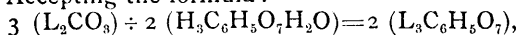


Accepting the formula :—



then 100 parts of carbonate of lithium will be required to neutralize 189.2 parts of citric acid, the product of anhydrous lithium citrate being identical with the amount of citric acid originally employed.

If commercial carbonate of lithium of fine quality contain 98.5 per cent. of real carbonate, then the proportions would be 100 parts of carbonate and 186.5 parts of citric acid.

Lithium citrate when prepared from these proportions and dried until anhydrous was neutral to test paper, while a specimen made in accordance with the British Pharmacopœia was distinctly alkaline, and one by the United States' formula strongly acid, and much discoloured.

A solution of specific gravity 1.230 when set aside, produced* crystalline citrate of lithium, more generally used in pharmacy some fifteen or twenty years ago than at the present time.

The definition of "deliquescent," applied by the British and United States' Pharmacopœias to citrate of lithium, is (as remarked by Squire) inaccurate, and this can doubtless be confirmed by those accustomed to handle the salt.

Incineration, as a means of quantitative estimation, is given in both the Pharmacopœias referred to, the acid salt of the one, and the alkaline salt of the other, being both stated to yield the theoretical quantity of 53 per cent. of carbonate by ignition.

It is apparent that if different proportions of carbonate be used for the production of two citrates, as these Pharmacopœias direct, then the weight of these residues upon incineration cannot be identical as stated, but must be in proportion to the weight of the original carbonate employed.

The theoretical quantity of carbonate cannot easily be obtained by incineration of lithium citrate, inasmuch as carbonate of lithium loses a portion of its carbonic acid at high temperatures and becomes caustic.

In order to obtain approximate results it is advisable to subject the citrate to the minimum amount of heat, and to conduct the incineration rapidly.

The examination of trade specimens of lithium citrate indicates that not only do manufacturers regard the anhydrous salt as required by the Pharmacopœia as an unnecessary refinement, but they simply decline to attempt its production, for in no instance have I been able to procure specimens that contained more than 84 per cent. while those most generally met with do not exceed 74 per cent of anhydrous citrate.

*Mr. Sandford has kindly favoured me with crystals made twenty years since, from proportions almost identical with those I have given. These crystals contain about 73 per cent. of anhydrous citrate of lithium, and correspond in all probability to the formula $\text{L}^3\text{C}_6\text{H}_5\text{O}_7 + 4\text{H}^2\text{O}$.