

AzuRe178



Descrição: Azulejo do século XVIII-XIX (1790-1820);
Origem: Lisboa.

Amostras: Fragmentos em depósito no *Museu Nacional do Azulejo* em Lisboa.

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 - ✓ Análise por XRD
 - ✓ Análise Térmica por TGA/DTA





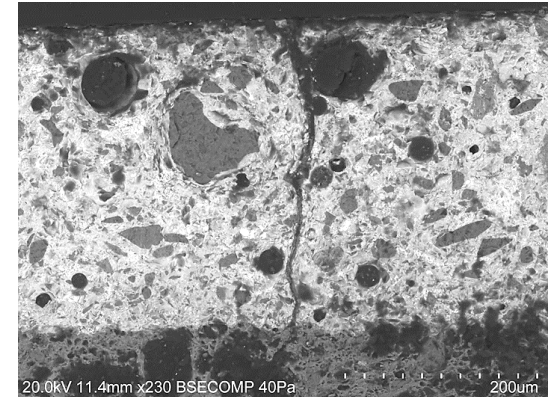
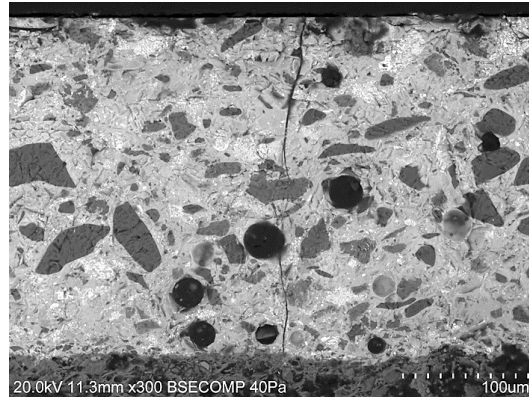
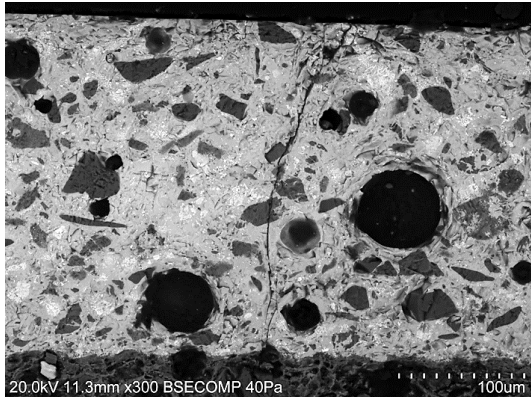
Azulejo com algum craquelê evidente, especialmente nas áreas pintadas a amarelo.



- Espessura do Azulejo = 12 mm



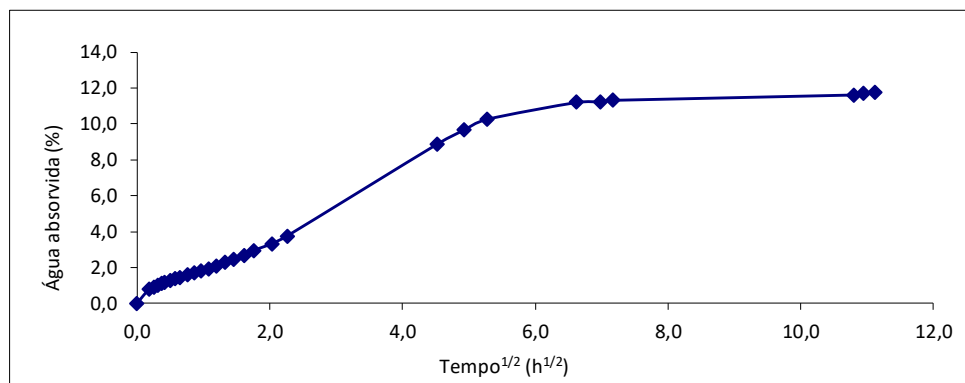
Chacota avermelhada compacta com poros alongados e circulares; vazios alongados; areias.



- Observa-se craquelé.
- Espessura do Vidrado = 287 μm

Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

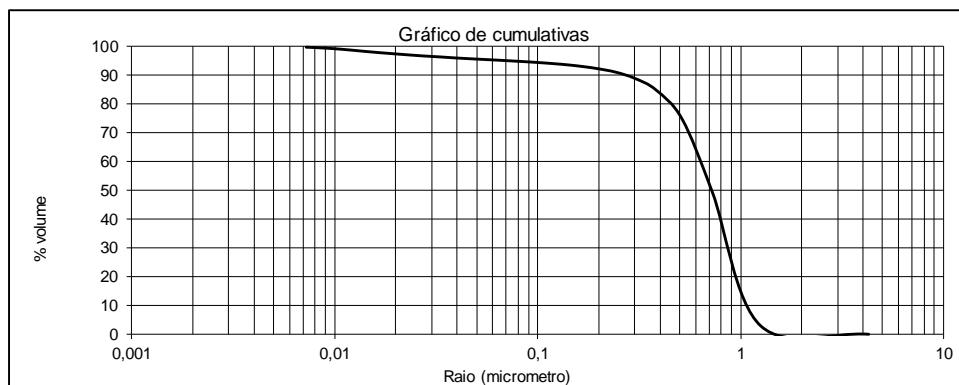
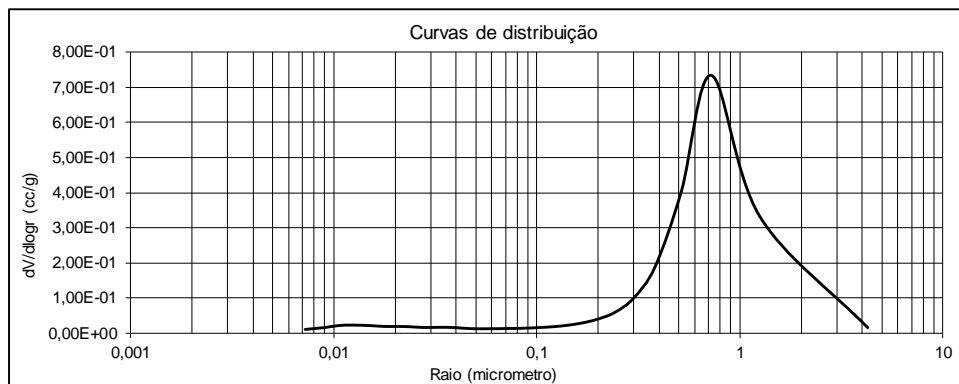
Curva de Absorção de Água (Chacota)



Massa volúmica real (kg/m³)	2783
Massa volúmica aparente (kg/m³)	1830
Porosidade aberta (vol %)	34,3
Coefficiente de capilaridade (kg/m²/h^{1/2})	0,4
Teor máximo de água (%)	18,7

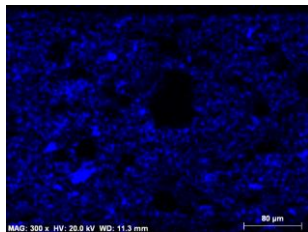
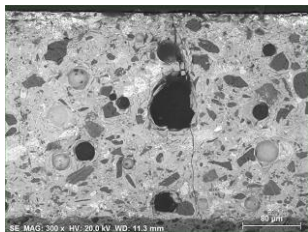
Procedimento: baseado na norma NP EN-13755.

Curvas de Porosimetria (Chacota)

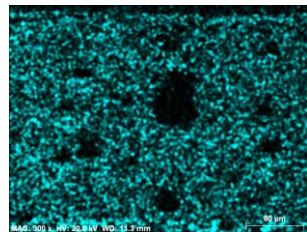


Procedimento: baseado na norma ASTM D4404-84.

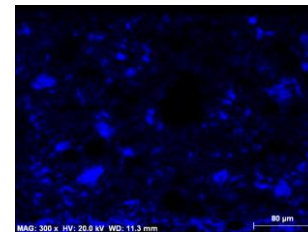
Equipamento: Porosímetro Quantachrome Autoscan



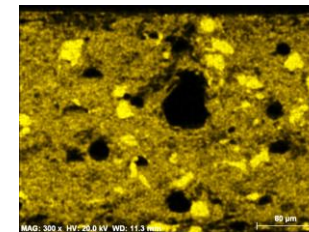
Na



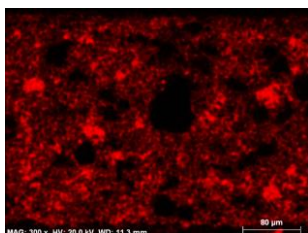
Mg



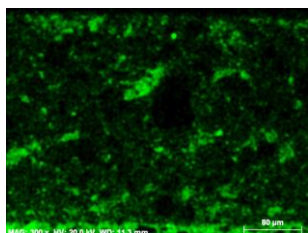
Al



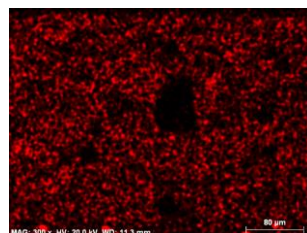
Si



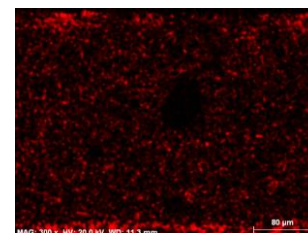
K



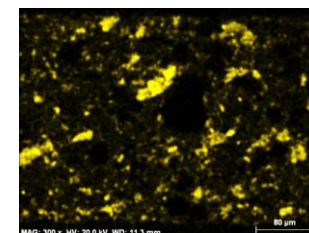
Ca



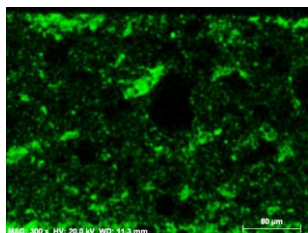
Ti



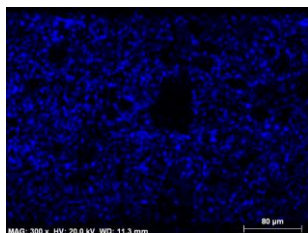
Fe



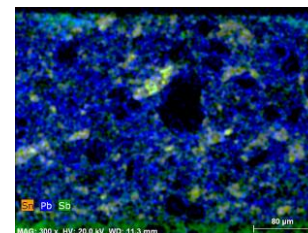
Sn



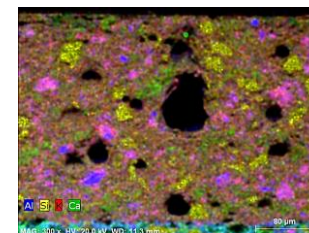
Sb



Pb



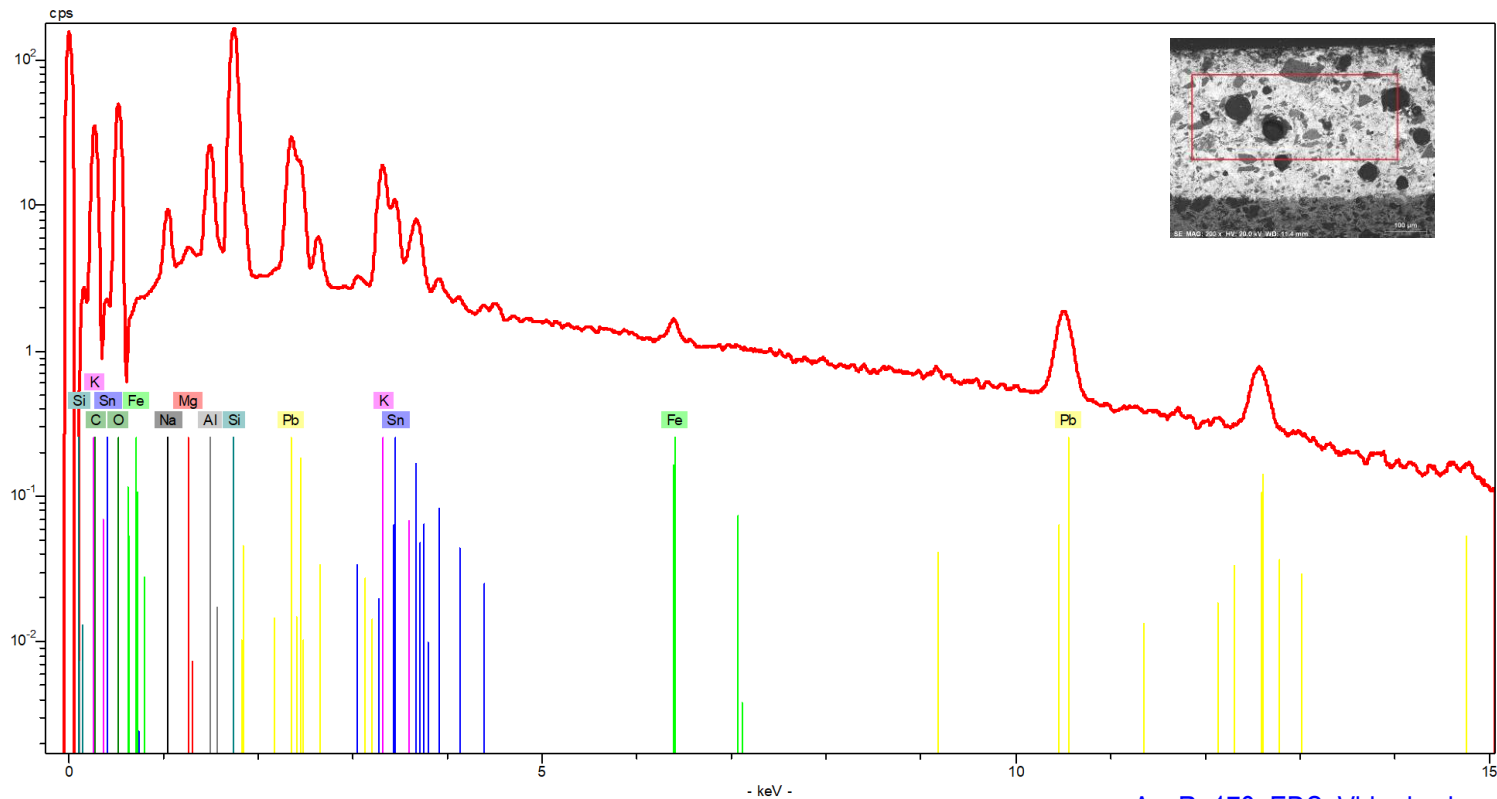
Combinação
Sn_Pb_Sb



Combinação
Al_Si_K_Ca

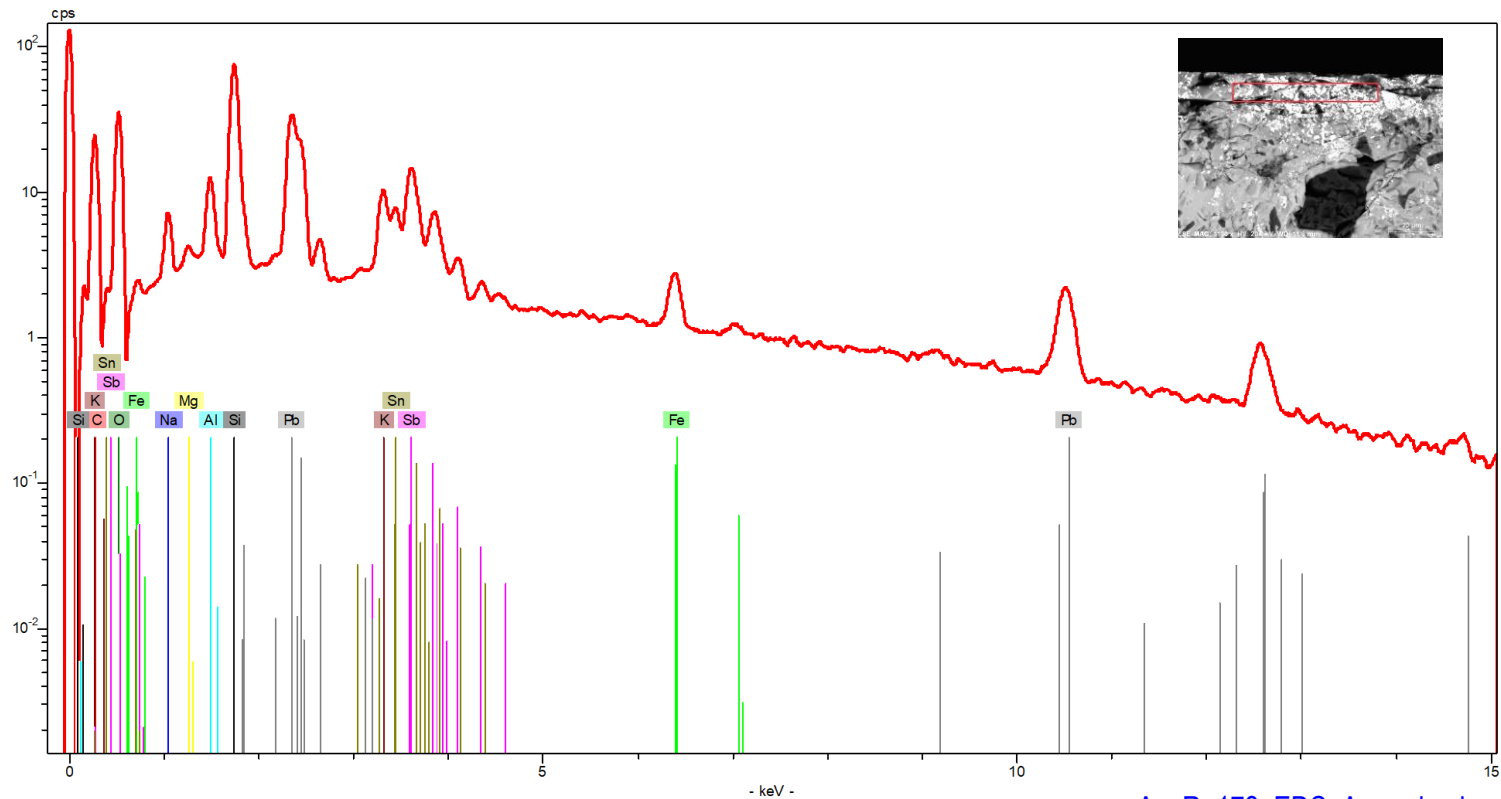
Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

VIDRADO BRANCO

[AzuRe178 EDS Vidrado.xls](#)

Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

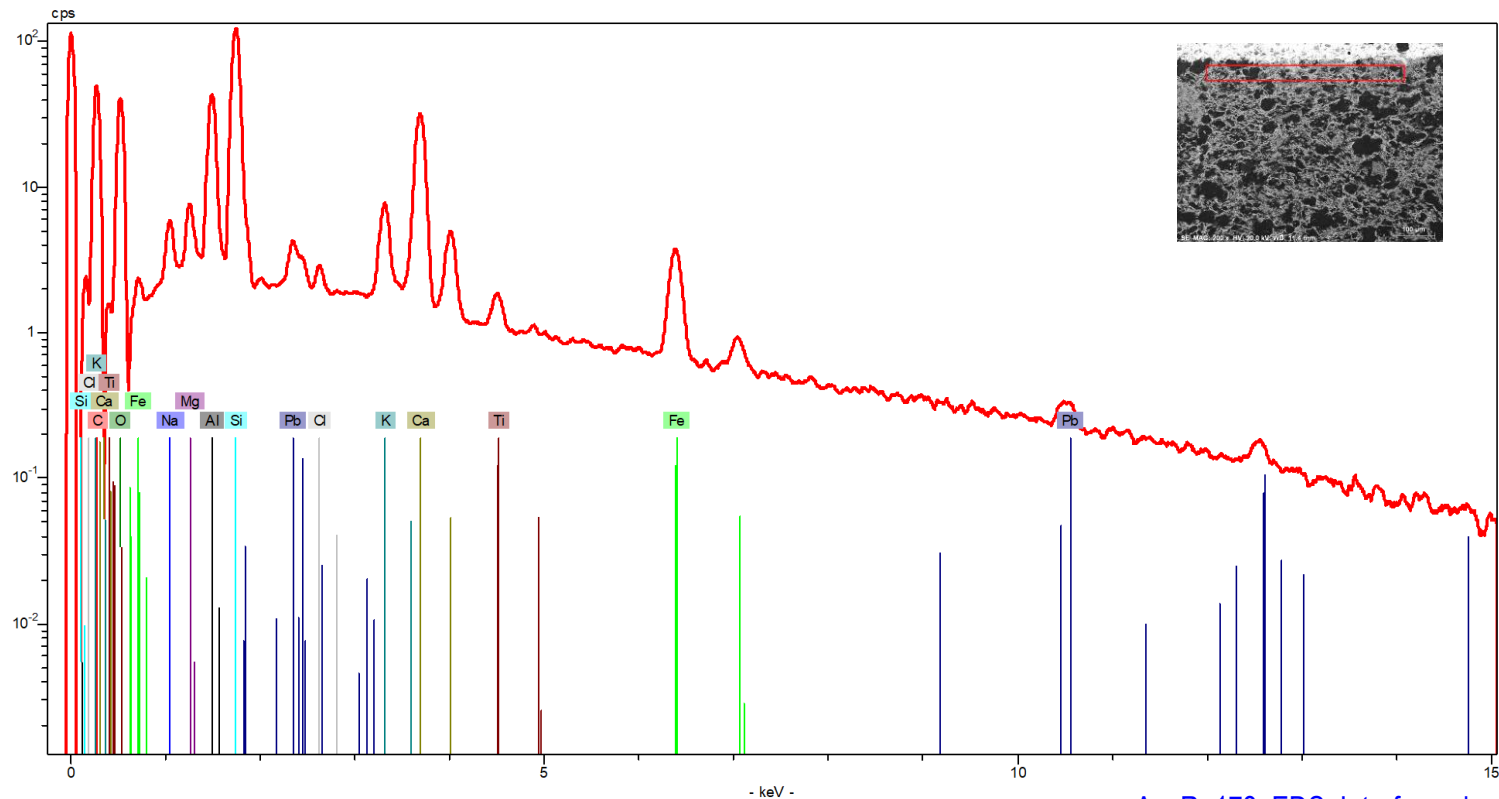
PIGMENTO AMARELO



[Azure178 EDS Amarelo.xls](#)

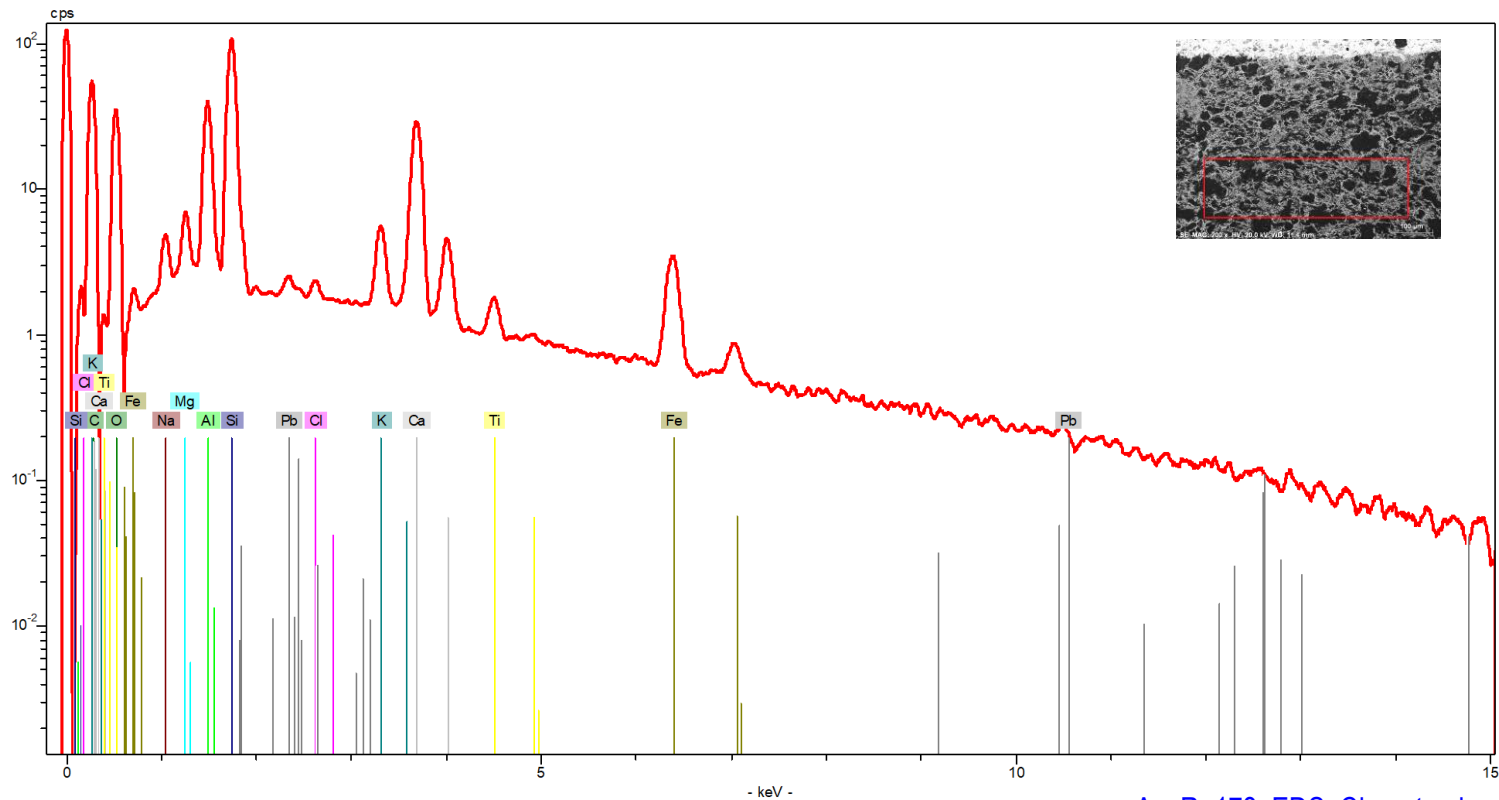
Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

INTERFACE

[Azure178 EDS Interface.xls](#)

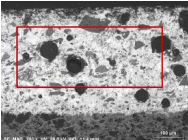
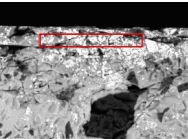
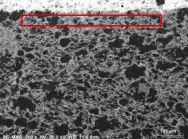
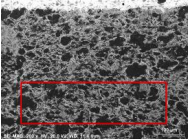
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CHACOTA

[Azure178 EDS Chacota.xls](#)

Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

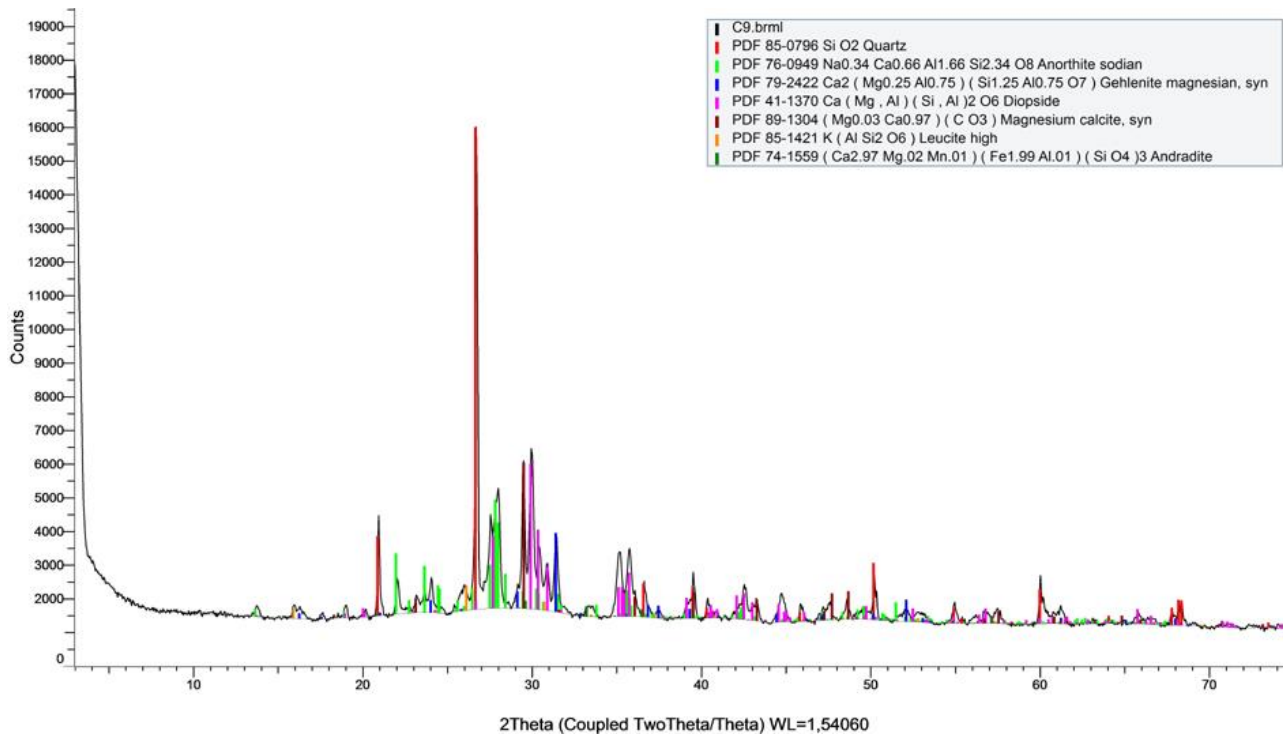
Composição química (% m/m)*

Área Analisada	Na	Mg	Al	Si	Cl	K	Ca	Ti	Fe	Sn	Sb	Pb
 vidrado branco	2,15	0,10	5,20	33,1 8	--	8,01	--	--	0,55	10,8 3	--	39,9 8
 pigmento amarelo	2,31	0,22	2,62	17,5 0	--	4,12	--	--	2,46	7,80	16,25	46,71
 chacota (próximo interface)	2,81	1,76	15,3 8	43,1 8	--	8,01	22,4 5	0,58	3,68	--	--	2,16
 chacota	1,56	1,88	15,5 7	39,5 4	0,08	3,06	27,1 9	1,05	8,16	--	--	1,91

* - Os valores apresentados na tabela correspondem às percentagens mássicas dos elementos detetados na amostra, não considerando o teor de oxigénio e normalizados a 100% ([ver aviso](#)).

Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

CHACOTA

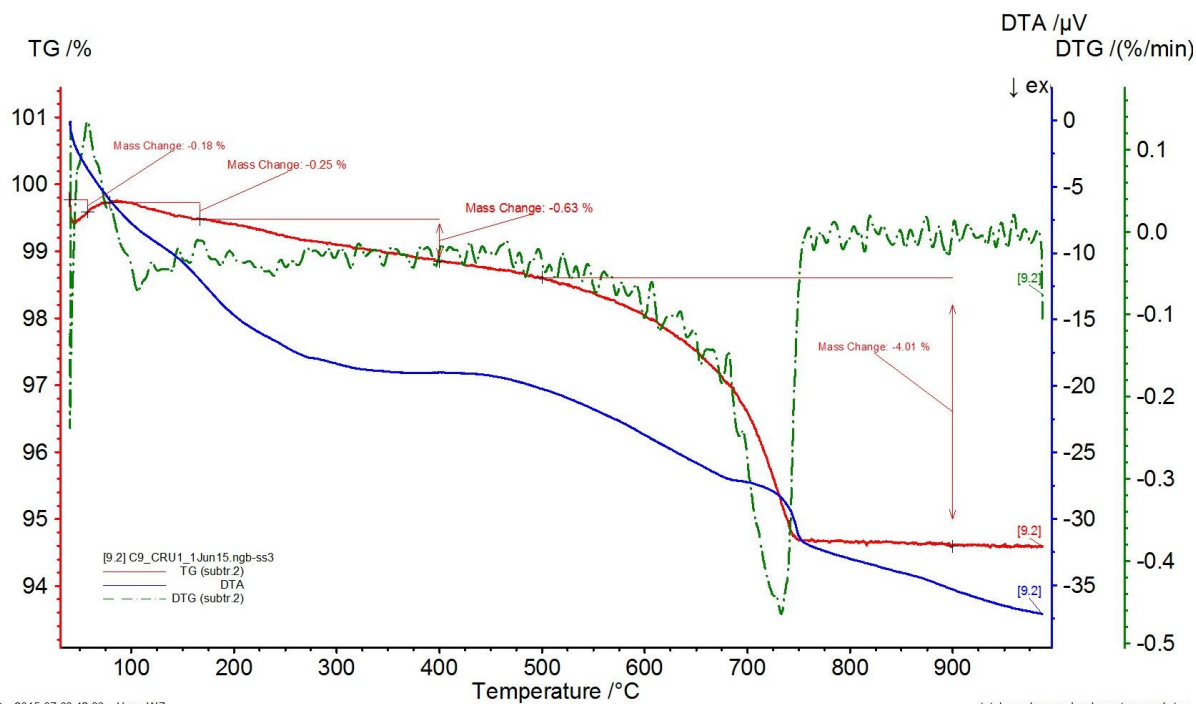


Composição mineralógica semi-quantitativa (% m/m)

Quartzo	Anortite	Diópsido	Gehlenite Magnesia	Calcite	Andradite	Leucite
SiO ₂	CaAl ₂ Si ₂ O ₈	Ca(Mg,Al)(Si,Al) ₂ O ₆	Ca ₂ (Mg _{0.25} Al _{0.75})(Al _{0.75} Si _{1.25} O ₇)	CaCO ₃	Ca ₃ Fe ₂ (SiO ₄) ₃	K(Al Si ₂ O ₆)
25,26	30,35	29,51	5,22	7,59	0,87	1,20

Equipamento: Difrátometro de raio-X Bruker AXS-D8 Discover

CHACOTA



Perda de massa (%)	Teor de carbonatos (%)
4,01	9

C9 2015-07-03 12:36 User: W7

total com brancosLurdes esteves.ngb-taa

Equipamento: Analisador térmico TGA/DTA Netzsch STA 449 F3 Jupiter.