

Almost all moisture is removed in the production of lithium batteries



World leaders in dehumidification.

Humidity creates big problems for lithium battery manufacturers because lithium reacts strongly with moisture. By controlling the air and moisture in the production facilities the negative reactions are being avoided and the battery manufacturers can guarantee their quality.

In 2011, DST's subsidiary DST China made their first dehumidification installation at a lithium battery company in China. It turned out to be the first of many installations at lithium battery manufacturers. The market for lithium batteries has grown significantly the last few years, and it is expected to grow much more. The manufacturing process of lithium batteries demands one of the highest humidity controls in any market. It needs to be under 1% relative humidity for the lithium not to be affected. If it gets too humid in the production room the lithium can react with the humidity and transform into lithium hydroxide and hydrogen. Thus, both the quality, performance, and durability will deteriorate significantly if the lithium batteries come into contact with moisture. With that said, it is not possible to manufacture lithium without humidity control.

To avoid these moisture problems, dehumidification is being installed in the

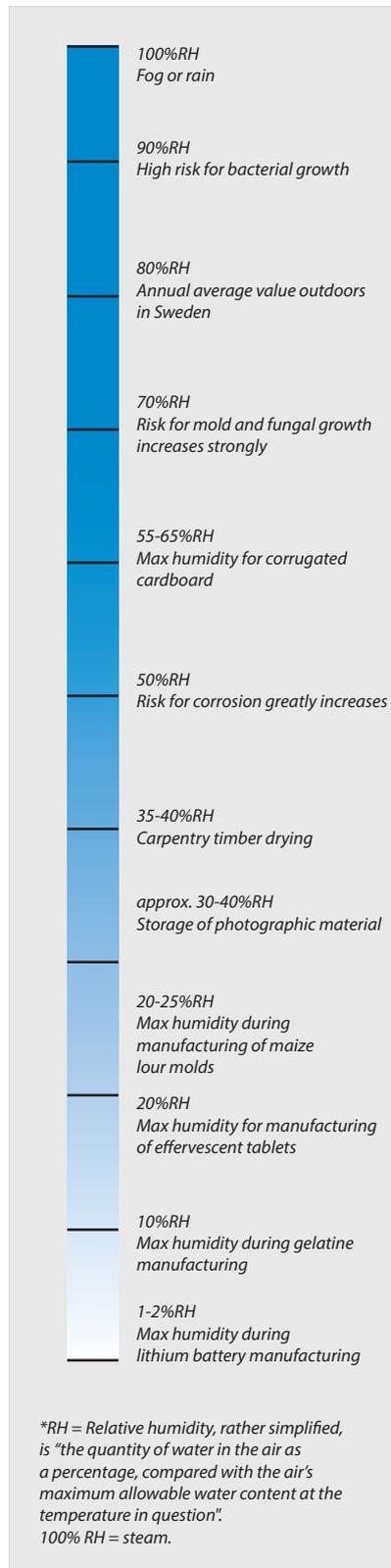
production rooms. It means that the production rooms will be made into clean rooms where the ventilation is being mixed with return air and treated by the dehumidifier so that both temperature and humidity is being controlled by the same unit. DST have the knowledge to do these installations in a way that also is energy efficient. For a lithium battery company, it means that if they have a dehumidification installation from DST they can guarantee their quality and durability on their products at the same time as they are being more energy efficient.

Some of DST references in lithium battery manufacturing:

- Beijing Dalutaiji battery Ltd.
- Bolixun Li-poly Battery Co., Ltd.
- BYD Lithium Battery Co., Ltd,
- China aviation lithium battery Co., Ltd,
- Guangdong Jiefeng Air Conditioning Co. Ltd.
- Guangzhou Yi'an new energy Ltd.
- Nanjing LG Chem New Energy Battery Co., Ltd,
- Shenzhen Kebiao purifying equipment Co., Ltd
- Varta AG



Facts about humidity



Relative humidity

The relative humidity is a measure of how much water the air contains. 50% relative humidity means that the air is moisture saturated to half. The relative humidity is affected by the temperature. With an air temperature of +20°C and a humidity of 60%RH, air humidity rises to 100%RH if the air is cooled to 12°C.

Dew point

The relative humidity in the air increases as the temperature drops. When the relative humidity amounts to 100%, it begins to condense moisture, forming dew. The dew point indicates the temperature at which humidity has risen to 100%.

If the temperature is 20°C and the relative humidity is 40%, the dew point is 6°C. At a temperature of 20°C and an air humidity of 60% the dew point becomes 12°C. The dew point in the outdoor air is lowest during the winter and then rises when it gets warmer.

Seibu Giken DST produces and sells high-quality sorption dehumidifiers. With more than 30 years of experience are the dehumidifiers sold by over 45 representatives around the world as well as through the subsidiaries DST America, DST China and DST Poland.

What distinguishes the DST dehumidifiers is the rotor, in every DST dehumidifier there is a D-MAX rotor from Seibu Giken Co. Japan. Who was the first in the world to manufacture silica gel rotors and since 1984 has been the world leader in this technology. In a dehumidifier, the quality of the rotor is very important as it determines the dehumidifier capacity and technical life. After 10 years, the D-MAX rotors have more than 90% of their original capacity remaining.