

Chirality of Aldehyde Reaction Products

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Response: **Statement 1: False** Reaction of HCN with formaldehyde (HCHO) forms 2-hydroxyacetonitrile (HO-CH₂-CN). In this product, the central carbon is bonded to two identical hydrogen atoms, making it achiral. Thus, not *any* aldehyde yields a product with a chiral carbon atom.

Statement 2: True By definition, a chiral carbon atom (or asymmetric carbon atom) is a carbon atom attached to four distinct atoms or groups of atoms.

- **Statement 1 is incorrect, while Statement 2 is correct.**
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