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TGA8K-01-04A

PROBLEM:

Extending the life of TGA furnaces, applicable to all PerkinElmer hangdown type instruments

PURPOSE:

Informational: SOP's to help extend the life of furnaces

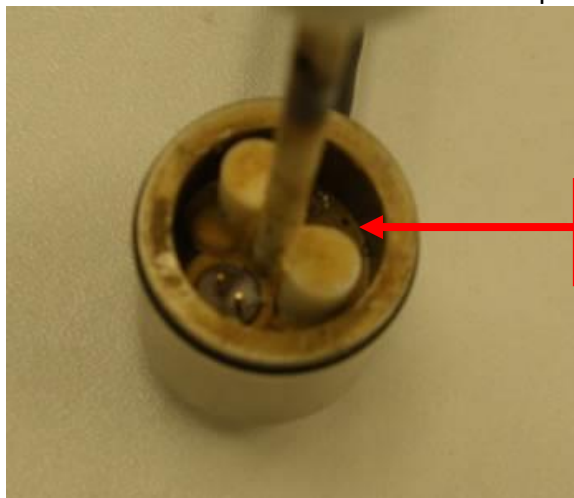
MATERIALS REQUIRED:

N5321004 TGA8000 Furnace Assembly

GENERAL:

Generally, the furnaces used in the TGA8K and P1TGA are robust. Life testing results have proven they can be heated and cooled over 20000 cycles. These tests have been performed on stock furnaces, heated and cooled in a N₂ atmosphere from room temperature to 1000 °C at 100 °C/min

In thermogravimetric analysis samples are burned, frequently in a pyrolytic atmosphere. The products of decomposition often condense on the cooler surfaces of the furnace, thermocouple and furnace tube. This is especially noted in the well of the furnace assembly and around the thermocouple connection. These by-products can be very corrosive and will result in premature failure of one or both of the components



Condensate/decomposition
by-products

Some samples and applications require more frequent cleaning than others, especially rubber/oil and hyphenated techniques. Here are several steps that can be taken to help extend the life of a furnace

TGA8K Furnace and Thermocouple Protection

PROCEDURE:

1. Increase flow rates
2. Decrease sample size
3. Verify exhaust line is not obstructed
4. Furnace tube, use a clean furnace tube, making it easy to detect residue build-up
5. Furnace Clean, using the furnace clean button in the Pyris Control Panel (or elevate the temperature to 900-1000 °C in air or O₂ for 15 minutes). Perform this function more frequently if furnace color is grey.
 - a. Remove platinum furnace shield when performing a furnace clean, allowing the air or oxygen to easily reach the surfaces of the furnace
6. Use a quartz thermocouple sleeve and aluminum oxide powder in the bottom of the furnace for added protection

Available from:

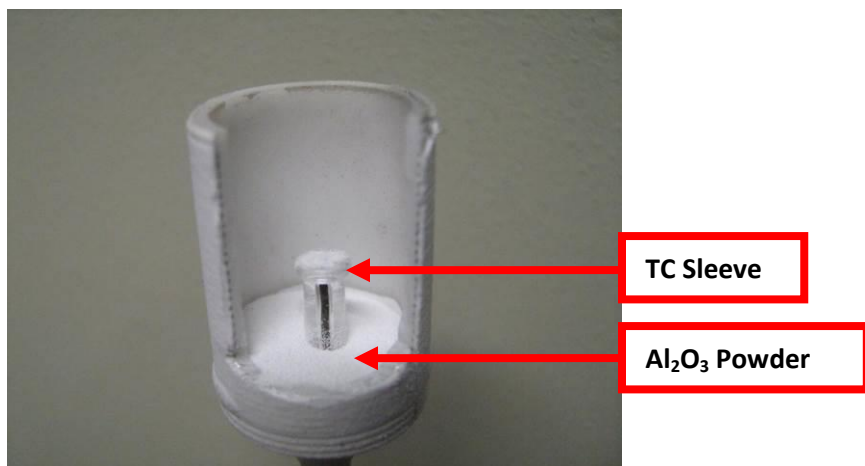
Thermal Support, Inc.

PO Box 268

Hayesville, NC 28904 USA

1.678.580.3822

<http://www.thermalsupport.com/index.php>



7. Pack aluminum oxide wool/fiber into the well of the furnace to act as an absorbent which is easily removed and replaced

