



Arm & Hammer™ Sodium Bicarbonate USP No. 1 Powdered

| Reviewed: Feb. 1, 2020 | Test Method | USP | FCC |
|---------------------------|------------------|---|--|
| 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. | A white crystalline powder. It is stable in dry air, but slowly decomposes in moist air. Its solutions, when freshly prepared with cold water, without shaking, are alkaline to litmus. The alkalinity increases as the solutions stand, are agitated or are heated. |
| Assay – dry basis | USP | Not less than 99.0% and not more than 100.5% of NaHCO ₃ | Not less than 99% NaHCO ₃ after drying |
| Identification | USP <191> | Meets the requirements of the tests for sodium and bicarbonate. | A 1 in 10 solution gives positive tests for sodium and for bicarbonate. |
| Insoluble Substances | USP | Dissolve 1 g in 20 ml of water; the resulting solution is complete and clear. | Passes test |
| 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 0.5 µg/g | - |
| Lead | | Not more than 0.5 µg/g | Not more than 2 mg/Kg |
| Arsenic | | Not more than 1.5 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% | Not more than 0.25% by weight |

Ammonia is not used in the manufacturing process for Church & Dwight Sodium bicarbonate. Controlled handling and storage of the product insure that ammonia will not exceed the USP limit. Absence of ammonia is confirmed on each lot via olfactory test.

*Elemental Impurities (replaces Heavy Metals <231>) Limits based on USP <232> Table 2, Oral Drug Products. The remaining Table 2 elements are not known or expected impurities.

Residual Solvents testing under USP <467> is not required as no solvents, and specifically no solvents of Class 1, 2, 3 or Table 4 as defined in <467>, are used in the manufacture or purification of Church & Dwight Sodium Bicarbonate.



Specification

Granulation (Powdered)

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

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. |