

AzuRe177



Descrição: Fragmentos de azulejo do século XVIII (1780-1800);
Origem: Lisboa.

Amostras: Fragmentos e uma secção semi-polida em depósito
no *Museu Nacional do Azulejo* em Lisboa.

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 - ✓ Porosimetria de mercúrio
- **Caracterização Química/Mineralógica**
 - ✓ Análise por SEM/EDS
 - ✓ Análise por XRD

AzuRe177





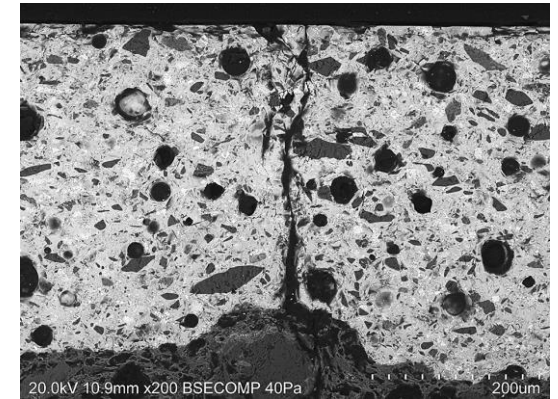
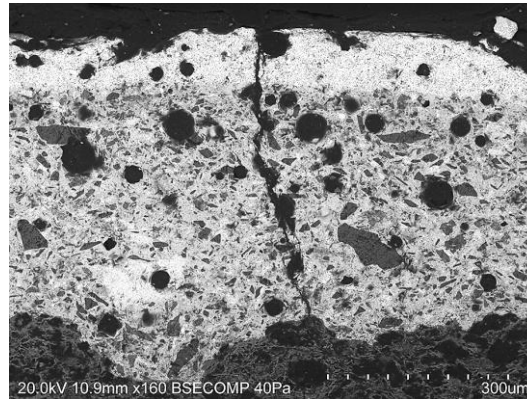
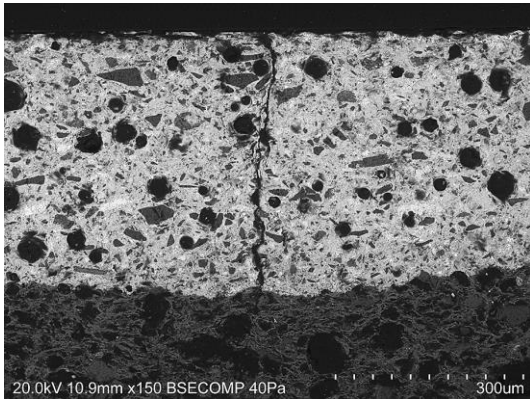
Fragmentos de azulejo em bom estado de conservação.



- Espessura do Azulejo = 11 mm



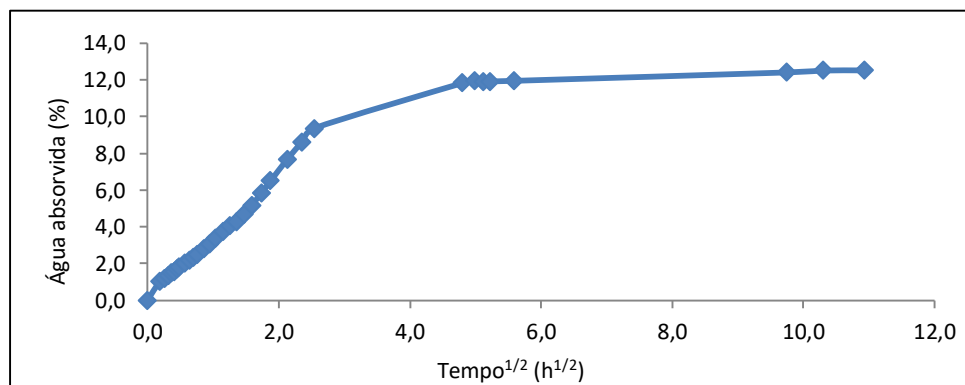
Chacota avermelhada com poros alongados e circulares; vazios alongados; areias.



- Observa-se craquelé.
- Espessura do Vidrado = 427 μm

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

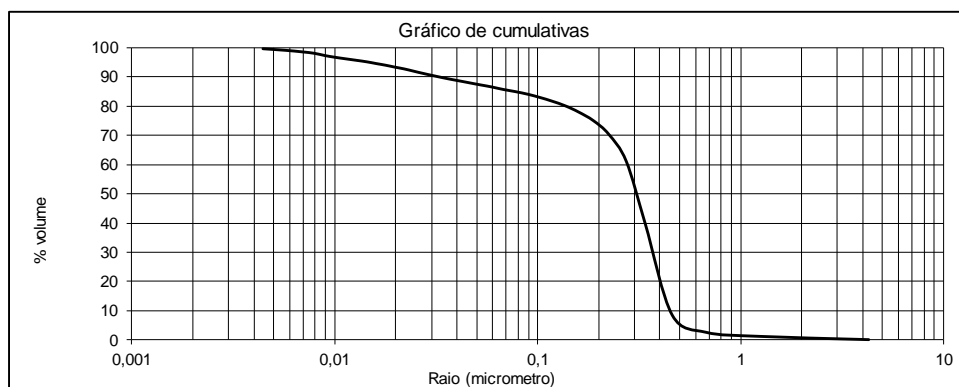
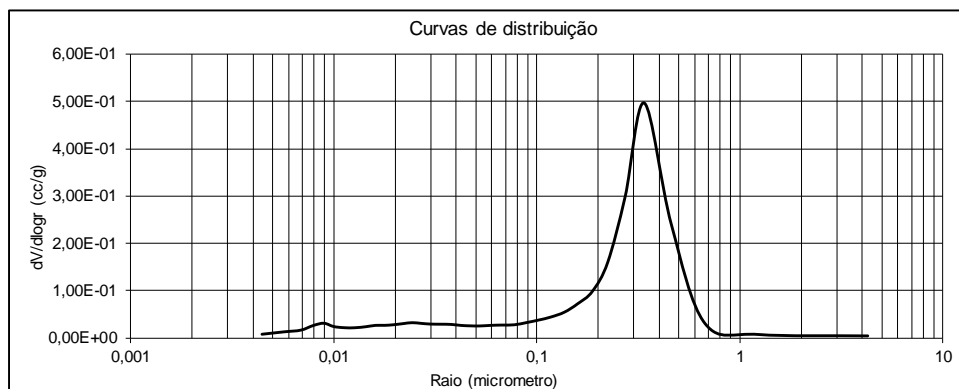
Curva de Absorção de Água (Chacota)



Massa volúmica real (kg/m³)	2722
Massa volúmica aparente (kg/m³)	1786
Porosidade aberta (vol %)	34
Coefficiente de capilaridade (kg/m²/h^{1/2})	0,5
Teor máximo de água (%)	18,6

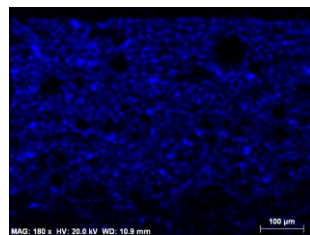
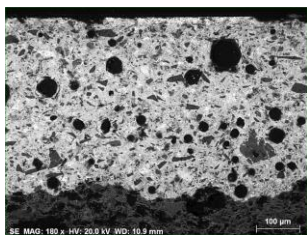
Procedimento: baseado na norma NP EN-13755.

Curvas de Porosimetria (Chacota)

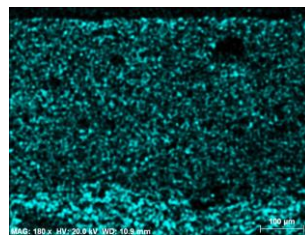


Procedimento: baseado na norma ASTM D4404-84.

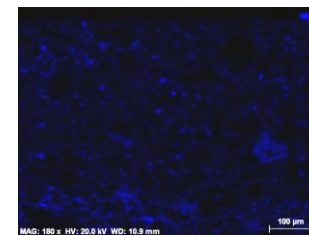
Equipamento: Porosímetro Quantachrome Autoscan



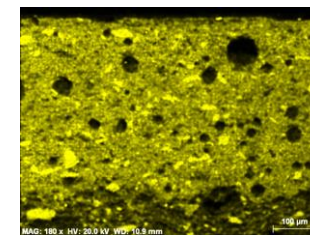
Na



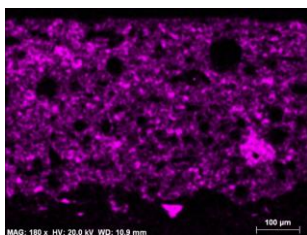
Mg



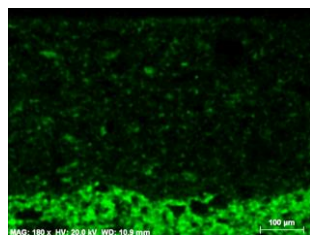
Al



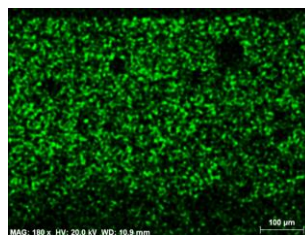
Si



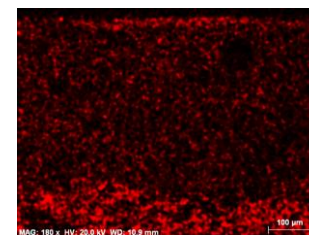
K



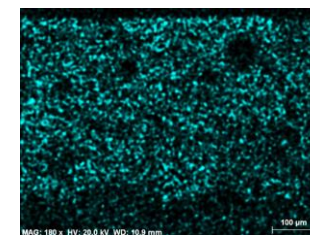
Ca



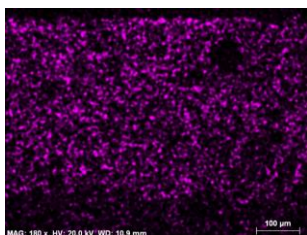
Mn



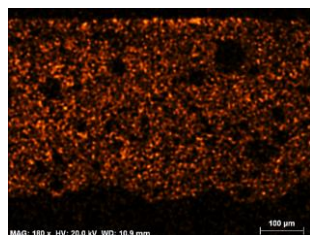
Fe



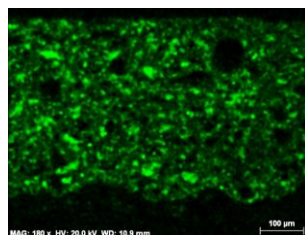
Co



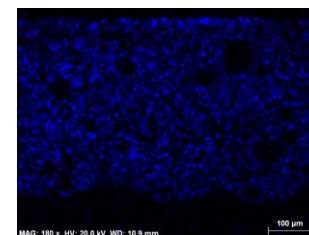
Ni



As

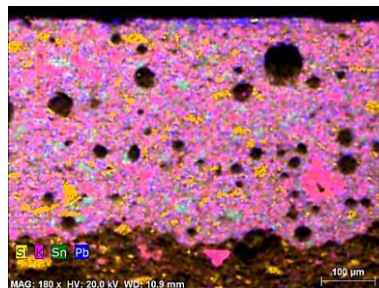
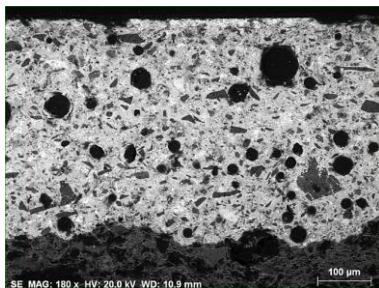


Sn

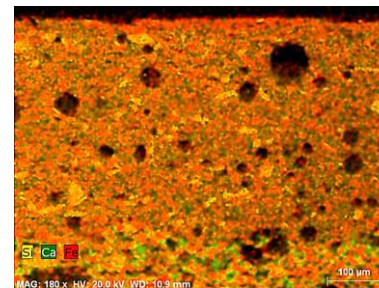


Pb

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



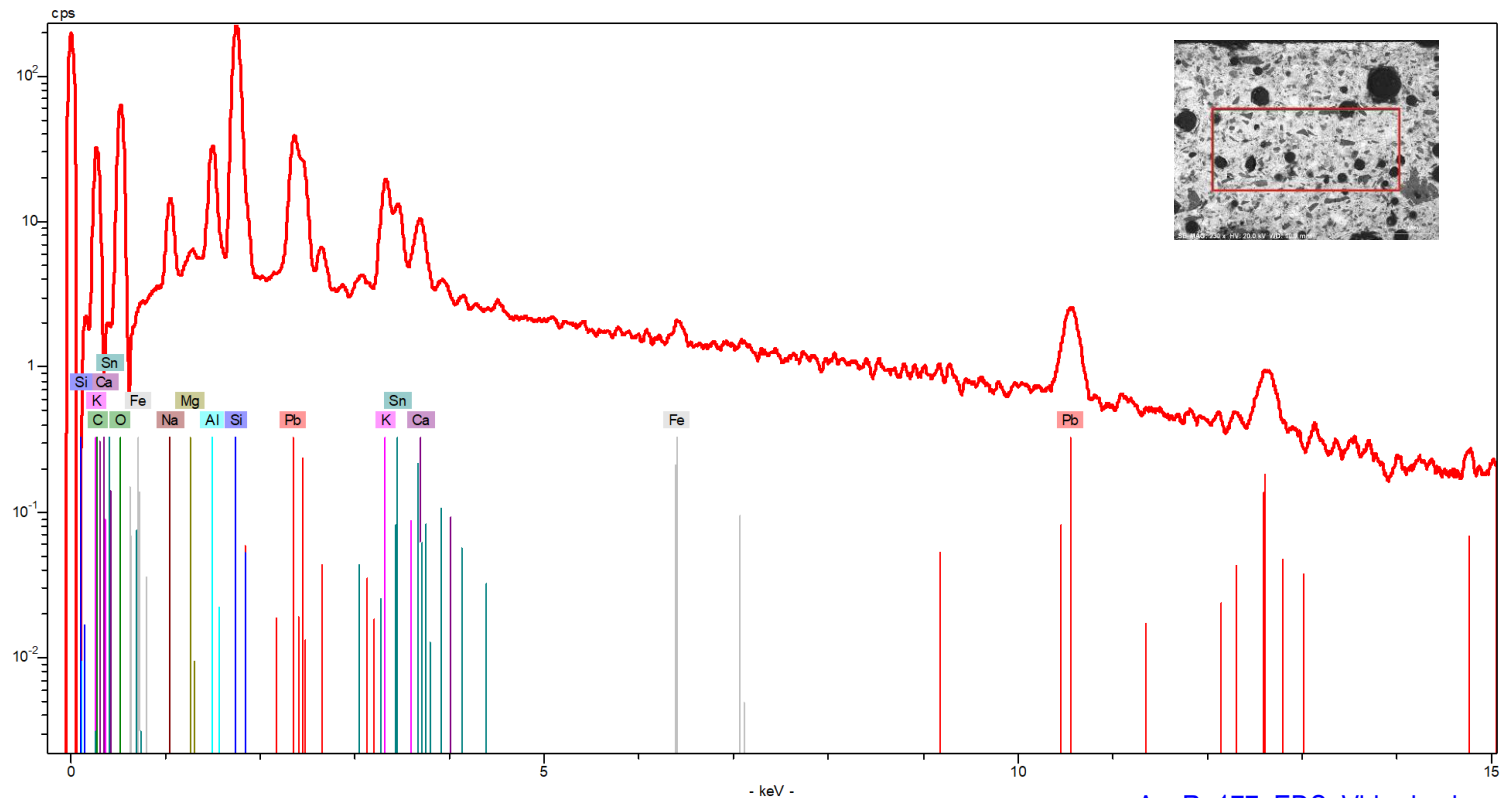
Combinação
Si_K_Sn_Pb



Combinação
Si_Ca_Fe

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

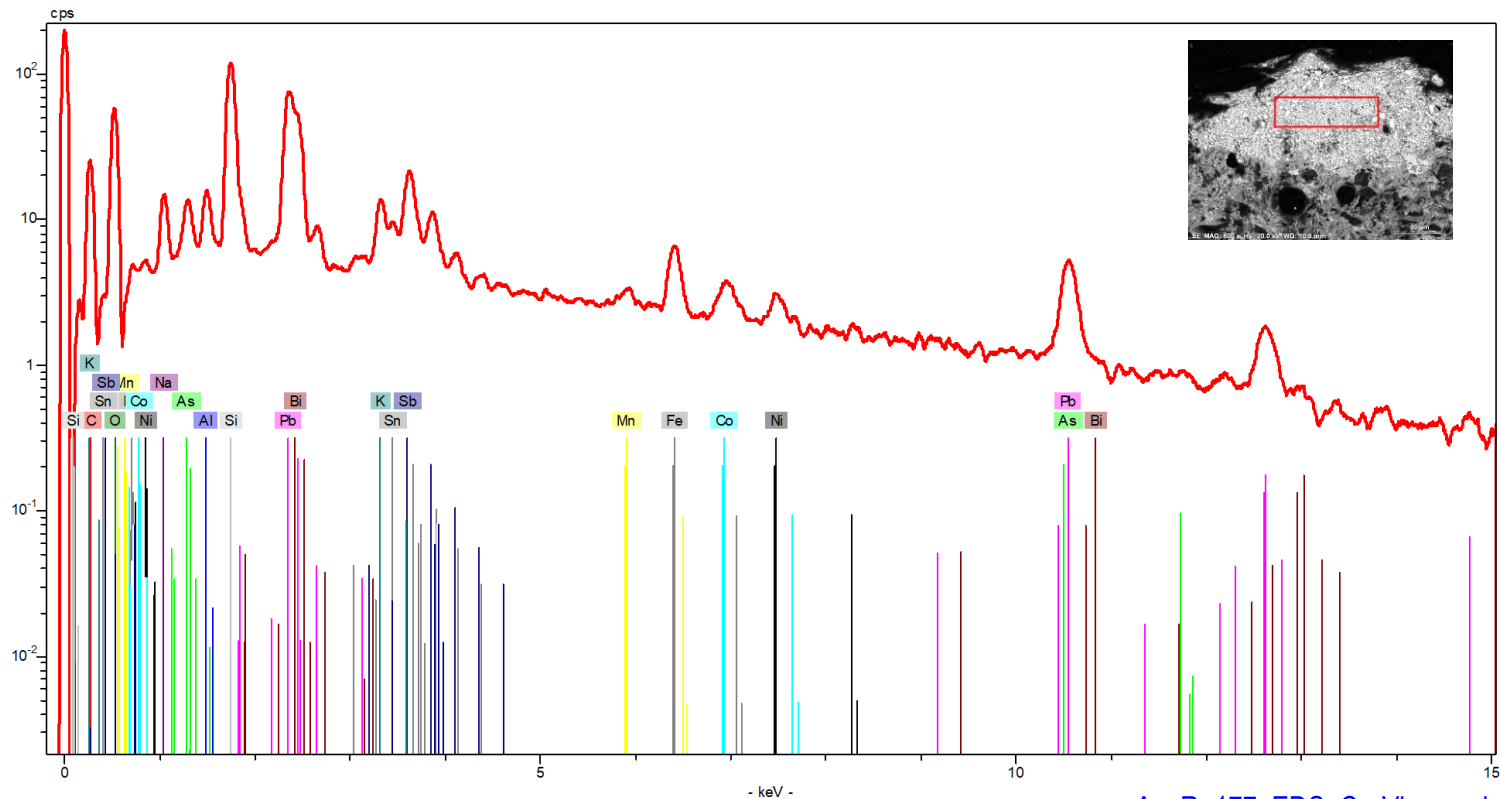
VIDRADO BRANCO



[Azure177 EDS Vidrado.xls](#)

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

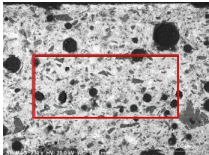
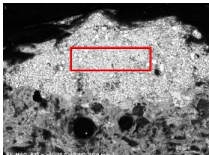
PIGMENTO DE COR VINOSA



[Azure177 EDS CorVirosa.xls](#)

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

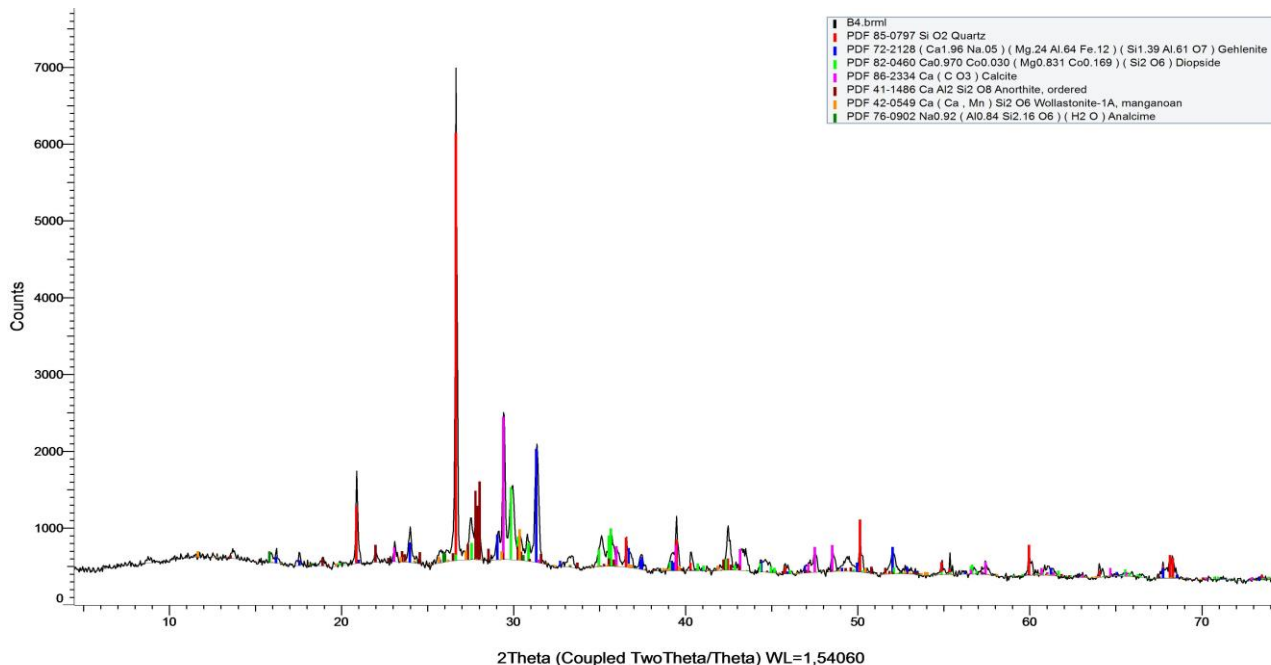
Composição química (% m/m)*

Área Analisada	Na	Mg	Al	Si	K	Ca	Mn	Fe	Co	Ni	As	Sn	Sb	Pb	Bi
 vidrado branco	3,52	0,38	5,92	38,42	6,44	1,39	--	0,48	--	--	--	10,99	--	32,47	--
 pigmento de cor vinosa	3,58	--	1,91	17,29	2,66	--	0,52	3,37	1,59	1,30	3,07	5,65	12,47	42,01	4,58

* - 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](#)).

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CHACOTA



Composição mineralógica semi-quantitativa (% m/m)

Quartzo	Anortite	Diópsido	Gehlenite Magnésiana	Calcite Mg	Wollastonite	Analcite
SiO ₂	CaAl ₂ Si ₂ O ₈	Ca(Mg,Al)(Si,Al)O ₆	Ca ₂ (Mg _{0,25} Al _{0,75})(Al _{0,75} Si _{1,25} O ₇)	Ca(CO ₃)	CaSiO ₃	NaAlSi ₂ O ₆ ·H ₂ O
24,50	36,15	13,70	8,74	8,60	6,85	1,48

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