

GLYCERIN is an Outstanding Compound with over 1500 uses and many areas of application.

Glycerol is a trihydroxy sugar alcohol that is an intermediate in carbohydrate and lipid metabolism. It is used as a solvent, emollient, pharmaceutical agent, or sweetening agent.

Glycerin is a Non-Standardized Chemical Allergen. The physiologic effect of glycerin is by means of Increased Histamine Release, and Cell-mediated Immunity, and Increased IgG Production. The chemical classification of glycerin is Allergens, and Glycerol.

Glycerin is a trihydroxy alcohol with localized **osmotic diuretic** and **laxative effects**. **Glycerin elevates the blood plasma osmolality thereby extracting water from tissues into interstitial fluid and plasma. Glycerin also prevents water reabsorption in the proximal tubule in the kidney leading to an increase in water and sodium excretion and a reduction in blood volume.** Administered **rectally, glycerin suppositories exert a hyperosmotic laxative effect by attracting water into the rectum, thereby relieving constipation.** In addition, glycerin is used as a solvent, humectant and vehicle in various pharmaceutical preparations.

The key to glycerin technical versatility is a unique combination of physical and chemical properties, readily compatible with many other substances, and easy handling. Glycerin **is also virtually nontoxic to human health** and to the environment. Not only is glycerin an excellent solvent but also helps in keeping intact the parent compound prone from oxidation attributed to its high concentration of all 4 tocotrienols well-known antioxidant and stabilizing properties.

Glycerin plays an important role in nature. It is one of nature's wonders and is closely linked to the life processes themselves, being a component of all living cells. Glycerin is found abundantly in nature in the form of triglycerides, the chemical combinations of glycerin and fatty acids, which are the principal constituents of almost all vegetable and animal fats and oils.

The ability of glycerin to persist or "stay put" in products is particularly important when large areas are exposed for long periods of time and storage. Such conditions often result in significant losses of **relatively volatile humectants** and occur most generally with films and fibers. Many substances such as iodine, bromine, tannin, alkaloids, thymol, phenol, mercuric chloride, and boric acids **are more soluble in glycerin** than in water, and thus glycerin is used to prepare highly concentrated solutions of these materials. With vanillin and some similar materials, glycerin forms supersaturated solutions, thus making possible solutions of high concentrations. The **miscibility of aliphatic and aromatic hydrocarbons with glycerin is increased by introducing hydroxyl and amine groups into their structure**, but is decreased by the introduction of alkyl groups. **Heterocyclic compounds such as alkaloids**; pyridine, quinoline, piperidine, and alpha-picoline, which contain a nitrogen atom in the ring, are generally miscible (forming a homogeneous mixture) with glycerin. In general, the ability to **act together harmoniously with other materials can be expected in a chemical like glycerin** with its related properties of **high solvent power, solubility, miscibility, and stability** (SDA, 1990).

Glycerin is one of the most widely used ingredients in the pharmaceuticals industry. It functions as a solvent, moisturizer, humectant, and bodying agent in medicinal tinctures,

elixirs, ointments, and capsules for drugs, which are plasticized with glycerin coating, are another important application. Other well-known uses include anesthetics, cough syrups, ear infection remedies, gargles, lozenges, suppositories, and vehicles for antiseptics and antibiotics. Medically, glycerin serves as an **emollient** and **demulcent** in preparations used on the skin and as an osmotic diuretic for the management of cerebral edema, reduce cerebrospinal pressure, and lower intraocular pressure for glaucoma. A derivative, nitroglycerine, it is a coronary vasodilator used for the treatment of angina. In veterinary medicine, glycerin has been used as a source of glucose in bovine ketosis and nitroglycerine as a treatment for bronchial asthma in dogs (SDA, 1990).

Reference:

SDA (The Soap and Detergent Association), 1990. https://www.aciscience.org/docs/Glycerine_-_an_overview.pdf.