

Biochemical Information



Acesulfame Potassium (Sunett)

- *Chemical formula:* $C_4H_4KNO_4S$
- *What it is:* Simple ring structure that resembles glucose
- *What it does:* Artificial sweetener to provide taste.

Aspartame

- *Chemical formula:* $C_{14}H_{18}N_2O_5$
- *What it is:* Dipeptide
- *What it does:* Low calorie artificial sweetener that provides taste.

Caffeine

- *Chemical formula:* $C_8H_{10}N_4O_2$
- *What it is:* One of the most widely used psychoactive substances in the world. Caffeine is a mild CNS stimulant with a transient effect that usually passes within a few hours but varies between individuals.
- *What it does:* Some studies have shown that caffeine may improve memory and reasoning responses on tests; other studies have shown that ingesting 3-9mg of caffeine one hour before physical activity improves endurance running and cycling in athletes. No adverse effects in humans have been documented.

Citric Acid

- *Chemical formula:* $C_6H_8O_7$
- *What it is:* Organic acid
- *What it does:* It is a precursor for the citric acid cycle (Kreb's Cycle), which is a major pathway in the cell's production of chemical energy.

Cyanocobalamin

- *Chemical formula:* $C_{63}H_{88}CoN_{14}O_{14}P$
- *What it is:* Synthetic form of Vitamin B-12
- *What it does:* Important for growth, cell reproduction, blood formation, and protein and tissue synthesis.

Folic Acid

- *Chemical formula:* $C_{19}H_{19}N_7O_6$
- *What it is:* Vitamin
- *What it does:* Required for metabolism of carbon compounds, nucleic acids, and amino acids.

Fructose

- *Chemical formula:* $C_6H_{12}O_6$
- *What it is:* Simple sugar
- *What it does:* Can be converted into a form for entry into the primary metabolic pathway in which the chemical energy of its bonds is converted into ATP, the primary "energy" molecule in the body.

Glucose

- *Chemical formula:* $C_6H_{12}O_6$
- *What it is:* Simple sugar
- *What it does:* Enters the primary metabolic pathway in which the chemical energy of its bonds is converted into ATP, the primary "energy" molecule in the body.

Glucuronolactone

- *Chemical formula:* $C_6H_6O_6$
- *What it is:* Simple saccharide (sugar)
- *What it does:* It is a normal human metabolic byproduct formed from glucose. Glucuronolactone is found in connective tissue in animals. Also regulates formation of glycogen. Small amounts shouldn't be harmful.

l-Glutamine

- *Chemical formula:* $C_5H_{10}N_2O_3$
- *What it is:* Amino acid
- *What it does:* Aids in muscle building and maintenance.

Inositol

- *Chemical formula:* $C_6H_6(OH)_6$
- *What it is:* A sugar that is a member of the Vitamin B complex
- *What it does:* Controls cholesterol levels and has potential antioxidant capabilities.

Niacin (nicotinic acid)

- *Chemical formula:* $C_6H_5NO_2$
- *What it is:* Water soluble vitamin
- *What it does:* Derivatives such as NADH are required for metabolism. It is said to aid in the synthesis of amino acids, the subunits of proteins. It has not been directly linked to improving athletic performance.

Niacinamide

- *Chemical formula:* $C_6H_6N_2O$
- *What it is:* Water soluble vitamin
- *What it does:* See niacin above; both are components of the coenzymes NAD and NADP, important in the redox reactions of metabolism.

Pantothenic Acid (also known as D-pantothenol)

- *Chemical formula:* $C_9H_{17}O_5N$
- *What it is:* Synthetic form of Vitamin B-5
- *What it does:* Precursor of coenzyme A. Helps you use fats and carbohydrates to make molecules used for energy. Is involved in more than 100 different metabolic pathways including energy metabolism of carbohydrates, proteins and lipids, and the synthesis of lipids, neurotransmitters, steroid hormones, porphyrins, and hemoglobin. It's found in a wide array of energy drinks and supplements, but its toxicity has not been evaluated.

Potassium sorbate

- *Chemical formula:* $C_6H_8O_2$
- *What it is:* Potassium salt of sorbic acid
- *What it does:* Used to inhibit fungal growth in foods.

Pyridoxine HCL

- *Chemical formula:* $C_8H_{11}NO_3$
- *What it is:* Synthetic form of Vitamin B-6
- *What it does:* Energy production, efficient metabolic functioning, protein digestion, as well as maintaining healthy nervous system, skin, hair and nails. The B-compound vitamins are probably the single most important set of factors needed for proper maintenance of the nervous system as well as proper functioning of the cell and its energy metabolism.

Sucralose (splenda)

- *Chemical formula:* $C_{12}H_{19}O_8Cl_3$
- *What it is:* Derivative of sucrose
- *What it does:* Artificial sweetener to provide taste.

Sucrose

- *Chemical formula:* $C_{12}H_{22}O_{11}$
- *What it is:* Simple sugar
- *What it does:* Can be converted into a form for entry into the primary metabolic pathway in which the chemical energy of its bonds is converted into ATP, the primary “energy” molecule in the body.

1-Taurine

- *Chemical formula:* $C_2H_7NO_3S$
- *What it is:* A non-essential amino acid
- *What it does:* Improved reaction time, concentration, and memory (not proven); essential amino acid for cats.

Water

- *Chemical formula:* H_2O
- *What it is:* A solvent for the other ingredients
- *What it does:* Essential for physiological processes.