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so many fake sites. this is the first one which worked! Many thanks

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Example 6. Reaction with epoxide

Grignard reagents attack the less substituted end of epoxide

Example 7. Reaction with carbon dioxide

The purpose of acid in the second step is to protonate the negatively charged oxygen.

Example 8. Reaction with acidic hydrogen

This can be used to introduce deuterium.

Deuterium is the heavy isotope of hydrogen.

How it works. Addition to aldehydes and ketones

Grignard reagents are extremely strong nucleophiles. The electrons in the C-Mg bond are heavily polarized towards carbon.

Essentially behaves like R^-

Therefore Grignard reagents will react with electrophiles such as aldehydes and ketones.

Add a washed ether completion of the addition step

41 Grignard Reagents (continued) index

How it works. Addition to epoxide

How it works. Addition to ester

These proceed through a two step mechanism: addition followed by elimination.

Acid is added at the end to protonate the alkoxide.

Elimination of the OR group then forms the ketone.

Addition of Grignard reagent to the ester

As second equivalent of Grignard reagent then adds to the ketone.

Finally, acid (HCl) is added to protonate the resulting alkoxide.

The same mechanism operates for acid halides and anhydrides.

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