

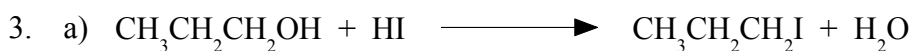
Chemguide – answers

ALCOHOLS: REPLACING THE -OH GROUP BY A HALOGEN

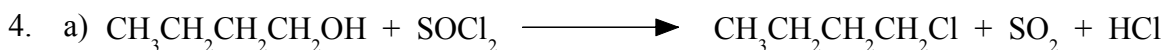
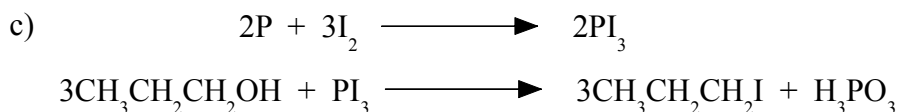
1. a) You would get a violent reaction producing clouds of steamy fumes.
b) Anything which contains a covalently-bound -OH group. Obvious examples are water or a carboxylic acid such as ethanoic acid, CH₃COOH.

2. Method 1: Heat the ethanol with a mixture of potassium (or sodium) bromide and concentrated sulphuric acid, distilling off the product..

Method 2: Heat the ethanol under reflux with a mixture of red phosphorus and bromine, and then distill off the product.



b) Concentrated sulphuric acid is a strong oxidising agent and oxidises iodide ions in the potassium iodide to iodine instead of producing hydrogen iodide. Concentrated phosphoric(V) acid doesn't do this.



b) The other products of the reaction are gases and so remove themselves from the reaction mixture.

c) The reactions are too slow apart from with tertiary alcohols.

d) PCl₃

