OCR (A) Chemistry A-level

Topic 6.2.4 - Carbon-Carbon Bond Formation

Flashcards

What type of mechanism is involved in the reaction between haloalkanes and cyanide ions?

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Nucleophilic substitution

Draw the mechanism of the reaction between 2-bromopropane with cyanide ions.

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What type of reaction is involved in the reaction between carbonyl compounds and cyanide ions?

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Nucleophilic addition

Outline the mechanism for the reaction of ethanal and cyanide.

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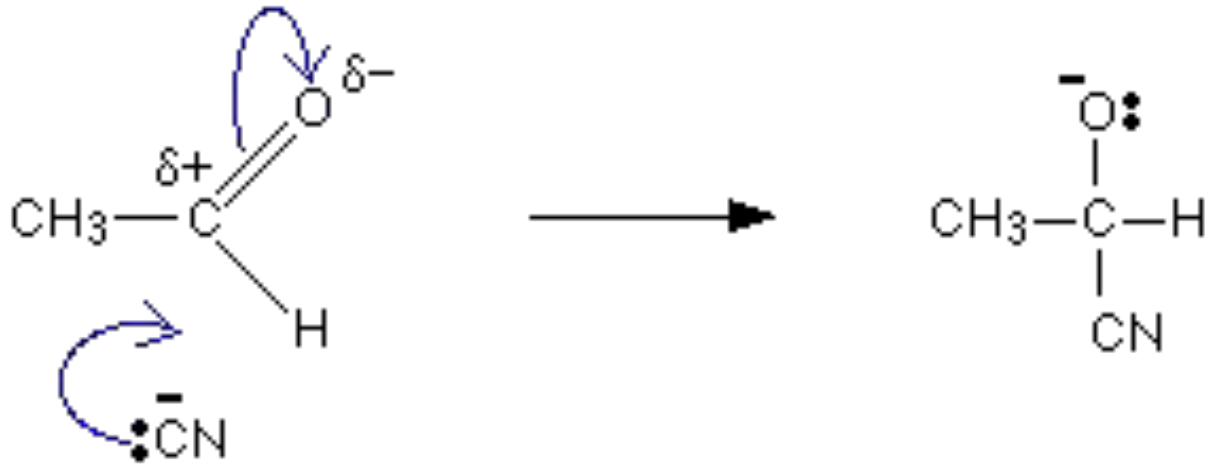

Write an equation for the reaction of the reduction to butanenitrile.

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[H] = H_2/Ni

How can you form a carboxylic acid from a nitrile?

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Acid hydrolysis

What type of catalyst is used for a Friedel-Crafts reaction?

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A halogen carrier (e.g. $AlCl_3$)

Write an equation to form an electrophile that could be used to acylate benzene, starting with $AlCl_3$ and RCOCl.

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$AlCl_3 + RCOCl \rightarrow AlCl_4^- + RCO^+$ (+ on C)

RCO^+ can attack benzene

How could you use a Friedel-Crafts mechanism to add a methyl group to a benzene ring?

How could you use a Friedel-Crafts mechanism to add a methyl group to a benzene ring?

Use a halogenoalkane and $AlCl_3$ to create an electrophile that can attack benzene

Draw the mechanism for the alkylation of benzene.

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