

## Safety Guidelines

1. ALWAYS ensure that the valve of the Demo Tube is FULLY OPEN before charging.
2. READ the instructions carefully.
3. ALWAYS visually inspect the Demo Tube for any cracks, deep scratches or any other irregularities before charging or using.
4. Do NOT use if you find any of the above issues with your Demo Tube.
5. NEVER plug in the charger if the wires are frayed, loose or electrical elements exposed.
6. ALWAYS store the Demo Tube in a cool, dry place away from direct sunlight.
7. NEVER place the Condenser (Blue) into the charger.
8. ONLY use the included charger with the Demo Tube.

Failure to follow these safety instructions can result in severe permanent damage to Demo Tube or cause a serious personal injury.

### Disclaimer

This Demo Tube is intended for educational and demonstration purposes only. The Demo Tube is meant to be operated on a clean solid surface whilst wearing eye and hand protection. Other uses of the Demo Tube are NOT allowed. The user takes full responsibility for using the Demo Tube for purposes other than those mentioned. SaltX Technology is not liable for any damage or harm caused by use of the Demo Tube.

The article contains Refractory Ceramic Fibre (RCF) listed on the Reach list of SVHC-substances. The material does not present any risks to the user, as it is captured in the product. At end-of-life the product should be sent back to the supplier for proper recycling.



# SaltX Demo Tube

SaltX Technology AB

# How it works

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**The technology** - The SaltX Demo Tube can be compared to a battery; SaltX stores thermal energy instead of electrical energy. The key to SaltX technology is that the salt can be charged and discharged tens of thousands of times without losing its properties. By nano-coating the salt, it becomes noncorrosive and prevents the salt from sticking together.

**Charging** - To charge the device the reactor side (red) needs to be heated up to approximately 100°C. Initially, there are both nano-coated salt and liquid in the reactor. When charging, the liquid boils and leaves the salt. The liquid vapour then condenses in the condenser (blue). Closing the valve at the end of the charging process, by twisting the demo tube according to the arrows, stores the thermochemical energy of the salt.

**Discharging** - To discharge, open the valve by twisting the tube. The liquid will evaporate and flow back to the reactor. In the reactor, the liquid reacts with the salt releasing the stored thermal energy. This provides heat up to about 50°C. There is no air inside the demo tube (i.e. vacuum) which speeds up the evaporation process. The condenser side (blue) gets cold, the temperature drops to about 5°C.

**The Reactor** - In the reactor, there is crystalized nano-coated salt. When discharging the device, the liquid will go from the condenser over to the reactor where a chemical reaction occurs with the salt leading to the release of the stored heat.

**The Condenser** - The liquid condenses in the condenser. When the device is charged the blue side will contain liquid. A matrix/textile that is touching the inside wall of the metal tube will capture the liquid. When the device is discharged the liquid will be bound to the salt in the reactor leaving the matrix/textile dry.

# Charging & Discharging

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- 1. Important: The Demo Tube needs to be open when charging it.**
2. Open the valve by twisting the Demo Tube until you feel it stops. Twist the tube according to the arrows on the tube (twist the condenser side towards you and the reactor side from you)
3. Push the reactor (Red) into the charger
4. Plug the charger into an electrical socket
5. Cover the blue side with a wet towel for better effect and faster charging
6. Charging time: 3 hours

**Be careful – during the charging the device will get hot**

7. After 3 hours unplug the charger
8. Use the protective square of silicon and grip the Demo Tube. Twist the Demo Tube until the valve is closed. Twist according to the arrows on the Demo Tube (twist the condenser side away from you and the reactor side towards you).
9. Let the Demo Tube cool down to room temperature
10. Discharge the Demo Tube by opening the valve by twisting as described in step 1.

**IMPORTANT: THE DEMOTUBE NEEDS TO BE OPEN WHEN CHARGING IT**



For updated and more detailed information and charging instructions movie visit:

<http://saltxlabs.com/charging/>