



TECHNICAL BULLETIN

AFG®: THE SMART CHOICE TO MEET SODIUM NEEDS

Sodium is an essential dietary mineral that plays a key role in electrolyte balance, and nerve and muscle function. In poultry diets, main ingredients like corn and soybean meal contribute very little sodium to the diet, and not at the levels required for optimum growth and performance, which makes sodium supplementation necessary.

While salt (sodium chloride) is the most common sodium source added to diets, it can result in excess chloride levels that can reduce bird performance and litter quality. Salt can also contain impurities, and its sodium content may vary with source.

THE INTRICACIES OF MEASURING SODIUM CONTENT

Accurately measuring the sodium content of a substance can be complicated. Most laboratory methods, such as inductively coupled plasma (ICP) and atomic absorption spectrometry, are calibrated to very accurately measure the low levels of sodium in finished feed, which are typically in the range of 0.15-0.30%. If the same methods are to be used to measure the sodium levels of ingredients, such as salt and AFG (approximately 39 and 20% sodium, respectively), then additional steps are required. The ingredient samples will need to be diluted to reach the similar sodium levels as the finished feed samples. Therefore, precision in the dilution process is critical if accurate results are to be obtained.

Most methods for analyzing sodium content, such as inductively coupled plasma (ICP) and atomic absorption spectrometry, are calibrated to very accurately measure the low levels of sodium in finished feeds. However, this presents a challenge for sodium ingredients that contain over 100X this amount. These ingredients will require additional dilution steps for these analysis methods, and precision is crucial to obtain accurate readings for the sodium ingredients. Therefore, analyses of finished feeds are more reliable when it comes to measuring the actual dietary sodium intake for birds.



SOURCES OF DIETARY SODIUM

While the sodium content of sodium supplements is important, it's also valuable to assess the other dietary benefits they contribute to the bird. Other sodium supplements have a neutral or alkaline pH, whereas AFG[®] is acidic. It is widely known that acidification of feed and water is beneficial to the GI tract of birds. In addition, AFG contributes sulfates to the diet to promote gut integrity and health.

NAME	FORMULA	% Na	% Cl	% Sulfate (SO ₄)	pH
Salt (sodium chloride)	NaCl	39.3*	59	0	neutral
Sodium carbonate	Na ₂ CO ₃	51.6	0	0	alkaline
Sodium bicarbonate	NaHCO ₃	27.4	0	0	alkaline
S-Carb [®] (sodium sesquicarbonate)	Na ₂ CO ₃ + NaHCO ₃	30.4	0	0	alkaline
AFG [®] (sodium bisulfate)	NaHSO ₄	19.7	0	80	acidic

*Sodium content of salt varies with purity and source (e.g., rock salt, mined halite, evaporated sea water)



RELIABILITY MAKES AFG AN IDEAL SODIUM SOURCE

Sodium bisulfate (AFG[®]) has been produced by Jones-Hamilton Co. for over 70 years. Because only the correct atom configuration can produce sodium bisulfate, any chemical impurities present in the salt precursor will be removed from the final product. As a result, AFG is highly pure and contains a reliable sodium content that is routinely validated by our in-house chemist.

As such, not only does AFG contribute sodium, acidification, and sulfates to the diet, its manufacturing process is highly refined, making it a reliable source of sodium for your flock.

AFG[®]: SUPPORT GUT INTEGRITY WITH SULFATE

AFG[®] – Animal Feed Grade is a feed additive for all classes of poultry that provides improved bird performance by increasing gut integrity. As a non-chloride sodium source with the highest sulfate content of any additive, AFG works to make the mucus layer of the GI tract more resilient and help improve function, enhance nutrient absorption, and prevent intestinal damage during times of stress.

PRODUCT DETAILS

- Contains 19.7% sodium* and 26% sulfur
- Inclusion rate between 0.3% and 0.4% in diet
- Available in 50 lb. bags, 2,000 lb. totes and bulk
- GRAS (Generally Recognized as Safe) status under FDA
- Mixes well in diets
- Produced in compliance with Food Safety and Modernization Act
- Recognized by AAFCO

*sodium range 19.5% – 19.9%



References:

- https://www.asi.k-state.edu/extension/swine/swinenutritionguide/general_nutrition_principles/feedanalysis.html
- <https://www.thoughtco.com/what-is-table-salt-604008>
- <https://www.sciencedirect.com/science/article/abs/pii/B978012819759200001X>



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