

## catalytic current

The faradaic current that is obtained with a solution containing two substances **B** and **A** may exceed the sum of the faradaic currents that would be obtained with **B** and **A** separately, but at the same concentrations and under the same experimental conditions. In either of the two following situations the increase is termed a catalytic current. **B** is reduced or oxidized at the electrode-solution interface to give a product **B'** that then reduces or oxidizes **A** chemically. The reaction of **B** with **A** may yield either **B** or an intermediate in the overall half-reaction by which **B'** was obtained from **B**. In this situation the increase of current that results from the addition of **A** to a solution of **B** may be termed a regeneration current. The presence at the electrode-solution interface of one substance, which may be either **A** or the product **A'** of its reduction or oxidation, decreases the over-potential for the reduction or oxidation of **B**. In either case the magnitude of the catalytic current depends on the applied potential. If the current observed with a mixture of **A** and **B** is smaller than the sum of the separate currents, the term non-additive current should be used.

**Source:**

PAC, 1985, 57, 1491 (*Recommended terms, symbols, and definitions for electroanalytical chemistry (Recommendations 1985)*) on page 1494