



## Validase® GA

### Fungal Glucoamylase for Starch Hydrolysis

#### Product Features

**Validase® GA** is a food grade glucoamylase liquid derived from a selected strain of *Aspergillus niger*. **Validase® GA** complies with the FCC recommended specifications for food grade enzymes. The enzyme is an exoglucosidase which catalyzes the hydrolysis of both the  $\alpha$ -D-1,6-Glucosidic branchpoints and the predominating  $\alpha$ -D-1,4-glucosidic linkages of starch. **Validase® GA** removes glucose units successively from the non-reducing ends of starch chains and dextrans.

#### Benefits

- ▶ Rapid saccharification of gelatinized starch and dextrans.
- ▶ Effective in production of high glucose syrups in quantitative yields >95% glucose.
- ▶ Can be used with other dextrinizing and saccharifying enzymes to produce specialty syrups.

#### Characteristics

ACTIVITY: 300-330 AG/ml  
FORM: Nonviscous amber liquid  
SOLUBILITY: Completely miscible with water  
DENSITY: 1.10 to 1.25  
KOSHER: O. U.

#### Activity Assay

One Amyloglucosidase Unit (AG) is that activity which will liberate one gram of reducing sugar as glucose in one hour under the conditions of the assay. A copy of the AG Assay VRi 400.007 is available upon request.

#### Applications

##### Use Levels

Enzyme requirements are generally dictated by processing conditions. In general, rates of hydrolysis increase with enzyme concentration. Under standard

conditions 100 AG Units per pound of dry starch (0.75l/1000 Kg DS) will adequately saccharify a gelatinized starch solution.

#### Effect of Temperature

**Validase® GA** has an optimum temperature range of 58 to 65°C under the conditions of the spectrophotometric glucoamylase assay. Excellent stability is exhibited from 40 to 65°C. When reaction times are in excess of 24 hours, the recommended reaction temperature is 60°C. At 60°C, **Validase® GA** is quite stable, and the hazard of microbial contamination is reduced. Temperatures above 80°C rapidly inactivate **Validase® GA**.

#### Effect of pH

**Validase® GA** has an optimum pH range of 4.0 to 4.4, under the conditions of the spectrophotometric glucoamylase assay. The enzyme can effectively hydrolyze starch and dextrans over the pH range of 3.0 to 5.0. In the presence of 30.0% w/w basis dextrose, the enzyme demonstrates maximum stability over the pH range of 3.5 to 5.5. **Validase® GA** is stable in aqueous solution over the pH range of 4.0 to 5.0.

#### Packaging

**Validase® GA** is available in 17 liter pails and 210 liter drums. Alternate package sizes are available upon request for larger and smaller volumes.

#### Storage

In sealed containers, under cool, dry conditions, the loss of activity is normally less than 10% over six months. Storage life can be extended by storing under refrigeration at 5°C.

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