Masterbatches and/or Compounds which contain hydrophilic additives and are used for producing hydrophilic compositions or articles have to satisfy demanding requirements: the compositions should have a high loading, i.e. a high concentration of the hydrophilic additives, and it should be possible to set the desired contact angle between the polymer surface and water in the final article. Further requirements are good miscibility and compatibility with the polymer of the final application or the final article. Additionally, a high absorption of water or meat juice in foamed polystyrene food trays is wanted. A measurable variable for the absorptive properties of a polystyrene surface for aqueous liquids is the surface angle (static contact angle) of the polystyrene surface to water. The lower the surface angle, the higher is the absorptive property.

EP 2 289 994 A2 discloses an absorbent masterbatch chip composition for a polystyrene foam tray, wherein the masterbatch chips comprise an organic anionic sulphonate, calcium carbonate and talc.

The known compositions, however, do not satisfy all present-day requirements of industry, especially their absorptive properties are not sufficient. There is a need for masterbatches and Compounds containing hydrophilic additives which provide for a low static contact angle and are still compatible with the polymeric material with respect to formability and mechanical stability, e.g. density, stiffness and tear strength.

It was found that the following composition Z comprising a polystyrene and a particular mixture of hydrophilic additives surprisingly displays improved properties as to the before described demands.

Accordingly, one aspect provides the use of a composition Z comprising a component A, a component B and a component P for enhancing the hydrophilicity of solid non-foamed or foamed polystyrene, wherein

the component A is an alkyl sulfonate, alkylbenzene sulfonate and/or olefin sulfonate,

the component B is a polyethylene glycol,

and the component P is a polystyrene and/or an alloy thereof, to obtain a hydrophilic solid non-foamed or foamed polystyrene having a static contact angle of from 5° to 84°.

Patent Claims:

1. Use of a composition Z comprising a component A, a component B and a component P for enhancing the hydrophilicity of solid non-foamed or foamed polystyrene, wherein
the component A is an alkyl sulfonate, alkylbenzene sulfonate and/or olefin sulfonate,
the component B is a polyethylene glycol, and
the component P is a polystyrene and/or an alloy thereof, to obtain a hydrophilic solid non-foamed or foamed polystyrene having a static contact angle of from 5° to 84°.

2. The use as claimed in claim 1, wherein the composition Z is a masterbatch MB or a Compound.

3. The use as claimed in claim 1 or 2, wherein the composition Z comprises of from 0.06 to 90 % by weight of the sum of the components A and B.

4. The use as claimed in any of claims 1 to 3, wherein the composition Z comprises the component A and component B with a weight ratio of component A to component B of from 0.1 to 10.0.

5. The use as claimed in any of claims 1 to 4, wherein the composition Z comprises
0.2 to 30 % by weight of component A,
0.4 to 60 % by weight of component B,
10 to 99.4 % by weight of component P,
with the weight % being based on the total weight of composition Z.

6. The use as claimed in any of claims 1 to 4, wherein the composition Z is a Compound and comprises
0.0167 to 1.47 % by weight of component A,
0.0333 to 2.93% by weight of component B;
95.6 to 99.95 % by weight of component P;
with the weight % being based on the total weight of composition Z.