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UNITED STATES PATENT OFFICE

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ALKALI METAL IODIDE COMPOSITION

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This invention relates to alkali metal iodide compositions and has for its object to provide a dry finely divided product which can be packed and kept indefinitely as a free running mixture.

Alkali metal iodides, particularly potassium iodide, are used as an ingredient in stock foods, table salt, and similar goods to provide the element iodine. The amount of iodide so used is extremely small and therefore its even distribution is necessary. The iodide must be reduced to an almost impalpable powder to assure proper distribution because of its hygroscopicity, and it is impossible to reduce it without adding diluents. Pure alkali metal iodides reduced to a fine powder will invariably cake and eventually solidify.

It is not necessary that the iodide product should remain free flowing indefinitely when exposed to the atmosphere as, after it has been incorporated in the food, it will not affect the free running qualities of the food because it is used in such small proportion. On the other hand it is important that it should remain free running indefinitely when packed in containers and also that it should remain free running for the short time it is exposed to the air before being incorporated in the food. Mixtures of alkali metal iodides with diluents such as magnesium or calcium carbonate, or fuller's earth are unsatisfactory because they lump even while kept in containers and quickly lump when exposed to the air.

I have found after considerable investigation of this problem, that if an oxide having a greater affinity for water than either the iodide or the diluent is added to the mixture of iodide and diluent, a product results which remains unexpectedly free from lumping or caking under the conditions to which these products are exposed before being incorporated in the foodstuff. Presumably the reason for this is that the oxide absorbs small amounts of moisture forming the corresponding hydroxide, where in the mixtures heretofore used the iodide absorbs this moisture. The beneficial effect of such oxide is very marked, and enables the product to be stored without trouble due to caking and to be exposed to the air without immediately lumping.

Calcium oxide has been found to be the most satisfactory oxide for this purpose, but the oxides of strontium, barium, and magnesium have also been found satisfactory. The diluent used with the iodide has no material influence on the effect of the oxide so any of the known diluents can be used but calcium carbonate is the most satisfactory and therefore the preferred product is composed of potassium iodide, calcium carbonate, and calcium oxide.

The quantity of oxide to be added to the iodide and diluent can be varied greatly, but at least .2% must be present in the final product to obtain any noticeable improvement. The higher the proportion of oxide, the more water may be absorbed without caking, but it has been observed that the effect of the oxide increases much more rapidly as the percent approaches 2% than it does above 2%.

The proportion of diluent in the product used may remain the same as heretofore known, usually about 10%, but it is preferred that the amount of diluent be decreased by an amount equal to the amount of oxide added. The diluent may be replaced entirely by the oxide, especially where the product is to be mixed with cattle food.

A specific mixture which has proved satisfactory is as follows:

	Per cent by weight
Potassium iodide	90
Calcium carbonate	8
Calcium oxide	2

In place of the calcium carbonate any of the other heretofore known diluents may be used such as magnesium, carbonate, fuller's earth.

Other alkali metal iodides, such as sodium iodide, can be used in place of potassium iodide and I do not restrict my invention to potassium iodide in the claims except where expressly stated.

The invention claimed is:

1. A dry powdered composition compris-

ing an alkali metal iodide and approximately 2% of an oxide having a greater affinity for water than the alkali metal iodide.

2. A dry powdered composition comprising an alkali metal iodide and approximately 2% of an oxide of an element of the group consisting of the alkaline earths and magnesium.

3. A dry powdered composition comprising an alkali metal iodide and approximately 2% of calcium oxide.

4. A dry powdered composition comprising an alkali metal iodide, a diluent, and approximately 2% of an oxide having a greater affinity for water than the alkali metal iodide or the diluent.

5. A dry powdered composition mainly comprising an alkali metal iodide, a diluent, and approximately 2% of an oxide of an element of the group consisting of the alkaline earths and magnesium.

6. A dry powdered composition comprising an alkali metal iodide, a diluent, and approximately 2% of calcium oxide.

7. A dry powdered composition comprising potassium iodide, a diluent, and approximately 2% of an oxide having a greater affinity for water than potassium iodide or the diluent.

8. A dry powdered composition comprising potassium iodide, a diluent, and approximately 2% of an oxide of an element of the group consisting of alkaline earths and magnesium.

9. A dry powdered composition comprising potassium iodide, a diluent, and approximately 2% of calcium oxide.

10. A dry powdered mixture comprising 90% potassium iodide, 8% calcium carbonate and 2% calcium oxide.

Signed at Brooklyn, in the county of Kings and State of New York, this 30th day of July, A. D. 1929.

JOHN LAWRENCE SMITH.