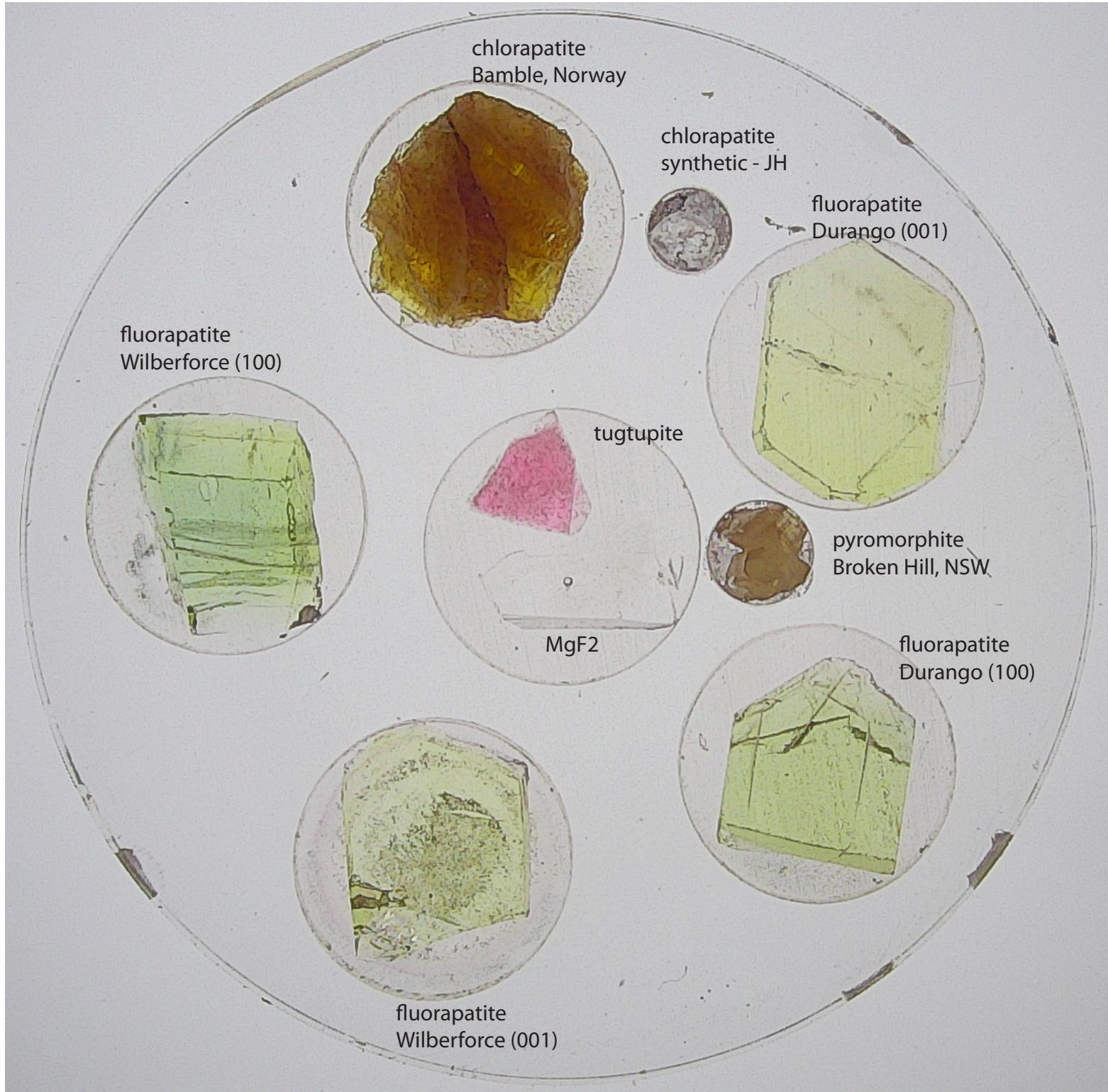


Apatite Standard Block



Use apatite (100) orientations for F-analysis

Apatite block

materials (9)	purity	orientation	person / company	source / notes
chlorapatite			Minerals Unlimited	Bamble, Vestfold og Telemark, Norway
chlorapatite	>99.5?		John Hanchar	synthetic
fluorapatite		⊥ to a	Tysons' Fine Minerals	Wilberforce, Haliburton Co, Ontario; use for F
tugtupite			Attard's Minerals	Ilimaussaq complex, Narsaq commune, Greenland
fluorapatite		⊥ to c	Discovery Gemstones	Cerro de Mercado mine, Durango, Mexico
MgF ₂	99.99		J.Duke / Sigma-Aldrich	378836 Lot 08719TA, synthetic
pyromorphite			Micro-Analysis Consultants	Broken Hill, NSW, Australia; #14211
fluorapatite		⊥ to c	Tysons' Fine Minerals	Wilberforce, Haliburton Co, Ontario
fluorapatite		⊥ to a	Discovery Gemstones	Cerro de Mercado mine, Durango, Mexico; use for F

	<i>Chlorapatite</i>	[17]	<i>Tugtupite</i>	<i>Pyromorphite</i>	
<i>Bamble</i>		ideal		<i>Broken Hill</i>	
<i>n=68</i>	>0.1 wt%	SiO₂	51.38	<i>PbO</i>	82.13
<i>CaO</i>	52.39	Al₂O₃	10.90	<i>P₂O₅</i>	15.82
<i>P₂O₅</i>	40.92	BeO	5.35	<i>CaO</i>	0.20
<i>Na₂O</i>	0.41	Na₂O	26.50	<i>Cl</i>	2.26
<i>MgO</i>	0.25	Cl	7.58	<i>H₂O calc</i>	0.10
<i>Y₂O₃</i>	0.56	O=Cl	-1.71	O=Cl	-0.51
<i>La₂O₃</i>	0.11	total	100.00	<i>total</i>	100.00
<i>Ce₂O₃</i>	0.32				
<i>Nd₂O₃</i>	0.22	[123]		Fluorapatite	
<i>Gd₂O₃</i>	0.10	Young et al. 1969			
<i>SO₃</i>	0.10	Durango	>0.1 wt%		
<i>F</i>	0.19	CaO	54.02		
<i>Cl</i>	6.07	P₂O₅	40.78		
<i>H₂O calc</i>	0.10	Na ₂ O	0.23		
<i>O=F,Cl</i>	-1.45	La ₂ O ₃	0.54		
<i>total</i>	100.29	Ce ₂ O ₃	0.62		
		Nd ₂ O ₃	0.20		
[121]	Chlorapatite		SiO ₂	0.34	
	synthetic		SO ₃	0.37	
	CaO	F*	3.53		
	P ₂ O ₅	Cl	0.41		
	Cl	O=F,Cl	-1.58		
	O=Cl	total	99.53		
	<i>total</i>	100.00			
[11]	Fluorapatite		[95]		MgF₂
	synthetic		synthetic		
	C.M. Taylor	Mg	39.01	MgO	64.69
	Wilberforce	>0.1 wt%	F	F	60.99
	CaO	54.48	total	O=F	-25.68
	P₂O₅	40.93		total	100.00
	Na ₂ O	0.24			
SrO	0.46				
La ₂ O ₃	0.14				
Ce ₂ O ₃	0.31				
Nd ₂ O ₃	0.17				
SiO ₂	0.13	[xyz] Probe-for-EPMA Standard database number			
SO ₃	0.65				
F*	3.70	* Use apatite (100) orientation for F-analysis			
O=F,Cl	-1.56	<i>Italics - tentative composition</i>			
<i>total</i>	99.65	Bold - most reliable for natural material			