

Crystal Data and Results of Refinement for Kurokura Apatite Core and Rim:

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Sample and Crystal Data for Kurokura Core

Chemical formula	$\text{Ca}_{10}(\text{PO}_4)_6(\text{F}_{0.55}\text{OH}_{0.58}\text{Cl}_{0.87})$
Formula weight	1021.80 g/mol
Temperature	293(2) K
Wavelength	0.71073 Å
Crystal system	hexagonal
Space group	P 63/m
Unit cell dimensions	$a = 9.5213(4)$ Å $\alpha = 90^\circ$ $b = 9.5213(4)$ Å $\beta = 90^\circ$ $c = 6.8496(3)$ Å $\gamma = 120^\circ$
Volume	537.76(5) Å ³
Z	1
Density (calculated)	3.155 g/cm ³
Absorption coefficient	3.120 mm ⁻¹
F(000)	507
Theta range for data collection	2.47 to 33.27°
Index ranges	-14 ≤ h ≤ 14, -14 ≤ k ≤ 14, -10 ≤ l ≤ 10
Reflections collected	12047
Independent reflections	733 [R(int) = 0.0249]
Absorption correction	multi-scan
Refinement method	Full-matrix least-squares on F ²
Refinement program	SHELXL-2014/7 (Sheldrick, 2014)
Function minimized	$\sum w(F_o^2 - F_c^2)^2$
Data / restraints / parameters	733 / 0 / 51
Goodness-of-fit on F ²	1.102
Final R indices	730 data; I > 2σ(I) R1 = 0.0158, wR2 = 0.0412 all data R1 = 0.0158, wR2 = 0.0412
Weighting scheme	$w = 1/[\sigma^2(F_o^2) + (0.0174P)^2 + 0.4357P]$ where $P = (F_o^2 + 2F_c^2)/3$
Extinction coefficient	0.1830(50)
Largest diff. peak and hole	0.415 and -0.364 eÅ ⁻³
R.M.S. deviation from mean	0.072 eÅ ⁻³

Sample and Crystal Data for Kurokura Rim

Chemical formula	(PO ₄) ₆ (F _{1.05} OH _{1.02} Cl _{0.04})
Formula weight	1009.34 g/mol
Temperature	293(2) K
Wavelength	0.71073 Å
Crystal system	hexagonal
Space group	P 63/m
Unit cell dimensions	a = 9.4082(9) Å α = 90° b = 9.4082(9) Å β = 90° c = 6.8853(7) Å γ = 120°
Volume	527.80(11) Å ³
Z	1
Density (calculated)	3.176 g/cm ³
Absorption coefficient	3.080 mm ⁻¹
F(000)	501
Theta range for data collection	2.50 to 33.44°
Index ranges	-14 ≤ h ≤ 14, -14 ≤ k ≤ 14, -10 ≤ l ≤ 10
Reflections collected	11718
Independent reflections	726 [R(int) = 0.0098]
Absorption correction	multi-scan
Refinement method	Full-matrix least-squares on F ²
Refinement program	SHELXL-2014/7 (Sheldrick, 2014)
Function minimized	Σ w(F _o ² - F _c ²) ²
Data / restraints / parameters	726 / 0 / 49
Goodness-of-fit on F ²	1.505
Final R indices	720 data; I > 2σ(I) R1 = 0.0143, wR2 = 0.0376 all data R1 = 0.0145, wR2 = 0.0377
Weighting scheme	w = 1/[σ ² (F _o ²) + (0.0097P) ² + 0.3046P] where P = (F _o ² + 2F _c ²)/3
Extinction coefficient	0.0013(7)
Largest diff. peak and hole	0.511 and -0.391 eÅ ⁻³
R.M.S. deviation from mean	0.074 eÅ ⁻³