | | | + |
| Petroleum | | ± | ± | | | - |
| Petroleum ether | | ± | ± | | | - |
| Photographic developer | a. commercial | + | + | | | + |
| | a. ready for use | + | + | | | + |
| Pine-needle oil | | + | + | | | |
| Raw gasoline | | ± | - | | | - |
| Sagrotan® | | + | ± | | | |
| Shampoo ¹ | | + | + | | | + |
| Shoe polish ¹ | | + | ± | | | |
| Silicon oils ¹ | | + | + | + | | + |
| Soap (bar) | | + | + | | | + |
| Soap solution | | + | + | | | + |
| Soft soap | | + | + | | | + |
| Softener | | | | | | |
| - Dibutylphthalate | | + | | | | + |
| - Diisononylphthalate | | + | | | | + |
| - Dioctyladipate | | + | | | | + |
| - Dioctylphthalate | | + | | | | + |
| - Tricresylphosphate | | + | | | | |
| - Trioctylphosphate | | + | | | | |
| Standard grade petrol | | ± | - | | | - |
| Super grade petrol | | ± | - | | | - |

¹ Resistance is dependent on composition

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|--|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Industrial commodities, cosmetics | | | | | | |
| Tar ¹ | | + | ± | | | |
| Terpentine | | ± | - | | | - |
| Toothpastes | | + | + | | | + |
| Transformer oil ¹ | | + | ± | | | |
| Vaseline | | + | ± | | | + |
| Washing-up liquid | a. commercial | + | | | | + |
| | a. ready for use | + | + | + | | + |
| Water glass | | + | + | | | + |
| White spirit | | ± | - | | | - |
| Foodstuffs | | | | | | |
| Apple juice | | + | + | | | + |
| Apple purée | | + | + | + | | + |
| Beef dripping | | + | + | | | + |
| Beer | | + | | | | + |
| Bitter almond oil | | + | | | | + |
| Blancmange | | + | + | + | | + |
| Brandy | | + | | | | + |
| Butter | | + | + | | | + |
| Buttermilk | | + | | | | + |
| Cake | | + | + | + | | + |
| Cheese | | + | | | | + |
| Cinnamon | | + | | | | + |
| Clove oil | | + | ± | | | |
| Cloves (spice) | | + | | | | + |
| Cocoa (prepared) | | + | + | + | | + |
| Cocoa powder | | + | | | | + |
| Coconut oil | | + | + | | | + |
| Coffee (beans and ground) | | + | | | | + |
| Coffee (prepared) | | + | + | + | | + |
| Cola drink | | + | | | | + |
| Corn oil | | + | ± | | | + |
| Cream, whipped cream | | + | | | | + |

¹ Resistance is dependent on composition

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|------------------------|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Foodstuffs | | | | | | |
| Curds | | + | | | + | |
| Edible oil, vegetable | | + | ± | | + | |
| Edible oil, animal | | + | ± | | + | |
| Fish, pickled | | + | + | + | + | |
| Flour | | + | | | + | |
| Fruit juices | | + | + | | + | + |
| Fruit salad | | + | | | + | |
| Gelatine | a. all | + | + | | + | |
| Gin | | + | | | | |
| Grapefruit juice | | + | + | | + | + |
| Honey | | + | + | | + | + |
| Horseradish (prepared) | | + | | | + | |
| Jam | | + | + | + | + | |
| Jelly | | + | + | + | + | + |
| Kippers | | + | | | + | |
| Lemon flavouring | | + | | | | |
| Lemon juice | | + | + | | + | + |
| Lemon oil | | + | | | | |
| Lemon peel | | + | | | | |
| Lemonades | | + | | | + | |
| Liqueurs | all | + | | | + | |
| Liver oil | | + | | | + | |
| Margarine | | + | + | | + | |
| Mayonnaise | | + | | | + | |
| Milk | | + | + | + | + | + |
| Milk products | | + | + | + | + | + |
| Mineral water | | + | + | + | + | + |
| Mustard | | + | | | + | |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|-------------------------|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Foodstuffs | | | | | | |
| Olive oil | | + | + | | + | |
| Orange juice | | + | + | | + | + |
| Orange peel | | + | | | | |
| Orange oil (sweet) | | + | | | | |
| Palm oil | | + | ± | | + | |
| Paprika (spice) | | + | | | + | |
| Peanut oil | | + | + | ± | + | |
| Pectin | a. cold sat. | + | + | | + | |
| Pepper | | + | | | | |
| Peppermint oil | | + | | | | |
| Pineapple juice | | + | + | | + | + |
| Pork dripping | | + | + | ± | + | |
| Potato (mashed) | | + | + | | + | + |
| Potato salad | | + | | | + | |
| Rum | | + | + | | + | |
| Rum flavouring | | + | | | | |
| Salt (dry) | | + | + | + | + | |
| Salt water | all | + | + | + | + | + |
| Sauerkraut (prepared) | | + | + | + | + | + |
| Sausage | | + | + | | + | |
| Soda water | | + | | | + | |
| Soya oil | | + | ± | | + | |
| Starch, starch solution | a. all | + | + | | + | |
| Sugar beet syrup | | + | + | + | + | |
| Sugar solution | a. all | + | + | + | + | |
| Sugar, dry | | + | + | + | + | |
| Tea (prepared) | | + | + | + | + | + |
| Tea leaves | | + | + | | + | |
| Tomato juice | | + | + | | + | + |
| Tomato ketchup | | + | + | | + | |
| Vanilla | | + | | | + | |
| Vegetables | | + | + | + | + | + |
| Vinegar | commercial | + | + | | + | + |

| Substance | Concentration by mass (%) | Homopolymer Heterophasic Copolymer | | | Random Copolymer | |
|-------------------|------------------------------|---------------------------------------|------|-------|------------------|------|
| | | 20°C | 60°C | 100°C | 20°C | 60°C |
| Foodstuffs | | | | | | |
| Whisky | | + | | | + | |
| Wine, mulled wine | | + | + | | + | + |
| Yeast | a. all | + | | | + | |

Note:

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, this data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither does it imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

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