

Guanidine Carbonate



PRODUCT IN FOCUS



Guanidine Carbonate

INTRODUCTION

Guanidine carbonate is a white, crystalline, water-soluble compound with an alkaline and ionic nature. Composed of guanidinium cations and carbonate anions, it offers chemical stability, buffering capacity, and good formulation compatibility. In textile applications, it is used in formulations and fabric treatments for its thickening, softening, lubricating, anti-static, and flame-retardant properties, contributing to improved fabric finish and performance.

Manufacture

Guanidine carbonate does not occur naturally but is synthesized industrially for diverse applications. Guanidine hydrochloride is treated with sodium hydroxide in an aqueous medium, followed by controlled carbonation with CO₂ to produce guanidine carbonate. The resulting product is purified through concentration and cooling crystallization, then filtered, washed, and vacuum-dried to obtain the final product.

Applications

Guanidine Carbonate, a strong chemical base, is widely utilized as an organic intermediate across a broad range of industrial applications;

Cosmetics

- Used as a precursor to create mild hair-straightening and relaxing formulas (forming guanidine hydroxide when mixed with Calcium Hydroxide).

Textile Industry

- Serves as a raw material or additive in detergents, surfactants, flame retardants for textiles. In flame retardant treatments, guanidine carbonate is often used in combination with co-agents to enhance the flame-retardant effect or improve the physical properties of the fabric.

Materials & Organic Synthesis

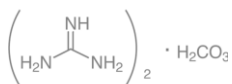
- Acts as an accelerator base in carbon-fiber production, a building block for graphitic carbon nitride, and an intermediate for fine chemicals and pharmaceuticals.

Analytical Chemistry

- Acts as a precipitating agent to measure the weight of metals like zinc, cadmium, and manganese, or to separate magnesium from alkali metals.

Other Industrial Applications

- Microencapsulation process for carbonless paper.
- Used as a chemical additive in cement and construction-material formulations.

Synonyms	Bisguanidinium carbonate, Diguanidinium carbonate
CAS no.	593-85-1
EINECS no.	209-813-7
Molecular Formula	C ₂ H ₁₀ N ₆ ·H ₂ CO ₃
Molecular Weight	180.17
Structure	

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SPECIFICATIONS

Test	Unit	Specification
Appearance	-	White crystalline powder
Appearance of 20% solution in Water	-	Should be colorless and transparent
Moisture	%	NMT 0.20
pH of 4% Solution	-	11.0 - 11.8
Ash	%	NMT 0.40

Heavy Metals (EN 71-3:2019+A2:2024) (Method Detection Limit)

Aluminum (Al)	mg/kg	Max 50
Antimony (Sb)	mg/kg	Max 2
Arsenic (As)	mg/kg	Max 0.1
Barium (Ba)	mg/kg	Max 50
Boron (B)	mg/kg	Max 50
Cadmium (Cd)	mg/kg	Max 0.2
Trivalent Chromium (Cr (III)) *	mg/kg	Max 1.0
Hexavalent Chromium (Cr(VI))	mg/kg	Max 0.002
Cobalt (Co)	mg/kg	Max 0.2
Copper (Cu)	mg/kg	Max 50
Lead (Pb)	mg/kg	Max 0.2

* Cr(III) is calculated value : (Total Cr - Cr(VI))

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Test	Unit	Specification
Manganese (Mn)	mg/kg	Max 50
Mercury (Hg)	mg/kg	Max 0.6
Nickel (Ni)	mg/kg	Max 5
Selenium (Se)	mg/kg	Max 5
Strontium (Sr)	mg/kg	Max 50
Tin (Sn)	mg/kg	Max 0.05
Zinc (Zn)	mg/kg	Max 50
Purity	%	Min 99.0

PACKING

25 Kg HDPE drums/ bags

STORAGE

Store in a cool and dry place

REACH status

Not registered

ExSyn offers Guanidine Carbonate on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.