

★★★ <第28回知的財産翻訳検定試験【第15回和文英訳】> ★★★  
《 1 級課題 -化学- 》

【問 1】

What is claimed is:

1. An epoxy group-containing cyclic organosiloxane represented by general formula (1):

wherein  $R^1$ s each independently represent  $C_{1-10}$  alkyl or  $C_{6-10}$  aryl;  $R^3$ s each independently represent a substituent containing an epoxy group;  $R^4$ s each independently represent  $C_{1-4}$  alkyl;  $R^5$ s each independently represent a halogen atom, a  $C_{1-20}$  alkoxy optionally having an oxygen atom replacing a carbon atom in the carbon chain, or  $C_{6-10}$  aryloxy;  $R^6$ s each independently represent a hydrogen atom or  $C_{1-14}$  alkyl optionally containing a substituent selected from halogen atoms and vinyl, thiirane, (meth)acryl, mercapto, iso(thio)cyanate, succinic anhydride, perfluoroalkyl, polyether, and perfluoropolyether groups;  $k$  is an integer from 2 to 8;  $m$  is an integer from 2 to 14;  $x$  is an integer from 1 to 3;  $p \geq 2$ ;  $q \geq 1$ ;  $r \geq 0$ ; and  $p+q+r$  is an integer from 3 to 6.

【問 2】

[Background Art]

[0002] It often becomes a problem that in food, especially in ground meat, pork is added without an appropriate indication of the ingredients. In addition, there are many people in the world who want pork-free food because of allergies or religious reasons.

[0004] As a method for detecting pork in food without using DNA sequences or proteins, there is a method using chemical composition of pork fat (Non-Patent Document 1). There is also a method using the Boemer number related to melting point of lard (Non-patent Document 2). Furthermore, there is a method of detecting pork using Raman spectroscopy (Non-patent Document 3). However, unlike the method using DNA sequences or proteins, the method using chemical composition of pork fat or the method using the Boemer number related to melting point of lard cannot label pork specifically, resulting in a failure to detect a small amount of pork.

In addition, in the conventional method of detecting pork fat using Raman spectroscopy, it is necessary for a sample to contain 50% or more of pork in order to detect the pork.

【問 3】

The oxide may be crystalline, non-crystalline, or amorphous. In particular, the oxide preferably includes Ti, V, Nb, Mo, or W with the number of d-electrons being zero (0) or five (5). More specifically, for example, the oxide is preferably at least one type of oxide selected from the group consisting of  $\text{Li}_4\text{Ti}_5\text{O}_{12}$ ,  $\text{TiO}_2$ ,  $\text{V}_2\text{O}_5$ ,  $\text{WO}_3$ ,  $\text{MoO}_3$ , and  $\text{Nb}_2\text{O}_5$ . These oxides are less likely to be thermally decomposed in the step of heating particles of the oxide and a hydrocarbon gas in a vapor phase that will be described later.

Particles of the oxide and a hydrocarbon gas are then heated in a vapor phase, to deposit, on the surface of the particles, a carbon material produced by thermal decomposition of the hydrocarbon gas. In this way, by vapor phase growth (or CVD), the hydrocarbon gas spreads over entire surfaces of the oxide particles, and thus, a thin and uniform film (cover layer) including a carbon material can be formed on the surface of the oxide particles. With this method for producing a non-aqueous secondary battery electrode material according to the present embodiment, the surface of the oxide particles can be made electroconductive uniformly with a small amount of carbon material.

【問 4】

[0084] <Packaging Test>

By using a filling and packaging machine (FP2000 manufactured by Natec Co.), packages were prepared by filling cheese melted at 80°C in each of the laminated-film packaging materials of the Examples and Comparative Examples. In preparing the packages, side sealing was performed under two different conditions of the rotation speed of seal bars of the machine, namely, 400 rpm and 1000 rpm. This means that the higher the rotation speed, the higher the package production speed. The sealing temperature of side sealing was set at 150°C. After filling the packages, a side seal portion of each package was cut into a narrow strip having a width of 15 mm.

Then, in accordance with JIS K 6854, the interlayer adhesion strength of the strip was measured under a 25°C atmosphere with a tension speed of 50 mm/min. Then, the peeled form of the laminated-film strip peeled in the strength test was confirmed. The results are shown in Table 2. The unit of seal strength in the table is N/15 mm.