

The following formulæ show the different methods of preparation :

1. $K^6 O^6 + I^6 = K O. I O^5 + K^5 I^5 =$ by heating $K^6 I^6 + O^6$
2. $Zn + I = Zn I + K O. C O^2 = Zn O. C O^2 + K I$
3. $K O. C O^2 + I + S H = C O^2 + H O + S + K I$

In the first case the salt may contain iodate of potassa from imperfect heating ; the salt generally turns brown on keeping ; its solution is immediately turned brown by tartaric acid, owing to separation of iodine from the iodic acid, and it precipitates salts of baryta.

In the second and third cases it may contain carbonate of potassa. This is recognized by its insolubility in alcohol, and by the effervescence produced by the addition of an acid.

Chloride of potassium is sometimes used as a means of adulteration. To detect it a portion of the salt is *fully* precipitated by nitrate of silver, the precipitate washed out, treated with ammonia, and the filtrate supersaturated with nitric acid, which precipitates chloride of silver. The chloride is soluble, the iodide insoluble in ammonia.

OXIDE OF MERCURY

May be adulterated with red lead or with some red earthy substance, such as brick dust. On strongly heating for some time until all the mercury has been volatilized, a yellow residue will remain if red lead were present. This residue is perfectly soluble in nitric acid, to which the usual tests for lead may be applied. If any residue remains insoluble it is probably some earthy adulteration.

CALOMEL

Sometimes contains traces of corrosive sublimate, which may be extracted by means of hot water, and detected as described at page 44. It should be borne in mind that calomel, when heated with hydrochloric acid, is rapidly converted into corrosive sublimate and metallic mercury. By this reaction the presence of mercury instead of its suboxide, in some medicinal preparations, may be proved. Metallic mercury being quite insoluble in hydrochloric acid, the substance under examination when thus treated will yield a solution free from metal ; if however it contains suboxide, it will be first converted into subchloride, and by further action into mercury and chloride, which remains dissolved.

