

Table 4. Individual Cr-ruby grains with Cr inclusions

	1210A-1					1210A-2			1210B-1	
	β-alumina	corundum			Cr-alloy (metal %)	β-alumina	corundum		β-alumina	
		cores	inner rims	outer rims			cores	rims	laths	overgrowths
wt %	n=3	n=3	n=4	n=3	n=2	n=1	n=4	n=7	n=6	n=5
SiO ₂	0.01	0.00	0.01	0.01	0.09	0.15	0.01	0.03	0.01	0.09
ZrO ₂	0.01	0.01	0.00	0.00		0.02	0.00	0.00	0.01	0.00
Ti ₂ O ₃	0.00	0.00	0.00	0.02		0.00	0.00	0.00	0.00	0.00
Al ₂ O ₃	86.32	98.00	77.03	60.26	0.05	79.20	98.51	81.73	89.74	71.17
Cr ₂ O ₃	1.87	2.22	22.64	39.74	99.45	6.63	0.74	16.70	1.83	17.64
V ₂ O ₅	0.01	0.01	0.03	0.03		0.00	0.01	0.01	0.00	0.02
FeO	0.00	0.00	0.00	0.02		0.00	0.01	0.01	0.01	0.01
MnO	0.01	0.00	0.05	0.09	0.32	0.06	0.00	0.03	0.00	0.06
MgO	0.07	0.01	0.02	0.01		1.57	0.01	0.02	0.08	0.78
CaO	0.01	0.00	0.00	0.01		0.06	0.00	0.00	0.01	0.07
Na ₂ O	0.03	0.00	0.00	0.01		0.17	0.00	0.00	0.02	0.04
K ₂ O	12.65	0.00	0.00	0.00		13.09	0.00	0.00	8.05	10.75
total	100.99	100.24	99.78	100.19	99.91	100.96	99.27	98.54	99.78	100.63
at.%										
Ti				0.02						
Al	34.04	39.37	33.36	27.68		31.57	39.79	35.15	35.16	29.78
Cr	0.49	0.6	6.58	12.24		1.77	0.20	4.82	0.52	4.90
V	0.00		0.01	0.01						
Fe										
Mn			0.02	0.03		0.02		0.01		0.02
Mg	0.03		0.01	0.01		0.79	0.01	0.01	0.39	0.41
Ca						0.02				0.02
Na	0.02					0.11			0.02	0.02
K	5.40					5.96			3.86	4.82
O	60.00	60.00	60.00	60.00		59.8	60.00	60.00	60.10	60.00
Cr#	0.00	0.015	0.165	0.307		0.05	0.005	0.121	0.015	0.141

1210B-1 (cont.)			1210B-2				
corundum		Cr-Fe alloy	corundum			Cr-alloys	
wt%	cores	rims	SEM	cores	rims	outermost	(metal %)
	n=4	n=6	n=5	n=4	n=4	n=2	n=5
SiO ₂	0.01	0.00	(metal %)	0.01	0.03	0.01	0.24
ZrO ₂	0.04	0.00		0.01	0.01	0.01	0.12
							0.00

Ti ₂ O ₃	0.00	0.03	0.11	0.02	0.09	0.03	0.00	0.00
Al ₂ O ₃	93.91	64.01	82.5	97.50	85.36	61.66	99.39	88.46
Cr ₂ O ₃	5.96	35.63	16.2	2.99	14.23	36.66	0.00	0.00
V ₂ O ₅	0.01	0.02	1.06	0.00	0.01	0.02	0.00	0.01
FeO	0.02	0.00	99.97	0.00	0.00	0.00	0.00	11.00
MnO	0.00	0.06		0.01	0.02	0.06	0.26	0.00
MgO	0.00	0.01		0.01	0.01	0.01	0.00	0.00
CaO	0.00	0.00		0.00	0.00	0.01	0.00	0.23
Na ₂ O	0.00	0.01		0.00	0.01	0.02	0.00	0.00
K ₂ O	0.00	0.03		0.00	0.01	0.02	0.00	0.00
total	99.96	99.80		100.54	99.76	98.48	99.89	99.82
at.%								
Zr	0.01							
Ti		0.01	0.21		0.03	0.01		
Al	38.1	29.09	83.6	39.16	35.94	28.56	99.50	
Cr	1.51	10.86	15.3	0.81	4.02	11.39	0.19	
V			0.80			0.01		
Fe								
Mn		0.02			0.01	0.02		
Mg								
Ca								
Na								
K								
O	60.4	60.0		60.03	60.00	60.01		
Cr#	0.038	0.272		0.020	0.101	0.285		

	1210B-3				1210B-5		
	β"-alumina	Corundum		Cr alloy	corundum		β"-alumina
wt%		cores	rim	metal %	cores	rims	
	n=4	n=6	n=1	n=1	n=6	n=4	n=6
SiO ₂	0.00	0.01	0.02				
ZrO ₂	0.00	0.01	0.01				
Ti ₂ O ₃	0.00	0.00	0.00			0.02	
Al ₂ O ₃	80.22	99.49	93.36			0.01	
Cr ₂ O ₃	5.38	0.72	6.98	99.6	99.96	94.98	79.05
V ₂ O ₅	0.01	0.00	0.01		0.41	5.64	5.23
FeO	0.00	0.00	0.00		0.02		0.02
MnO	0.00	0.01	0.02	0.31	0.02		0.05
MgO	6.16	0.00	0.02		0.01		7.95
CaO	0.01	0.00	0.00				0.01
Na ₂ O	0.01	0.00	0.00				0.01

K ₂ O total	8.46 100.21	0.00 100.25	0.00 100.41	99.89	100.37	100.81	8.49 100.81
at. %							
Al	31.83	39.73	38.08		39.87	38.45	31.03
Cr	1.43	0.26	1.91		0.11	1.53	1.38
V					0.01	0.01	0.01
Fe					0.01	0.01	0.01
Mn			0.01			0.01	0.01
Mg	3.09		0.01				3.95
Ca							
Na	0.01						0.01
K	3.63						3.61
O	60.01	60.01	59.99		60.00	59.99	59.99
Cr#	0.043	0.007	0.048		0.003	0.038	0.043