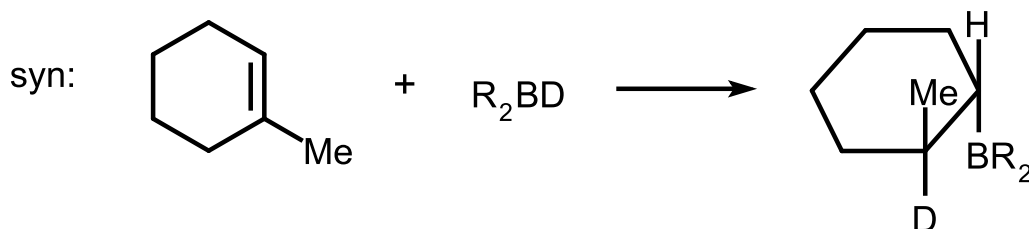
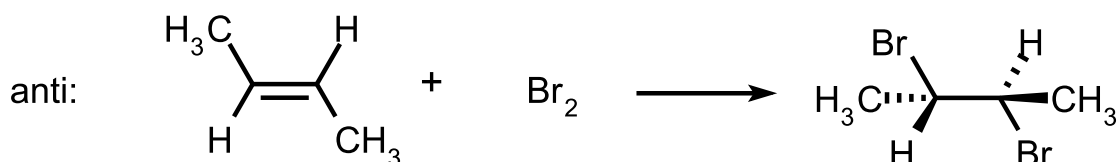


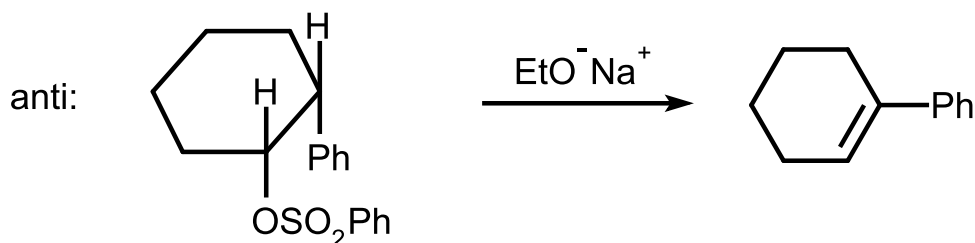
## anti

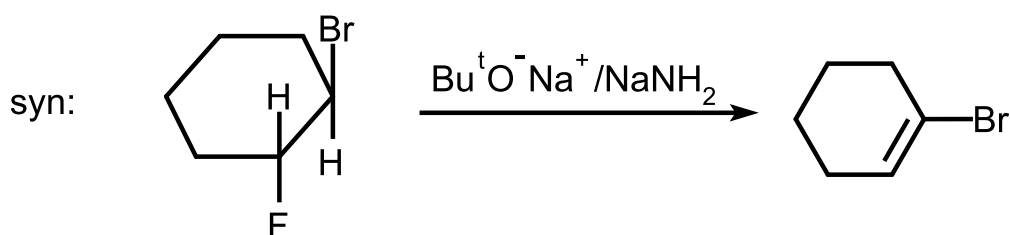
In the representation of stereochemical relationships 'anti' means 'on opposite sides' of a reference plane, in contrast to 'syn' which means 'on the same side', as in the following examples.

- Two substituents attached to atoms joined by a single bond are anti if the torsion angle (dihedral angle) between the bonds to the substituents is greater than  $90^\circ$ , or syn if it is less than  $90^\circ$ . (A further distinction is made between antiperiplanar, synperiplanar, anticlinal and synclinal.)
- In the older literature the terms anti and syn were used to designate stereoisomers of oximes and related compounds. That usage was superseded by the terms 'trans' and 'cis' or *E* and *Z*, respectively.
- When the terms are used in the context of chemical reactions or transformations, they designate the relative orientation of substituents in the substrate or product:
  - Addition to a carbon-carbon double bond:



- Alkene-forming elimination:





In the examples described under (1) and (2) anti processes are always antarafacial, and syn processes are suprafacial.

**See also:** endo, exo, syn, anti

**Source:**

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1084

PAC, 1996, 68, 2193 (*Basic terminology of stereochemistry (IUPAC Recommendations 1996)*) on page 2199