



## Product Information

### Glucose-6-phosphate Dehydrogenase from baker's yeast (*S. cerevisiae*)

Product Number **G 7877**  
Storage Temperature 2-8 °C

#### Product Description

Enzyme Commission (EC) Number: 1.1.1.49  
CAS Number: 9001-40-5  
MW: 128 kDa (gel filtration)<sup>1</sup>

For the enzyme from yeast, the  $K_m$  values for glucose 6-phosphate and NADP are  $2.0 \times 10^{-5}$  M and  $2.0 \times 10^{-6}$  M, respectively, in Tris buffer, pH 8.0, containing 0.01 M magnesium chloride at 38 °C.<sup>2,3</sup>

The general method for purification of this enzyme was developed by Sigma and the details are proprietary. However, we do have the following general information: Yeast are autolysed with toluene, the enzyme is extracted using an affinity resin, the enzyme is then washed, and crystallized from ammonium sulfate. The material is washed with ammonium sulfate to lower the  $A_{260}$  value (from NADP).

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

We would not recommend using a phosphate buffer. The enzyme from *Candida utilis* is inhibited by phosphate.<sup>4</sup> In addition, magnesium is required for enzymatic activity. The enzymatic assay for this product is performed using 50 mM glycylglycine buffer, pH 7.4, containing 10 mM magnesium chloride.

#### Storage/Stability

Solution stability studies have not been performed on dilutions of this product from the ammonium sulfate suspension. However, based on information concerning stability of the product during preparation, the following is a recommended method of dilution: an aliquot of the product can be diluted into 5 mM sodium citrate buffer, pH 7.4. Solutions should be used within one day, but several days storage at 0-5 °C may be fine. The effects of freezing the citrate solution have not been determined. It is best to store the enzyme in suspension, as supplied, where it is the most stable and to remove aliquots for use as needed.

A retained sample of this product was shown to have over 90% activity after 6 years.

#### References

1. Biochem. J., **96**, 595 (1965).
2. Enzyme Handbook, **I**, Barman, T. E., Springer-Verlag (Berlin-Heidelberg: 1969), p. 73.
3. Lowry, O.H., et al., J. Biol. Chem., **236**, 2746 (1961).
4. Domagk, G. F., and Chilla, R., Glucose-6-phosphate Dehydrogenase from *Candida utilis*, Methods in Enzymology, **41-B**, 205-208 (1975).

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