

# Electrolyte

An electrolyte is a substance that produces an electrically conducting solution when dissolved in a polar solvent, such as water. The dissolved electrolyte separates into cations and anions, which disperse uniformly through the solvent. Electrically, such a solution is neutral. If an electrical potential (voltage) is applied to such a solution, the cations of the solution would be drawn to the electrode that has an abundance of electrons, while the anions would be drawn to the electrode that has a deficit of electrons. The movement of anions and cations in opposite directions within the solution amounts to a current. This includes most soluble salts, acids, and bases. Some gases, such as hydrogen chloride, under conditions of high temperature or low pressure can also function as electrolytes. Electrolyte solutions can also result from the dissolution of some biological (e.g., DNA, polypeptides) and synthetic polymers (e.g., polystyrene sulfonate), termed polyelectrolytes, which contain charged functional groups. A substance that dissociates into ions in solution acquires the capacity to conduct electricity. Sodium, potassium, chloride, calcium, and phosphate are examples of electrolytes, informally known as lytes. In medicine, electrolyte replacement is needed when a patient has prolonged vomiting or diarrhea, and as a response to strenuous athletic activity. Commercial electrolyte solutions are available, particularly for sick children (solutions such as Pedialyte) and athletes (sports drinks, such as Gatorade). Electrolyte monitoring is important in treatment of anorexia and bulimia.

## Electrolyte disorder

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