



Arm & Hammer™ Sodium Bicarbonate USP MC Grade

Reviewed: June 18, 2025	Test Method	USP
Description	-	Sodium Bicarbonate contains not less than 99.0 percent and not more than 100.5 percent of NaHCO ₃ calculated on the dried basis.
Assay – dry basis	USP JP, BP, EP, Ph. Eur.	Not less than 99.0% and not more than 100.5% of NaHCO ₃ See Remark.
Identification	USP <191>	Meets the requirements of the tests for sodium and bicarbonate.
Insoluble Substances	USP	Dissolve 1 g in 20 ml of water; the resulting solution is complete and clear.
Normal Carbonate	USP	Meets test.
Chloride	USP <221>	Not more than 0.015%
Limit of Sulfur Compounds	USP	Not more than 0.015%
Elemental Impurities*	ICP	
Cadmium		Not more than 0.3 µg/g
Lead		Not more than 0.3 µg/g
Arsenic		Not more than 0.9 µg/g
Mercury		Not more than 1 µg/g
Limit of Ammonia	NA – See remarks	Not more than 20 ppm
Loss on Drying	USP <731>	Not more than 0.25%
Iron	ICP	Not more than 5 ppm
Limit of Organics		Not more than 0.01%
Carbonate		Not more than 0.23%
Aluminum	ICP	Not more than 2 µg/g
Copper	ICP	Not more than 1 ppm
Calcium	ICP	Not more than 0.01%
Magnesium	ICP	Not more than 0.004%
pH, 5%	JP	7.9 -8.4
<p>Ammonia is not used in the manufacturing process for Church & Dwight Sodium Bicarbonate. Controlled handling and storage of the product ensure that ammonia will not exceed the USP limit. Limit of ammonia is based on risk analysis and in-process controls. *Elemental Impurities (replaces Heavy Metals <231>) Limits based on USP <232> Table 3, Oral Drug Products. Residual Solvents testing under USP <467> is not required as no solvents, and specifically no solvents of Class 1, 2, or 3 as defined in <467>, are used in the manufacture or purification of Church & Dwight Sodium Bicarbonate.</p> <p>Meets specification of the current USP/FCC, JP, BP and Ph. Eur..</p>		

Granulation

Sieve Size (USS)	Microns	Ro-Tap Cumulative % Retained	
		Minimum	Maximum
100	149	0	2
200	74	20	45
325	44	60	100



Specification

General Properties (Not Specifications)

Empirical Formula	NaHCO ₃
CAS Number	144-55-8
Other Names	Bicarbonate of Soda Sodium Hydrogen Carbonate Baking Soda
Chemical Abstract Name	Carbonic acid monosodium salt
E Number	E-500(ii)
Appearance	White crystalline powder
Taste	Slightly alkaline
Molecular Weight	84.01
Thermal Decomposition	Decomposes without melting into Na ₂ CO ₃ , H ₂ O and CO ₂ .
Crystal Density	137.3 lb /ft ³ , 2.2 g / cc
Bulk Density	63 lb/ft ³ , 1.009 g/cc
BTU / lb at 72°F	0.249
Solubility in water at 77°F	Approximately 9.5%
Solubility in Alcohol	Insoluble
Alkali Equivalent	1 lb NaHCO ₃ = 0.369 lb Na ₂ O
Acid Equivalent	1 lb NaHCO ₃ = 0.435 lb HCl
Carbon Dioxide Equivalent	1 lb NaHCO ₃ = 0.524 lb CO ₂
pH 1% aqueous soln at 77°F	Approximately 8.3.