

ProductInformation

GUANOSINE 5'-TRIPHOSPHATE SODIUM SALT HYDRATE

Sigma Prod. No. G8877

Storage Temperature -20°C

CAS NUMBER: 36051-31-7

SYNONYMS: GTP

PHYSICAL PROPERTIES:

Appearance: White, lyophilized powder

Formula: $\text{C}_{10}\text{H}_{13}\text{N}_5\text{O}_{14}\text{P}_3\text{Na}_3$

Formula weight: 523.2 (free acid)

$E^{\text{mM}}(253\text{nm}) = 13.7$ (0.1 M Phosphate buffer at pH 7.0)

pK_a values: 3.3, 6.3, 9.3¹

METHOD OF PREPARATION:

Guanosine 5'-triphosphate is prepared by enzymatic phosphorylation of guanosine 5'-monophosphate and purified by ion exchange chromatography.

DESCRIPTION:

GTP functions as a carrier of phosphates and pyrophosphates involved in channeling chemical energy into specific biosynthetic pathways. It also serves as an energy-rich precursor of mononucleotide units in the enzymatic biosynthesis of DNA and RNA.²

STABILITY / STORAGE AS SUPPLIED:

This product is routinely shipped on dry ice. Storage at -20°C is recommended.

Guanosine 5'-Triphosphate is a very unstable compound. It decomposes at least 2% within 6 months when stored at -0°C and at least 4% within one year stored at -0°C . 2% decomposition occurred within four days when stored at 37°C .

These data were obtained from samples stored at -0°C . We highly recommend storing this product at $\leq 20^{\circ}\text{C}$ to achieve greater shelf-life.

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SOLUBILITY / SOLUTION STABILITY:

Sigma routinely tests the solubility at 100 mg/mL in water yielding a clear, colorless solution. It is best to prepare GTP solutions immediately before use. If a stock solution is required, we recommended preparing a 10 mg/mL solution in water and storing aliquots at -20°C. The stock solution should be kept 3-6 months at most.

REFERENCES:

1. *Data for Biochemical Research*, 3rd ed., 88-89 (1987).
2. Lehninger, A.L., *Biochemistry*, 2nd ed., 316 (1977).

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