

## Poisons.

## INORGANIC.

By Miss E. L. B. FORSTER,  
Analyst to The Morgan Crucible Co.

No. VII.

TABLE No. 2.

*Red Precipitate.*

Red oxide of mercury is one of the mercuric oxides. Its formula is Hgo. The red and yellow oxides are the only ones official, although in the two mercury lotions the yellow mercuric and the black mercurous oxides are formed. Red precipitate is ordered in the Pharmacopœia to be prepared by heating mercurous nitrate until acid vapours cease to be evolved. But on a large scale it is generally obtained by heating mercuric nitrate and mercury together until acid vapours are driven off.

It may also be prepared by heating mercury in air, but practically this method is not employed; it is of theoretic interest only nowadays. It was used years ago, when mercury was heated up to about 315°, and kept at that temperature for several weeks. Obtained by this method, it is darker in colour and highly crystalline. When old writers mentioned red precipitate, what they spoke of was severally prepared by this method.

It is a bright orange-red crystalline substance. It is almost insoluble in water, soluble in hydrochloric acid. On heating it becomes darker in colour, but on cooling it resumes its red colour. If the heat be continued for a little time the oxide splits up into oxygen and mercury. If a small quantity be placed in a dry test tube and held over a flame, the oxygen will be given off, and the vapour of mercury condense up the sides of the tube. If an incandescent taper be held near the mouth of the tube, it will burst into flame (proving the presence of the oxygen). Special interest is attached to this, as by heating red oxide of mercury Priestley first isolated oxygen; he concentrated the sun's rays upon it by means of a powerful lens. The preparation of oxygen from red precipitate is now confined to laboratory or lecture experiments.

If solution of potash is added in excess to the oxide, dissolved in hydrochloric acid, a precipitate is thrown down, which is the yellow oxide, the formula of which is also Hgo; it is a mercuric oxide, while the black Hg<sub>2</sub>O is a mercurous oxide, not recognised in the Pharmacopœia.

There is no official dose for red oxide of mercury. It is not prescribed for internal use, only for external. There is an ointment called red mercuric oxide or red precipitate ointment. It is used in cases of skin disease, for inflammation of the joints, and for syphilis. Many medical men prescribe the yellow oxide in place of the red, as it is as efficacious, and is thought to make a better and smoother preparation.

It is amorphous, not crystalline. Ointments called golden ointment are made with the yellow oxide.

In cases of poisoning from red precipitate the stomach pump should be used, and emetics given. Albumen, in the form of eggs mixed with milk, is one of the best antidotes for mercurial poisoning. If there is much pain, tincture of opium in very small doses may be administered.

*White Precipitate.*

Ammoniated mercury, commonly called white precipitate, or infusible white precipitate, is sometimes spoken of as ammonia chloride of mercury or mercuric ammonium chloride. Its formula is NH<sub>2</sub>HgCl. It is prepared by pouring a solution of perchloride of mercury into a solution of ammonia. The precipitate is collected on a filter and well washed, then dried at a temperature not above 100° C.

It is an ammoniacal mercuric compound, sometimes called a mercurammonium salt. This and other similar compounds may be looked upon as salts in which some of the hydrogen of the ammonia has been replaced by mercury.  $HgCl_2 + 2NH_4OH = NH_2HgCl + 2H_2O + NH_4Cl$ . The most important of these salts are white precipitate, and the old fusible white precipitate, which is made by adding an alkali, generally solution of potash, to a solution of perchloride of mercury containing ammonium chloride. Its formula was NH<sub>2</sub>HgCl.NH<sub>4</sub>Cl. White precipitate is a white powder, nearly insoluble in water, alcohol, or ether, soluble in hydrochloric acid. It will volatilise at a temperature under redness without fusion, leaving only a small quantity of fixed residue. There is no dose; it is never prescribed for internal use, but ordered for external application. There is an ointment official. It is called ammoniated mercury ointment, but is better known by the name of white precipitate.

It contains white paraffin ointment. The strength is one part of the ammoniated mercury to nine parts of white paraffin ointment. There is no other preparation official.

It is used as a stimulant in skin affections; also used largely to destroy pediculi. Indeed, for the latter use white precipitate has become well known, though dilute nitrate of mercury ointment is ordered in its place very often.

White precipitate is extremely poisonous, yet it is one of those things that are often about where there are children, and not always is it realised how deadly a substance it is. In fact, it is frequently used where something much more simple would do, such as spirit of ammonia—in the case of dirty heads.

Perhaps, in this connection, it is best known to hospital nurses, especially in an out-patient department or in district nursing, and they do not always quite grasp what it is, or look upon it as a thing to

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