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## Product Information

### Xanthine

Product Number **X 0626**  
Store at Room Temperature

#### Product Description

Molecular Formula:  $C_5H_4N_4O_2$

Molecular Weight: 152.1

CAS Number: 69-89-6

$pK_a$ : 7.7, 11.9<sup>1</sup>

$\lambda_{max} = 277 \text{ nm (pH = 10)}$ <sup>1</sup>

Extinction Coefficient:  $E^{mM} = 9.3 \text{ (pH = 10)}$ <sup>1</sup>

Xanthine is a catabolic product of purine nucleotide metabolism. It is degraded by xanthine oxidase to uric acid. Natural sources of xanthine or its derivatives include animal organs, yeast, potatoes, coffee beans, and tea.<sup>2</sup> Xanthine and xanthine oxidase are used to generate superoxide radicals used to measure the activity of superoxide dismutase.<sup>3</sup>

#### Precautions and Disclaimer

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

#### Preparation Instructions

Xanthine is soluble in sodium hydroxide solutions and in acidic solutions. It is soluble in 1 M NaOH (50 mg/ml), with sonication for less than 5 minutes, yielding a clear solution. It is slightly soluble in water (1 g/14.5 L, 16 °C) and in ethanol.<sup>2</sup>

#### Storage/Stability

The decomposition of solutions in 0.5 M  $H_2SO_4$  or in 10 M NaOH is less than 10% after one hour at 100 °C.<sup>4</sup>

Stock solutions of at least 10 mM in sodium hydroxide can be stored at 2-8 °C for one week.<sup>5</sup>

#### References

1. Specifications and Criteria for Biochemical Compounds, National Academy of Science, Third Edition, Including the Biogenic Amine Supplement, Washington, D.C., p.182 (1984).
2. The Merck Index, 13th Ed. Entry# 10116
3. McCord, J.M., and Fridovich, I., Superoxide dismutase. An enzymic function for erythrocyte (hemocuprein). *J. Biol. Chem.*, **244**, 6049-6055 (1969).
4. Data for Biochemical Research, 3rd ed., Dawson, R. M. C., et al., Oxford University Press (New York, NY: 1986), p. 94-95.
5. Heinz, F., and Reckel, S., Xanthine Oxidase. *Methods of Enzymatic Analysis*, Bergmeyer, H.U., ed., 3rd ed., **3**, p 210-216, Academic Press, NY (1983).

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