Transportation

Transportation in general

One key reason for the success and wealth of some nations in the modern world is their ability to produce unique goods better than any other nation or region. Towns, regions or even entire countries tend to produce a select few types of goods where they excel. The ability to excel can be based on various factors such as local mineral resources, climatic conditions or specific tribal knowledge that has been developed over a long period and passed on from generation to generation. As an example, Cuba provides uniquely perfect conditions for the Corojo and Cirollo tobacco plants. Although smoking is quite popular among Cubans, their production of tobacco exceeds the local demand by far. In the case of tobacco, transportation is not a simple task because it requires a constant high humidity level to maintain the high quality expected from the uniquely Cuban cigar.

Transportation by rail, truck and ship.

Like tobacco, there are many products which require specialized transportation containers and environmental conditions in order to maintain freshness, internal integrity, color quality or whatever particular property that makes the product especially unique.

Facts & Figures

- A major step in harmonizing the transportation industry was the international standardization of shipping containers in 1955. With harmonized container sizes and design, one container can be transferred directly from ship to rail to truck all around the globe.
- Today 28,000,000 ISO containers (20 feet) are on the move at any one moment, transporting goods from point to point keeping our economies running.
- Every year 10,000 shipping containers fall overboard.
- The transportation cost to move one bottle of Chilean wine from Chile to Europe is 0.16 Euros.

Why the need to monitor transportation?

Various factors can have a negative impact on a product during transportation. Below are the most commonly measured parameters to ensure product quality:

Temperature

Controlling temperature, for example, is the key parameter in transporting fresh foods, where

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Why the need to monitor transportation?

Temperature *(continued)*

decomposition is reduced significantly by maintaining lower temperatures. Monitoring and recording temperature to prove there has not been any interruption in maintaining a low temperature is often required by regulatory agencies for frozen products or to ensure the efficacy of medications.

Humidity

Monitoring humidity ensures that the growth of micro organisms in food and medications remains below critical levels. Monitoring humidity also helps to ensure structural integrity of paper and cardboard or to avoid corrosion of metals during a long transoceantic journey in a shipping container.

Pressure

Measurement and monitoring of pressure may be used to reconstruct the time and length of shipment for a critical parcel. Pressure is also an essential parameter for products that have to be transported in a vacuum or pressurized chamber. Vacuum or pressure packaging may be used when transporting biological samples or hazardous chemicals.

Shock

Monitoring of the shock level or g-force in all three axes can guarantee that expensive machinery, glass, works of art and other delicate products weren't damaged during transportation.

Light

Monitoring light levels is one way to determine if or at what time a container or package was opened. Monitoring light can ensure protection of light sensitive products such as vegetable oils, chemical substances or photo paper.

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