

Humidity Control for Sugar Manufacturing Facility

Sugar is a sweet crystalline substance obtained from various plants, especially sugar cane and sugar beet, consisting essentially of sucrose, and used as a sweetener in food and drink.

Effects of Uncontrolled Humidity

Refined sugar is fed via belt conveyers to sugar bins or hoppers. At this point the sugar is at about 48°C with moisture content approximately 0.035% of its weight. This sugar, however, has to be cooled to about 38°C to 40°C before it can be packaged. If cooled by the conventional method, the cooling process takes about 12-36 hours during which condensation takes place on the bin ceiling. This results in lumping of the top layer and deterioration in quality.

**Causes of Uncontrolled Humidity**

Various factors are responsible for increasing moisture in the atmosphere

- Presence of water body (as water required for production).
- Sucrose extraction process releasing a large amount of vapor in the environment air.
- Presence of small electricity generation units within the factory premises.

General Recommendation

Relative Humidity during Sugar Storage Areas should be maintained at 20% RH at 24°C (75°F)

Bry-Air Solution

Bry-Air Desiccant Dehumidifiers has been able to solve many 'moisture' problems during storage and packaging of sugar. The Bry-Air Dehumidifiers removes moisture from the air, through a process of continuous physical adsorption, thus preventing condensation.

Bry-Air Desiccant Dehumidifiers can effectively maintain the most stringent humidity conditions required for sugar storage and packaging since they are capable of maintaining RH as low as 1% or even lower at a constant level, regardless of ambient conditions.

Also, the dry air from the dehumidifier is pre-cooled before being blown into the storage bin, which cuts down the cooling time.

Bry-Air has a large range of standard as well as engineered Dehumidifiers which are packaged to ensure dry packaging of sugar whether in sachets or in cubes.