

13.2 CHARACTERISTIC ORGANIC REACTIONS

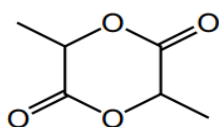
Learning outcomes

Candidates should be able to:

- for an organic molecule containing several functional groups:
 - identify organic functional groups using the reactions in the syllabus
 - predict properties and reactions
- devise multi-step synthetic routes for preparing organic molecules using the reactions in the syllabus
- analyse a given synthetic route in terms of type of reaction and reagents used for each step of it, and possible by-products

Introduction

- Lactide is an intermediate in the manufacture of a synthetic fibre.

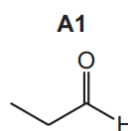
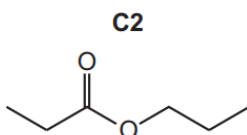


lactide

Which compound, on heating with an acid catalyst, can produce lactide?

- A hydroxyethanoic acid
- B 2-hydroxybutanoic acid
- C 2-hydroxypropanoic acid
- D 3-hydroxypropanoic acid

- C2 can be synthesised using A1 as a single organic reactant.



Devise a multi-step synthetic route to form **C2** from **A1**.

Identify relevant reagents and conditions, and state the organic products of each step. [3]

***This is not a complete note. It is to guide you. It is recommended to study the prescribed textbooks along with this material. ***