

Catalog Number: 101423, 101424, 153916

## Creatinine

### Structure (free base):



	Free Base	Hydrochloride	Zinc Chloride
<b>Molecular Formula:</b>	C <sub>4</sub> H <sub>7</sub> N <sub>3</sub> O	C <sub>4</sub> H <sub>7</sub> N <sub>3</sub> O·HCl	(C <sub>4</sub> H <sub>7</sub> N <sub>3</sub> O) <sub>2</sub> ·ZnCl <sub>2</sub>
<b>Molecular Weight:</b>	113.1	149.59	362.5
<b>CAS #</b>	60-27-5	19230-81-0	362.5

**Synonyms:** 2-Amino-1,5-dihydro-1-methyl-4H-imidazol-4-one; 2-Amino-1-methyl-4-imidazolidinone; 1-Methylhydantoin-2-imide; 1-Methylglyocyamidine; 2-Imino-N-methylhydantoin; 2-Imino-1-methylimidazolidin-4-one

**Physical Description:** White powder

### Solubility:

*Free Base:* Soluble in 12 parts water; slightly soluble in ethanol; practically insoluble in acetone, ether, chloroform.<sup>1</sup>

*Hydrochloride:* Soluble in water (50 mg/ml - clear, colorless to faint yellow solution)

*Zinc Chloride:* Soluble in 1 N Hydrochloric acid (50 mg/ml - clear, colorless solution)

**Description:** The end product of creatine catabolism.<sup>1</sup> Normal constituent of urine; daily output about 25 mg/kg body weight.<sup>1</sup> Increased amounts in the urine are typically associated with substantially impaired renal function. Also found together with creatine in muscle tissues and blood.<sup>1</sup> Reacts with picric acid under alkaline conditions to form a Janovski complex. The rate of formation of the colored complex, measured at 480-520 nm is proportional to the creatinine concentration.

### Availability:

Catalog Number	Description	Size
101423	Creatinine, free base	10 g 25 g 100 g
153916	Creatinine Hydrochloride	10 g 25 g 100 g
101424	Creatinine Zinc Chloride	1 g 5 g

### References:

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3. Hirate, et al., "The effect of sacrificing method on the tissue concentration of exogeneous creatinine in rats." *Chem. Pharm. Bull.*, **v. 33(11)**, 5105-5107 (1985).
4. Kim, et al., "Sarcosine oxidase involved in creatinine degradation in *Alcaligenes denitrificans* subsp. *denitrificans* J9 and *Arthrobacter* spp. J5 and J11." *Agric. Biol. Chem.*, **v. 50(11)**, 2811-2816 (1986).
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6. Valcour, A.A. and Woodworth, R.C., *J. Magn. Reson.*, **v. 66**, 536 (1986).
7. Welch, M.J., et al., "Determination of serum creatinine by isotope dilution mass spectrometry as a candidate definitive method." *Anal. Chem.*, **v. 58(8)**, 1681-1685 (1986).
8. Winquist, et al., "Determination of creatinine by an ammonia-sensitive semiconductor structure and immobilized enzymes." *Anal. Chem.*, **v. 58(1)**, 145-148 (1986).
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