

**ENZYMES**

# Glycerol Phosphate Oxidase

**ORIGIN** *Streptococcus sp.*

**CAT# 70-4875-01**  
**EC# 1.1.3.21**

**▸ SPECIFICATIONS**

**Appearance** Yellow powder  
**Activity** ≥40 U/mg powder at 37°C  
**Contaminants** **Acetate Kinase** <0.1%  
**Lactate Oxidase** <0.001%

**▸ ASSAY PRINCIPLE**

Glycerol Phosphate Oxidase (GPO) catalyses the following reaction:



The formation of dihydroxyacetone phosphate is determined using a coupled peroxidase assay system, which causes the formation of a quinoneimine dye, that may be measured spectrophotometrically at 500nm.

**▸ UNIT DEFINITION**

One unit of activity is defined as the amount of enzyme that will catalyze the oxidation of 1.0 micromole of Glycerol-3-Phosphate per minute at 37°C under the standard assay method conditions (available on request).

**▸ APPLICATION**

Used in the formulation of triglyceride reagents.

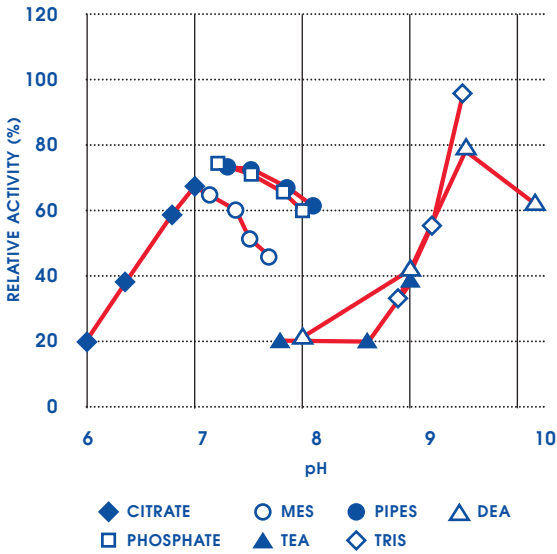
## CHARACTERISTICS

<b>Molecular Weight:</b>	67kDa (SDS-PAGE)
<b>Isoelectric Point:</b>	4.03
<b>K<sub>m</sub> value:</b>	2.23 x 10 <sup>-3</sup>
<b>Optimum pH (Fig. 1):</b>	pH 6.5 and pH 8.5 - 9.0
<b>Optimum Temperature:</b>	37°C
<b>pH Stability (Fig. 2):</b>	5.0 to 7.0 (37°C for 30 minutes)
<b>Thermal Stability (Fig. 3):</b>	Stable at 55°C and below (pH 6.5 for 5 minutes)

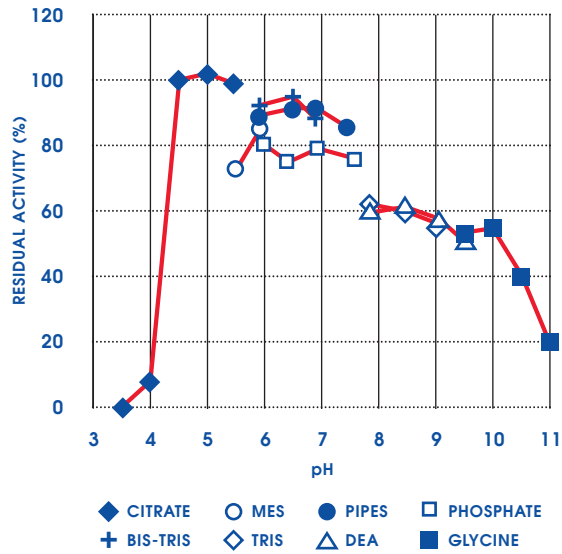
**TABLE 1: EFFECT OF VARIOUS CHEMICALS ON GLYCEROL PHOSPHATE OXIDASE**

CHEMICAL	CONCENTRATION (mM)	RELATIVE ACTIVITY (%)	CHEMICAL	CONCENTRATION (mM)	RELATIVE ACTIVITY (%)
None	—	100	LiCl	2.0	103
MgCl <sub>2</sub>	2.0	101	KCl	2.0	102
MgSO <sub>4</sub>	2.0	102	CaCl <sub>2</sub>	2.0	103
ZnCl <sub>2</sub>	2.0	102	Emulgen 810	0.1%	98
ZnSO <sub>4</sub>	2.0	102	Emulgen 911	0.1%	98
NaCl	2.0	103	Rheodol TWL-106	0.1%	99
NH <sub>4</sub> Cl	2.0	103	Rheodol 460	0.1%	99
BaCl <sub>2</sub>	2.0	103	Adekanol NP-720	0.1%	99
Ba(CH <sub>3</sub> COO) <sub>2</sub>	2.0	101	Triton X-100	0.1%	99
NiCl <sub>2</sub>	2.0	103	Triton X-305	0.1%	98
CoCl <sub>2</sub>	2.0	103	Tween 80	0.1%	100
MnCl <sub>2</sub>	2.0	114			

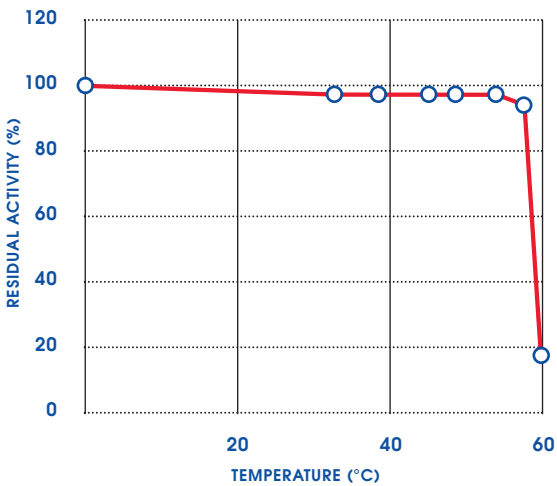
**FIGURE 1: OPTIMUM pH**



**FIGURE 2: pH STABILITY (37°C, 30 MIN.)**



**FIGURE 3: THERMAL STABILITY (pH 6.5 FOR 5 MINS.)**



**THE AMERICAS**  
 Sekisui Diagnostics, LLC  
 4 Hartwell Place  
 Lexington, MA 02421  
 Phone: 800 332 1042  
 Fax: 800 762 6311

**INTERNATIONAL**  
 Sekisui Diagnostics (UK) Limited  
 Liphook Way, Allington  
 Maidstone, Kent, ME16 0LQ, UK  
 Phone: +44 1622 607800  
 Fax: +44 1622 607801

**SEKISUI**  
**DIAGNOSTICS**  
*Because every result matters™*

[engage@sekisuienzymes.com](mailto:engage@sekisuienzymes.com)  
[www.sekisuienzymes.com](http://www.sekisuienzymes.com)