

CLEANING KIT FOR ROCK-EVAL 7S ALUMINA CRUCIBLES

NEW PROCESS FOR REMOVING GLASS DEPOSITS

Vinci Technologies, which continuously invests in R&D in order to improve the life time of its systems and to make the user life easier, has developed a new process for removing the solid glass deposits inside the Rock-Eval 7 alumina crucibles.

This cleaning cycle process allows to virtually extend the lifetime of the alumina crucibles to infinity, and allows to reuse the same crucibles ever and ever, by turning used crucibles into brand new ones.

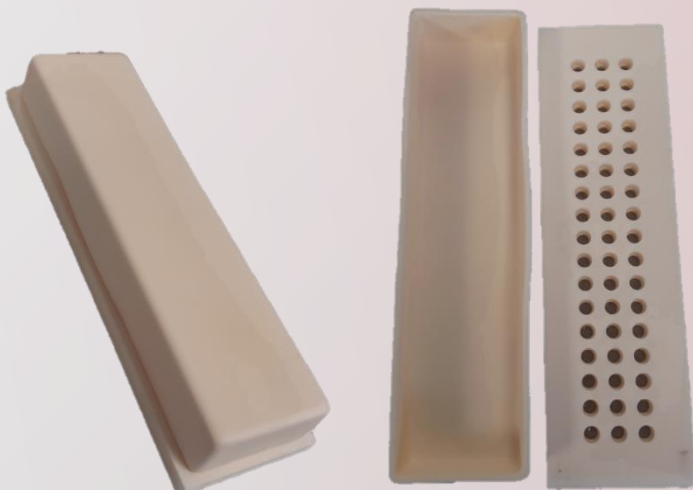
Glass deposits is a well-known effect that occurs when analyzing silicate rocks at high temperature (>1000°C). Typically it happens when performing the Rock-Eval Total Sulfur cycle analyses for cracking the sulfates at 1200°C. These glass deposits are mainly composed by silica (SiO₂) and other silicates that can be present in some sedimentary rocks like sandstones, siltstones and shales. Other elements can also be present in the glass deposits like iron or metallic compounds.

This new way to clean the crucibles is the cheapest, the fastest and above all the safest available to remove the glass from the crucibles. Indeed, up to now the only way to remove the glass is to use HF, HydroFluoridric acid, which is a very dangerous product to handle, that can cause serious injuries.

Main Features

The ceramic crucible cleaning kit aims to remove vitrified silica from the bottom of the crucibles used in Rock Eval sulfur studies with silica containing samples. When the sample is heated to 1200°C in the Rock Eval 7S sulfur oven, a coloured deposit of vitrified silica, appears at the bottom of the crucible, rendering it unusable for subsequent analyses. The goal of this kit is to restore the ceramic crucibles to their original state, free from this deposit. The kit includes a tray with 51 slots to hold 51 crucibles, covered with a lid. Both are made of ceramic material that can withstand high temperatures. A special cleaning powder designed by Vinci should be used in the crucible cleaning protocol. About 100mg per crucible is required. Once prepared, the tray with the crucibles is placed in a muffle furnace for 3 hours at 1300°C. After this, the crucibles need to be cleaned with standard commercial HCl for 12 hours, and then rinsed with water.

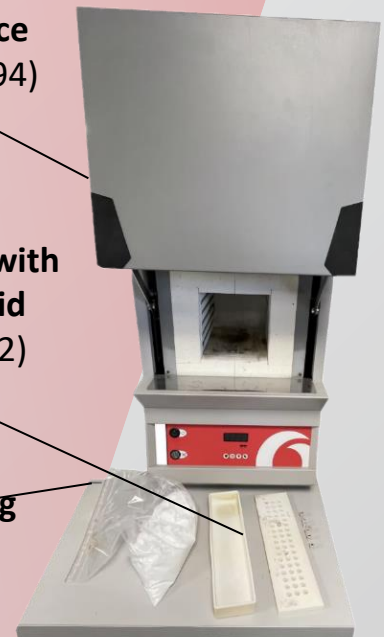
Cleaning Box:



Muffle Furnace
(Ref:V-017094)

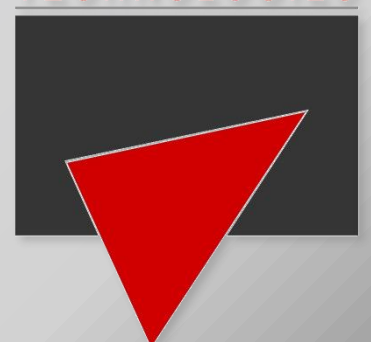
Cleaning Box:
1 ceramic tray with
51 positions + lid
(Ref:V-017092)

1kg of Cleaning
Powder:
(Ref:V-017093)



Cleaning Kit includes 1 muffle furnace +
1 cleaning box + 1kg of cleaning powder
(Ref:V-01791)

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PROCEDURE

Estimated procedure time: 12-24H

Step 1: Place the dirty crucibles (full of glass) inside the cleaning box. 51 positions are available.

Step 2 : Fill the dirty crucibles with the Vinci detergent powder.



Step 3 : Place the cleaning box inside the Carbolite Oven. Be careful not to touch the oven wall with the cleaning box.

Step 4 : Raise the furnace temperature until 1300°C and hold this temperature for 3 hours.

Step 5: Cool down the furnace.

Step 6: When the oven temperature is close to the ambient temperature remove the cleaning box from the oven.

Step 7: Plunge the dirty crucibles into an HCL bath (a concentration from 10 to 20% is sufficient) during few hours (1 night for more efficiency but at least 2 hours required). Scratching the crucibles with a spatula can be useful before putting the crucibles into the HCL bath.

Step 8: Remove carefully the crucibles from the bath (use pincer, gloves and protection glasses) and rinse them with water.

Step 9: Scratch again the crucibles if necessary.

Step 10: If some crucibles are not clean enough redo step 7, 8 and 9. In some cases, there is initially a too much glass inside the crucible and a second cleaning cycle is necessary to completely remove glass.

Step 11: Sometimes the crucibles can stay attached to the cleaning box. If they are not coming out easily, be careful not to break them. Place the cleaning box upside down (the cover below and the plate with attached crucibles above with crucibles in downward position) in the muffle furnace at 1300°C for 3 hours, cool down the oven and recover the crucibles.

Before



**After
thermal
treatment
+ cleaning
powder & HCl bath + scratching**

