

GLUCONO DELTA LACTONE

Fruits and Vegetables

GDL is beneficial in improving color stability and firmness in canned and frozen vegetables. A process patented by American National Can Co. demonstrates that when used at a level of approximately 1 % GDL allows safe thermal processing of fruit and vegetables at lower temperatures or for shorter times. Since less severe heat treatment is used the texture is similar to fresh produce. This process even allows thermo processing of some fruit and vegetables whose texture previously was too delicate to withstand heat treatment.

Controlling pH can help to minimize deteriorative enzyme action in sliced fruit and vegetables. The browning which occurs commonly in potatoes, peaches, apples, etc. is caused by enzymes. This browning can frequently be inhibited by the use of an antioxidant e.g. sodium erythorbate, in combination with GDL. GDL functions to lower the pH and to chelate metals which catalyze the browning action. For this reason GDL is also useful in maintaining the freshness of salads on food service lines.



A water solution containing 1 % sodium erythorbate and 2 % GDL along with either salt or sugar can be an effective dip or spray to retard browning of fresh cut fruit and vegetables.

Public health concern has caused the FDA to restrict the use of sulfites on fruits and vegetables. Special dip solutions have been formulated using GDL. Brightness in potato pieces was maintained using a combination 0.05% sodium bisulfite and a hydrolysis mixture of 1.5% GDL. The finished product was shown to have less than 10 ppm SO₂ residue.