doi:10.1351/goldbook.R05260

relative configuration

1. The configuration of any stereogenic (asymmetric) centre with respect to any other *stereogenic* centre contained within the same molecular entity. Unlike absolute configuration, relative configuration is reflection-invariant. Relative configuration, distinguishing diastereoisomers, may be denoted by the configurational descriptors R^*, R^* (or *l*) and R^*, S^* (or *u*) meaning, respectively, that the two centres have identical or opposite configurations. For molecules with more than two asymmetric centres the prefix *rel-* may be used in front of the name of one enantiomer where *R* and *S* have been used. If any centres have known absolute configuration then only R^* and S^* can be used for the relative configuration.
   See also: α (alpha), β (beta) (1 and 3)
2. Two different molecules Xabcd and Xabce, may be said to have the same relative configurations if e takes the position of d in the tetrahedral arrangement of ligands around X (i.e. the pyramidal fragments Xabc are superposable). By the same token the enantiomer of Xabce may be said to have the opposite relative configuration to Xabcd. The terms may be applied to chiral molecular entities with central atoms other than carbon but are limited to cases where the two related molecules differ in a single ligand.
   Both definitions can be generalized to include stereogenic units other than asymmetric centres.

Source:
PAC, 1996, *68*, 2193 *(Basic terminology of stereochemistry (IUPAC Recommendations 1996))* on page 2217

