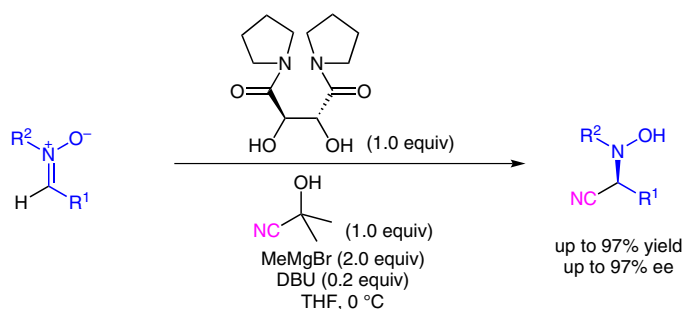
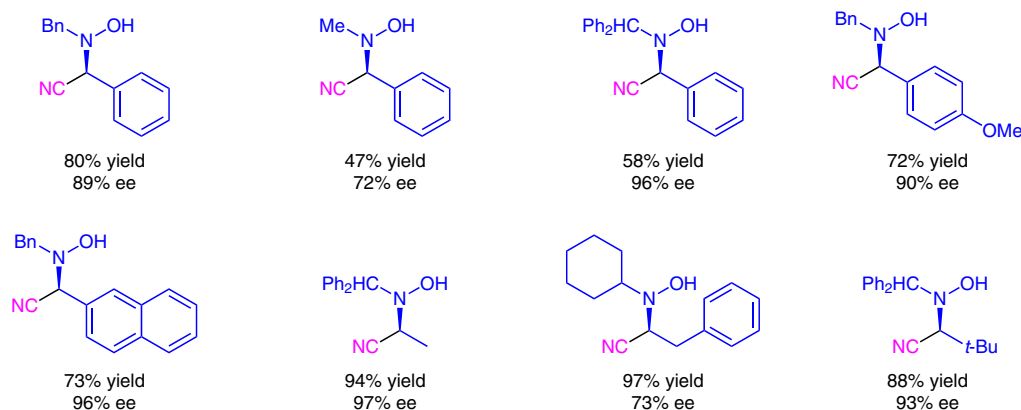


## Asymmetric Strecker-Type Reaction of Nitrones Using Cyanohydrin



R<sup>1</sup> = Ph, PMP, 4-ClC<sub>6</sub>H<sub>4</sub>, 4-BrC<sub>6</sub>H<sub>4</sub>, 1-Naph, 2-Naph, Me, Cy, *t*-Bu  
R<sup>2</sup> = Bn, Me, Ph, CHPh<sub>2</sub>

### Selected examples:



**Significance:** An asymmetric Strecker-type reaction of various nitrones with acetone cyanohydrin using a magnesium–(*R,R*)-tartramide complex was developed to successfully prepare optically active (*S*)- $\alpha$ -amino nitrile derivatives in excellent yield. Thereby, the acetone cyanohydrin serves as a less harmful and easy-to-handle synthetic equivalent of HCN and TMSCN.

**Comment:** The reaction mechanism is proposed to proceed as follows: first, the reaction of cyanohydrin and the (*R,R*)-tartramide with MeMgBr forms the corresponding bromomagnesium salts. The tartramide magnesium salt might be further deprotonated by DBU to form a magnesium ate-complex which coordinates the nitronone. Transfer of the cyano group from the cyanohydrin magnesium salt to the nitronone occurs from the *re* face, forming specifically the (*S*)-enantiomer.