★★★＜第 20 回知的財産翻訳検定試験【第 11 回和文英訳】＞★★★
<<化学 >>

問 1
[Claim 1]

A piezoelectric ceramic containing lead zirconate titanate as a main component, the piezoelectric ceramic comprising crystal grains having a composite oxide represented by $((Pb_{a-x}B_x)\ Ti_yZr_{1-y})O_3$ as a main component and grain boundaries existing between the crystal grains and in which Zn element is unevenly distributed, characterized in that; the aforementioned B is at least one type of element selected from alkali metals consisting of Na, K, and Li, and
the aforementioned a, x, and y satisfy 0.95<= a <= 1.02, 0<= x <=0.2, and 0.2<= y <=0.9 respectively.

[Claim 2]

The piezoelectric ceramic according to Claim 1 characterized in that, in the crystal grains, a composite oxide calculated based as $Pb(Zn_bM1_c)O_3$ is solid soluted as the first accessory ingredient.

[Claim 3]

A piezoelectric element characterized in a form of a piezoelectric body layer consisting of the piezoelectric ceramic according to claims 1 or 2 and an internal electrode layer comprising Ag and Pd which are laminated alternately.

問 2
[0002]

An oily cosmetic composition shows a high emollient feeling and excellent durability of makeup effects. In regard to makeup and cosmetics, solid or half-solid types are especially preferred because of easiness of carrying and/or simplicity of use. However, an oily cosmetic composition tends to bring a sticky feeling after finish because it contains an oil agent as a main ingredient, while the solid or half-solid types in which oily agent is solidified with solid oil show rub-off resistance in taking out from a container and/or heavy spreading resistance in applying on skin.

So far, various researches have been made in order to solve these problems. For example, there are technical knowledge of oily cosmetics containing hollow resin powder having a specific particle diameter and specific gravity and showing no stickiness and easy spreading (Patent document 1), technical knowledge of solid cosmetics formulated with a specific amount of porous powder and an oil content showing no stickiness and excellent moist feeling (Patent document 2) and the like.

問 3

A polyamide reverse osmosis membrane according to the present invention is a polyamide membrane with pendant 2-methacryloyloxyethyl phosphorylcholine (hereinafter also abbreviated as MPC) polymer chains formed by graft polymerization. The MPC polymer chains pendant to the polyamide membrane are formed by the graft polymerization of MPC from initiating sites present in the polyamide membrane.

As used herein, the term "initiating sites present in the polyamide membrane" refers to active sites (i.e., active groups) formed in a polyamide membrane serving as an intermediate for the polyamide reverse osmosis membrane according to the present invention during the formation of the polyamide membrane. Examples of such active groups include alkyl halide groups and acid halide groups. These active groups initiate the polymerization of MPC to form a graft copolymer having MPC polymer chains pendant to the polyamide membrane, thus providing the polyamide reverse osmosis membrane according to the present invention.

問 4

Water-based aerosol paint compositions of Examples 1 to 6 and Comparative Examples 1 and 2 were prepared by adding dimethyl ether (DME) as a propellant to the water-based aerosol paint stock solutions shown in Table 1.

As shown in Table 1, the water-based aerosol paint compositions of Examples 1 to 6 had good aerosolization and coating properties. These results demonstrate that the use of a dispersion resin as a binder eliminates or reduces the use of a water-soluble organic solvent (i.e., to 3% by mass or less of the water-based aerosol paint stock solution), thereby providing a substantially completely water-based aerosol paint stock solution.

In contrast, the water-based aerosol paint compositions of Comparative Examples 1 and 2 had poor aerosolization and coating properties since the water-based

aerosol paint stock solutions used therein had improper pH levels. The results also demonstrate that a water-based aerosol paint composition prepared from a water-based aerosol paint stock solution containing 46% by mass or more or 13% by mass or less of a dispersion resin has poor coating properties.