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.

1. 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°, or syn if it is less than 90°. (A further distinction is made between antiperiplanar, synperiplanar, anticalinal and synclinal.)

2. 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 That usage was superseded by the terms 'trans' and 'cis' or $E$ and $Z$, respectively.

3. 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:

1. Addition to a carbon-carbon double bond:

   ![Addition to a carbon-carbon double bond](image)

2. Alkene-forming elimination:

   ![Alkene-forming elimination](image)
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