

## Dextrose Monohydrate - Applications

### • Food Grade

Summary Dextrose is purified and crystallised D-glucose. It contains one molecule of water of crystallisation. It exists in white, odourless, crystalline granules having a bland and sweet taste.

### Food Application :

#### • Bakery Products

Dextrose has several functional purposes in yeast raised goods. such as bread and buns. The primary purpose is to supply fermentable carbohydrate on which the yeast may grow and provide CO<sub>2</sub> for 'raising' the product. Its presence also assists in browning of the crust to give a final product that is pleasing in appearance and aroma.

#### • Biscuits

Dextrose can partially replace sucrose in fondants and cream fillings where fine crystals are required for smooth texture.

#### • Alcoholic Beverages

Dextrose has high fermentability and can be added to low calorie beer for complete fermentation to alcohol. No carbohydrate residue remains to increase the calories of the beverages.

#### • Canned Products

Dextrose is used in canned vegetables and fruits in some instances for controlling sweetness and preserving properties.

#### • Confectionary

Dextrose is used extensively for sweetening and coating chewing gum and bubble gum. Dextrose improves the colour and gloss of the gum coatings and its high heat of solution gives a cool mouthfeel in all gum and candy coating applications.

Dextrose contributes to the tenderness, whippability, and sweetness in marshmallow and nougat applications.

#### • Meat Industry

The presence of sugar (particularly reducing sugar) in the curing mixture has a direct bearing on the quality of the colour obtained at the end of cure.

#### • Frozen Desserts

Dextrose can help control ice crystals and body of frozen dairy products.

#### • Other Applications

jam, jellies, Preserves, Peanut Butter, Seasoning, Pickle, Vinegar Fermentation, etc.

### Industrial Applications :

#### • Adhesives

Dextrose provides flow control and helps prevent wrapping of the pieces upon drying.

#### • Resin Formulation

Dextrose can serve as plasticiser in various resin formulations.

#### • Gluconic Acid

Dextrose can serve as feedstock for chemical or microbiological oxidation to gluconic acid.

#### • Building Materials

Dextrose can be used in wallboard as a humectant to control water release and to prevent brittle edges during drying, as setting retardants in concrete.

#### • Other Applications

The reducing Properties of dextrose are used i.e. metal treatment, recovery, dye applications, leather manufacture in chrome tanning, etc.

Dextrose is used as carbohydrate sources in many fermentations to produce a variety of industrial. food and pharmaceutical products.

### • Pharma Grade

Dextrose monohydrate is purified and crystallised D-glucose, and has relative molecular mass 198.17. Dextrose monohydrate pharma or pyrogen free grade has high standard used for infusion or

parenteral preparations. The sterility, pyrogen free, and filtrability are concerning points for Dextrose Monohydrate Pharma Grade (DMH-PG).

## **DEXTROSE MONOHYDRATE APPLICATION**

[ENERGY INDUSTRY NEWS](#)

**DMH is that form of carbohydrate which is of maximum use by a PHARMACIST.** He uses it's an ingredient of Oral Rehydrate Solutions (ORS) of people suffering from diarrhea, dehydration and heat stroke.

### **Food:**

The various nutritive physical and chemical properties of Dextrose make it a valuable ingredient in many food application.

### **Baking:**

Dextrose is readily fermentable sugar and an excellent nutrient for yeast in bread dough. It's reaction when heated with protein provides color and flavour to bread and cookie crusts, Strength in bread for slicing and handling.

### **Beverage:**

Dextrose is readily fermentable sugar and hence used in wine and beer to supply sweetness, body and osmotic pressure. It is adjacent to reduce residual carbohydrate level and caloric content in light beer production.

### **Canning:**

Dextrose alone or with sucrose controls Osmotic pressure and enhances flavour, sweetness, and texture in Jams, Jellies, fruits and juices. In addition it helps to create the glossy appearance of Jams and Jellies.

### **Confectionery:**

Dextrose supplies sweetness, softness and crystallization control in candies. It is also used in Candy and gum for coating, strength , hardness & color.

### **Pharmaceutical:**

Dextrose Mono-hydrate is formulated with vitamins and Minerals and sold in packets or containers or used during convalescent periods of physical stress by patients, athletes and students. In medical formulations Dextrose is used in tableting ( salt tablets ) and as a raw material in the fermentation industry for bio-chemical synthesis of antibiotics ( penicillin, streptomycin etc.) and vitamin C. via Sorbitol.

### **Fermentation industry:**

Dextrose serves as a raw material in the manufacture of citric acid, amino acids, enzymes, lactic acid and ethanol.

### **Chemical processes:**

Sorbitol and mannitol methylglucoside, gluconic acid, gluconates also are produced from various chemical reactions with Dextrose Monohydrate.

Thus Dextrose is a widely used product and it's uses have increased over 100 fold. Best quality of Dextrose is produced by improved process equipment, refining techniques at rigid control of processing conditions.

