

- (ii) In step 2, butanenitrile is heated with HCl(aq) . A hydrolysis reaction occurs.

Construct an equation for the reaction in step 2.

..... [1]

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- (b) Propan-1-ol is converted to compound **T** in a three-step synthesis.

In step 1, SOCl_2 is added to propan-1-ol to produce compound **E**.

In step 2, **E** reacts with a suitable reagent to produce butanenitrile.

In step 3, butanenitrile is heated with NaOH(aq) .

- (i) Name the type of reaction that occurs in step 1.

..... [1]

- (iii) Construct an equation to describe the reaction of butanenitrile with NaOH(aq) in step 3.

..... [2]

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