

Alert 22-01: Selecting Steel Drum Linings for Product Compatibility

The interiors of many steel drums are coated with a lining designed to safeguard the products they will ultimately contain. These linings undergo rigorous laboratory and field testing to ensure their suitability for each product.

Recent supply chain disruptions may cause some fillers and shippers of steel drums to either utilize new ingredient suppliers or reformulate a product to compensate for ingredient shortages. It is critical for these customers to understand that a lining once suitable for a new product may no longer be suitable if an existing product is reformulated or a change in process has occurred between product batches.

This alert is intended to assist ISDI members' customers select linings compatible with their products and provide them with information that can help prevent unexpected complications from occurring due to incompatibility between their products and steel drum linings.

New Products: How to Select a Lining

To begin the process, the customer should provide their steel drum supplier with the following important information:

- Safety Data Sheet (SDS) for the new product.
- Description of the distribution environment to which the drum will be exposed.
- Fill temperature, pH, and any other unique attributes of the new product.

In some cases, all ingredients of a product are not listed on the SDS, so it is critical for the customer to fully disclose a new product's formulation. The steel drum supplier will provide this information to a linings supplier to compare the new product's ingredients and characteristics with existing ones to help determine steel drum linings suitable for the new product. If an exact match cannot be found, the linings supplier will often request a product sample to determine its effect on potentially suitable linings through accelerated exposure testing. The supplier will then provide the steel drum manufacturer and their customer suitable lining options based on the test results.

Reformulated Products: How to Select a Lining

A customer should immediately notify their steel drum supplier if a product reformulation is being considered (or has already taken place). A product reformulation often occurs gradually over an extended period and its impact on a steel drum's lining is not considered. But recently, reformulations have been occurring more frequently due to supply chain shortages of various product ingredients. Even the slightest variation to a formulation – such as a minimal change in the product's pH – can adversely impact the steel drum lining a customer has successfully used for years. Customers should always inform their steel drum supplier of even the slightest change to pH, raw materials, fill temperatures, or material handling procedures. An SDS for the reformulated product is often all that is needed. But as with new products, a linings supplier may request a reformulated product sample for further testing to aid in determining suitable lining options for the customer.

Lining Shelf Life: Steel Drums are Shipping Containers Not Storage Containers

Customers sometimes incorrectly characterize and use lined steel drums as storage containers due to their strength and durability. This is an incorrect characterization and use of lined steel drums, as they are designed and constructed to serve as shipping containers. Their primary purpose is to aid in the safe transportation of a customer's product. Linings suppliers conduct product exposure tests on steel drum linings to evaluate their ability to resist damage from a customer's product for a specific amount of time. There is significant potential for adverse reactions to occur between a product and lining when a lined steel drum is incorrectly used as a storage container for a period that exceeds the lining's specifications.

Suitable Lining Selection: The Customer's Responsibility

It is critical for a customer to fully disclose a product's formulation and the additional information listed in this alert to their steel drum supplier to help determine a suitable lining for either a new product, a reformulated product, or a product that may experience process deviations from batch-to-batch. Steel drum manufacturers often work with multiple linings suppliers to help a customer determine and select suitable linings to protect their products. However, it is ultimately the customer's responsibility to select a suitable lining and then provide their steel drum supplier documentation that specifies the lining is acceptable.

DISCLAIMER:

This information is based on the Industrial Steel Drum Institute's best knowledge at time of issuance. It is the responsibility of any filler or user of steel drums and/or pails to ensure that the unique characteristics of products contained therein, or any reformulation of products are accurately described to the drum and lining manufacturers. Customers, fillers and users should consult the appropriate technical professional for assistance in compliance with the responsibilities outlined hereunder.