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## Microbiological Analysis of Sugar & Certificates of Analysis

Microbiological results are not reported on Certificates of Analysis for any customer. There are several reasons for this. First, it requires a minimum of five days after sampling to plate, culture, and count yeast and mold. It requires two days to evaluate samples for mesophilic bacteria. Product is not held pending the completion of the analysis. Instead, product is shipped based on historical results and continuing analysis. Product from each production lot is sampled as it is packaged and shipped. The resultant analysis is stored in a database.

Second, there are no pathogens present in sugar products, as demonstrated by empirical data and by literature references. Thus, there is no food safety risk to these sugar products.

Third, the product most customers receive may be shipped both directly from a factory and from an external warehouse. There is not enough room at the production point to store all of the products that are packaged, and therefore external warehouses are utilized. Stock product is warehoused, and the lot to be shipped is not pre-determined for a specific customer. Thus, microbiological data may not be included in original COAs.

Based on historical data, a statement may be included on each COA that the product is certified to meet the microbiological requirements of the applicable product specification.

There may be instances when the resultant analysis indicates that a single sample may have contained an elevated microbial titer above the specification maximum. If this occurs, the results from prior and subsequent samples are evaluated for a trend. If a significant trend is noted, customers receiving the product will be notified. There is no food safety issue since no pathogens are present.

NSM Quality Assurance Team quality@natsugar.com Reviewed/Revised: May 2, 2024

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