

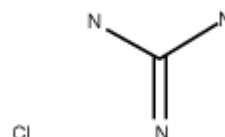
50933 Guanidine hydrochloride

(Aminoforamidine hydrochloride, Guanidium chloride, Guanidinium chloride)

CAS number: 50-01-1

Product Description:

Molecular formula: $\text{NH}_2\text{C}(\text{:NH})\text{NH}_2\cdot\text{HCl}$
Formula weight: 95.53 g/mol
Mp: 178 - 185°C¹
Solubility: 6 M in H₂O, 20°C, complete, colorless
pH: 4.5-6.0 (6 M in H₂O, 25°C)
pK_a(20°C): 13.6²



Store at room temperature

Guanidine HCl may agglomerate upon storage. It may appear as a free-flowing crystalline powder, a free flowing powder with solid material dispersed throughout, or a solid. The quality of the product does not appear to be affected and solutions prepared from the free-flowing and lumpy guanidine HCl appear identical.

50933 BioUltra for molecular biology

The products designated as "BioUltra" grade are suitable for different applications like purification, precipitation, crystallisation and other applications which require tight control of elemental content. Trace elemental analyses have been performed for all qualities. The molecular biology quality is also tested for absence of nucleases. The Certificate of Analysis provides lot-specific results.

Applications:

Guanidine HCl Strong chaotropic agent useful for the denaturation and, subsequent refolding of proteins. This strong denaturant can solubilize insoluble or denatured proteins such as inclusion bodies.^{3,4} This can be used as the first step in refolding proteins⁵ or enzymes into their active form. Urea and dithiothreitol (DTT) may also be necessary.

Guanidine HCl is used in the isolation of RNA to dissociate the nucleoprotein into its nucleic acid and protein moieties.⁶ It is an inhibitor of RNase. Highly concentrated (6 - 8 M) Guanidine HCl solutions are used to denature native globular proteins. It apparently disrupts hydrogen bonds which hold the protein in its unique structure. However, there also is evidence suggesting that guanidine hydrochloride may disrupt hydrophobic interactions by promoting the solubility of hydrophobic residues in aqueous solutions.⁷ A method for measuring guanidine in the sera of uremic subjects has been reported.⁸ It used in the buffer for the extraction and fractionation by cesium sulfate density gradient centrifugation of bovine nasal cartilage proteoglycan.⁹ Induces subunit dissociation and unfolding of bovine liver glutamate dehydrogenase.¹⁰ Dissociation of apolipoproteins of insect lipophorin.¹¹

Preparation Instructions

In order to make an 8 M solution in water, one must heat the solution to 35 °C for approximately 30 minutes. The maximum solubility of guanidine hydrochloride in water at room temperature is approximately 6 M.



References

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Precautions and Disclaimer:

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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