

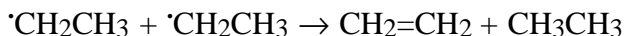
disproportionation

1. Any chemical reaction of the type $A + A \rightarrow A' + A''$, where A, A' and A'' are different chemical species. For example:

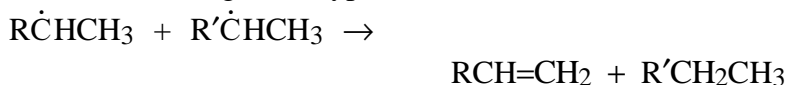


The reverse of disproportionation is called *comproportionation*.

A special case of disproportionation (or 'dismutation') is 'radical disproportionation', exemplified by:



Reactions of the more general type:



are also loosely described as radical disproportionations.

1994, 66, 1107

The following somewhat more restricted usage of the term prevails in inorganic chemistry.

1994, 66, 581

2. A *reversible* or *irreversible transition* in which species with the same oxidation state combine to yield one of higher oxidation state and one of lower oxidation state.

Example: $3\text{Au}^+ \rightarrow \text{Au}^{3+} + 2\text{Au}$

The term also applies to an internal oxidation-reduction process as occurs, for example, among the iron atoms of CaFeO_3 , where $2\text{Fe}^{4+} \rightarrow \text{Fe}^{(4-\delta)+} + \text{Fe}^{(4+\delta)+}$, at Fe subarrays on lowering the temperature.

1994, 66, 581