

## MAGMA MAGNESIAE.\*

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The National Formulary directs that Magnesia Magma, commonly called Milk of Magnesia, be made by pouring a filtered solution of 81 Gm. of Sodium Hydroxide in 4000 Cc. of Water into a filtered solution of 250 Gm. of Magnesium Sulphate in 4000 Cc. of Water. The precipitate is washed by decantation, then drained and mixed with sufficient water to make the product measure 1000 Cc.

This looks like an exceedingly simple formula that should yield a satisfactory preparation. However, in my experience, it has not proven so, and several modifications are necessary and are included in the improved formula now presented.

The author of the N. F. formula aimed to obtain a very fine precipitate by using very dilute solutions and precipitating at room temperature. He succeeded in doing this, but the precipitate is so light and commonly so bulky that it is with difficulty that it can be reduced to a volume of 1000 Cc. and remain sufficiently fluid to pour. The resulting magma usually resembles thick starch paste.

An examination of the wash water shows that the Magnesium is not all precipitated. This is readily understood when the formula is critically examined. The quantity of Sodium Hydroxide directed, 81 Gm., is shown by calculation to be the theoretical amount of pure anhydrous Sodium Hydroxide that would be required to react with 250 Gm. of Magnesium Sulphate, U. S. P., but as Sodium Hydroxide, U. S. P., contains about 90 percent pure NaHO, it is self-evident that the formula directs an insufficient amount.

The chemist has been taught the difficulty of completely precipitating Magnesium Hydroxide in the presence of alkaline chlorides or sulphates and that an excess of the solution of potassa or solution of soda is necessary and that "the separation of this precipitate is greatly promoted by boiling the mixture." The present N. F. formula has insufficient alkali instead of an excess, and, moreover, commits a manipulative error in directing that the Sodium Hydroxide solution be poured into the solution Magnesium Sulphate so that at no time is an excess of alkali present. The use of hot solutions instead of cold should also be directed.

To correct these defects, the following improved formula is presented:

## MAGMA MAGNESIAE.

Magnesia Magma.	Milk of Magnesia.
Magnesium Sulphate.....	250 Gm.
Sodium Hydroxide.....	100 Gm.
Water, a sufficient quantity.	

Dissolve the Sodium Hydroxide in 1000 Cc. of Water and the Magnesium Sulphate in another portion of 1000 Cc. of Water and filter the solutions. Heat the solutions to boiling and add the Magnesium Sulphate solution to the solution of Sodium Hydroxide with constant stirring. Boil the mixture for fifteen minutes, then remove from the fire and wash several times by decantation and then on a close muslin strainer until the washings are free from saline taste and

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give not more than a slight turbidity with Barium Chloride T. S. Allow the magma to drain, then transfer to a suitable vessel and add sufficient water to make 1000 Cc. and mix thoroughly.

In order to obtain a nice white and smooth preparation, one must be careful of the character of the water used. If distilled water is produced in abundance and at a minimum cost, it can be used to advantage. The cost of distilled water to the average pharmacist, however, would preclude its use for the washing of this preparation. Satisfactory water can be cheaply and readily obtained by adding 5 Gm. of powdered Magnesium Carbonate to each litre, boiling and then filtering.

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### ELIXIR FERRI, QUININAE ET STRYCHNINAE PHOSPHATUM.\*

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The formula for the Elixir of the Phosphates of Iron, Quinine and Strychnine, U. S. P. VIII, has been criticised largely because of the uncertainty of the color in different lots and the rapid changes that take place in the color and flavoring on keeping. Recently, another question has been raised, namely, if Quinine in solution with Acetic Acid is not partly changed to Quinotoxin. Consequently, it seems desirable to adopt in the revision a different formula.

The pharmaceutical journals have presented a number of proposed formulas and it has fallen to my lot to try many of these. Without going into a detailed account of the experiments or criticism of these formulas, I will submit the improved formula which I have recommended:

#### ELIXIR FERRI, QUININAE ET STRYCHNINAE PHOSPHATUM.

Elixir of the Phosphates of Iron, Quinine and Strychnine.

Soluble Ferric Phosphate.....	17.5	Gm.
Potassium Citrate.....	5	Gm.
Quinine .....	8.75	Gm.
Strychnine .....	0.275	Gm.
Phosphoric Acid.....	2	Cc.
Alcohol .....	200	Cc.
Glycerin .....	200	Cc.
Compound Spirit of Orange.....	10	Cc.
Purified Talc.....	30	Gm.
Distilled Water, a sufficient quantity		
To make.....	1000	Cc.

Dissolve the Quinine and the Strychnine in the Alcohol and 100 Cc. of Distilled Water to which has been added the Phosphoric Acid. Add to this the Compound Spirit of Orange. Dissolve the Soluble Ferric Phosphate and the Potassium Citrate in 100 Cc. of warm Distilled Water. To this solution add the Glycerin and then the alkaloidal solution and sufficient Distilled Water to make the product measure 1000 Cc. Mix the Purified Talc intimately with the liquid and then filter, returning the first portion of the filtrate until a transparent

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