

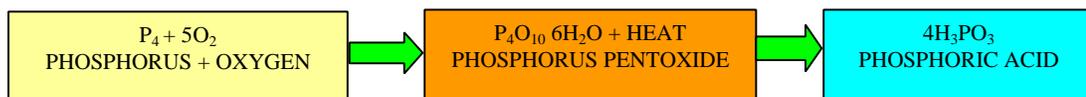
PHOSPHORUS SMOKE

White Phosphorus (WP) is one of the earliest smoke producing agent and one of the most efficient. The German scientist Brandt discovered it in 1669. Heating calcium phosphate and distilling the vapours given off makes WP. 1lb of phosphorus combines with 1.33lbs of oxygen and .9lbs of water to form 3.23lbs of phosphoric acid, which makes WP the best smoke producer of any known material. It is a solid which means that it cannot be sprayed as a liquid without making it into a very dangerous material indeed.

WP has the advantage of producing a smoke screen very rapidly but, because of the heat produced, the smoke rises far too quickly. This effect is called "Pillaring". WP has the added advantage of being a good incendiary agent. Not as good as Thermite as it won't ignite every thing it comes into contact with only things that are normally flammable. Its vapours are toxic but they oxidise so rapidly that sufficient concentrations to be harmful can't be built up under normal field conditions. It is mixed with red phosphorus in the ratio of 1:2 in artillery projectiles to provide smoke for observation purposes.

The great disadvantage associated with WP is its distressing characteristic of bursting into flame on contact with the air. This means that all manufacturing processes must be carried out in the absence of air and the storage of munitions filled WP need special considerations. Just about all soldiers are very wary of WP.

White phosphorus behaves in the following manner:



On exposure to the air the WP combines with the oxygen in the air and forms Phosphorus Pentoxide. At the same time great quantities of heat are evolved.

The Phosphorus Pentoxide combines with the moisture in the air and forms Phosphoric Acid. This is the smoke....