

MIL-D-3464 Desiccant REGENERATION

Regeneration of the United Desiccants' Tyvek Desi Pak® or Sorb-It® bags or United Desiccants' X-Crepe Desi Pak® or Sorb-It® bags can be accomplished by the following method:

1. Arrange the bags on a wire tray in a single layer to allow for adequate air flow around the bags during the drying process. The oven's inside temperature should be room or ambient temperature (25.0° C – 29.4° C) ***A CONVECTION, CIRCULATING, FORCED AIR TYPE OVEN IS RECOMMENDED FOR THIS REGENERATION PROCESS. SEAL FAILURES MAY OCCUR IF ANY OTHER TYPE OF HEATING UNIT OR APPLIANCE IS USED.***
2. When placed in a forced air, circulating air, or convection oven, allow a minimum of 3.81 to 5.08 centimeters of air space between the top of the bags and the next metal tray above the bags. If placed in a radiating exposed infrared element type oven, shield the bags from direct exposure to the heating element, giving the closest bags a minimum of 40.64 centimeters clearance from the heat shield. Excessive surface film temperature due to infrared radiation will cause the Tyvek material to melt and/or the seals to fail.

Seal failure may also occur if the temperature is allowed to increase rapidly. This is due to the fact that the water vapor is not given sufficient time to diffuse through the Tyvek material, thus creating internal pressure within the bag, resulting in a seal rupture. Temperature should not increase faster than -17.64° to -17.50° C per minute.

3. Set the temperature of the oven to 118.3° C, and allow the bags of desiccant to reach equilibrium temperature. **WARNING:** Tyvek has a melt temperature of 121.11° C - 126.67° C. (**NON MIL-D-3464E** activation or reactivation of both silica gel and Bentonite clay can be achieved at temperatures of 104.44° F).
4. Desiccant bags should be allowed to remain in the oven at the assigned temperature for 24 hours. At the end of the time period, the bags should be immediately removed and placed in a desiccator jar or dry (0% relative humidity) air tight container for cooling. If this procedure is not followed precisely, any water vapor driven off during reactivation may be re-adsorbed during cooling and/or handling.
5. After the bags of desiccant have been allowed to cool in an airtight desiccator, they may be removed and placed in either an appropriate type polyliner tightly sealed to prevent moisture adsorption, or a container that prevents moisture from coming into contact with the regenerated desiccant.