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**QUADRO 1: COMPOSIÇÃO QUÍMICA DOS FOSFATOS DA REGIÃO DE GALILÉIA (MG).**

Alluaudita – $\text{NaMn}^{2+}\text{Fe}^{3+}_2(\text{PO}_4)_3$	Frondelita – $\text{Mn}^{2+}\text{Fe}^{3+}_4(\text{PO}_4)_3(\text{OH})_5$	Robertsita – $\text{Ca}_2\text{Mn}^{3+}_3(\text{PO}_4)_3\text{O}_2 \cdot 3\text{H}_2\text{O}$
Amblygonita – $(\text{Li},\text{Na})\text{Al}(\text{PO}_4)(\text{F},\text{OH})$	Gordonita – $\text{MnAl}_2(\text{PO}_4)_2(\text{OH})_2 \cdot 8\text{H}_2\text{O}$	Rockbridgeíta – $\text{Fe}^{2+}\text{Fe}^{3+}_4(\text{PO}_4)_3(\text{OH})_5$
Arrojadita – $\text{KNa}_4\text{Ca}(\text{Fe}^{2+},\text{Mn}^{2+})_{14}\text{Al}(\text{PO}_4)_{12}(\text{OH},\text{F})_2$	Gormanita – $\text{Fe}^{2+}_3\text{Al}_4(\text{PO}_4)_4(\text{OH})_6 \cdot 2\text{H}_2\text{O}$	Reddingita – $\text{Mn}^{2+}\text{Mn}^{2+}_2(\text{PO}_4)_2(\text{H}_2\text{O})$
Augelita – $\text{Al}_2(\text{PO}_4)(\text{OH})_3$	Graftonita – $(\text{Fe}^{2+},\text{Mn}^{2+},\text{Ca})_3(\text{PO}_4)_2$	Roscherita – $\text{CaMn}^{2+}\text{Fe}^{3+}\text{Be}_3(\text{PO}_4)_3(\text{OH})_4 \cdot 2\text{H}_2\text{O}$
Autunita – $\text{Ca}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10\text{-}12\text{H}_2\text{O}$	Greifensteinita – $\text{Ca}_2\text{Be}_4(\text{Fe}^{2+},\text{Mn})_5(\text{PO}_4)_6(\text{OH})_4 \cdot 6\text{H}_2\text{O}$	Sabugalita – $\text{H}_{0,5}\text{Al}_{0,5}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$
Barbosalita – $\text{Fe}^{2+}\text{Fe}^{3+}_2(\text{PO}_4)_2(\text{OH})_2$	Heterosita – $\text{Fe}^{3+}\text{PO}_4$	Saleeíta – $\text{Mg}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10\text{H}_2\text{O}$
Beraunita – $\text{Fe}^{2+}\text{Fe}^{3+}_5(\text{PO}_4)_4(\text{OH})_5 \cdot 4\text{H}_2\text{O}$	Hidroxiherderita – $\text{CaBe}(\text{PO}_4)(\text{OH})$	Sarcopsídeo – $\text{Fe}_3(\text{PO}_4)_2$
Berillonita – $\text{NaBePO}_4$	Huréaulita – $\text{Mn}^{2+}_5(\text{PO}_4)_2[\text{PO}_3(\text{OH})]_2 \cdot 4\text{H}_2\text{O}$	Scorzalita – $(\text{Fe}^{2+},\text{Mg})\text{Al}_2(\text{PO}_4)_2(\text{OH})_2$
Berlinita – $\text{AlPO}_4$	Jahnsita (grupo) –	Souzalita – $\text{Mg}_3\text{Al}_4(\text{PO}_4)_4(\text{OH})_6 \cdot 2\text{H}_2\text{O}$
Bermanita – $\text{Mn}^{2+}\text{Mn}^{3+}_2(\text{PO}_4)_2(\text{OH})_2 \cdot 4\text{H}_2\text{O}$	$\text{CaMn}^{2+}(\text{Fe}^{2+}_2,\text{Mg}^{2+}_2,\text{Mn}^{2+}_2)\text{Fe}^{3+}_2(\text{PO}_4)_4(\text{OH})_2 \cdot 8\text{H}_2\text{O}$	Strengita – $\text{Fe}^{3+}\text{PO}_4 \cdot 2\text{H}_2\text{O}$
Brazilianita – $\text{NaAl}_3(\text{PO}_4)_2(\text{OH})_4$	Jonhsomervilleíta – $\text{Na}_2\text{Ca}(\text{Mg},\text{Fe}^{2+},\text{Mn})_7(\text{PO}_4)_6$	Strunzita – $\text{Mn}^{2+}\text{Fe}^{3+}_2(\text{PO}_4)_2(\text{OH})_2 \cdot 6\text{H}_2\text{O}$
Cacoxenita – $\text{AlFe}^{3+}(\text{PO}_4)_{17}\text{O}_6(\text{OH})_{12} \cdot \approx 75\text{H}_2\text{O}$	Lazulita – $\text{MgAl}_2(\text{PO}_4)_2(\text{OH})_2$	Tavorita – $\text{LiFe}^{3+}\text{PO}_4(\text{OH},\text{F})$
Carbonato-hidroxiapatita – $\text{Ca}_5(\text{PO}_4)_3(\text{CO}_3)(\text{OH},\text{F})$	Laueíta – $\text{Mn}^{2+}\text{Fe}^{3+}_2(\text{PO}_4)_2(\text{OH})_2 \cdot 8\text{H}_2\text{O}$	Trifilita – $\text{LiFe}^{2+}\text{PO}_4$
Childrenita – $\text{Fe}^{2+}\text{Al}(\text{PO}_4)(\text{OH})_2 \cdot \text{H}_2\text{O}$	Leucofosfita – $\text{KFe}^{3+}(\text{PO}_4)_2(\text{OH}) \cdot 2\text{H}_2\text{O}$	Triplita – $(\text{Mn}^{2+},\text{Fe}^{2+})_2(\text{PO}_4)\text{F}$
Cyrllovita – $\text{NaFe}^{3+}_3(\text{PO}_4)_2(\text{OH})_4 \cdot 2\text{H}_2\text{O}$	Lipscombita – $\text{Fe}^{2+}\text{Fe}^{3+}_2(\text{PO}_4)_2(\text{OH})_2$	Variscita – $\text{AlPO}_4 \cdot 2\text{H}_2\text{O}$
Dufrénita – $\text{CaFe}^{2+}_2\text{Fe}^{3+}_{10}(\text{OH})_{12}(\text{PO}_4)_8 \cdot 4\text{H}_2\text{O}$	Litiofilita – $\text{LiMn}^{2+}\text{PO}_4$	Vivianita – $\text{Fe}^{2+}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$
Eosforita – $\text{MnAl}(\text{PO}_4)(\text{OH})_2 \cdot \text{H}_2\text{O}$	Ludlamita – $\text{Fe}_3(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$	Wardita – $\text{NaAl}_3(\text{PO}_4)_2(\text{OH})_4 \cdot 2\text{H}_2\text{O}$
Faheyíta – $(\text{Mn}^{2+},\text{Mg})\text{Fe}^{3+}_2\text{Be}_2(\text{PO}_4)_4 \cdot 6\text{H}_2\text{O}$	Messelita – $\text{Ca}_2(\text{Fe}^{2+},\text{Mn}^{2+})(\text{PO}_4)_2 \cdot 2\text{H}_2\text{O}$	Whiteíta-(MnFeMg) –
Ferrisicklerita – $\text{Li}(\text{Fe}^{3+},\text{Mn}^{2+})\text{PO}_4$	Meurigita – $\text{KFe}^{3+}_7(\text{PO}_4)_5(\text{OH})_7 \cdot 8\text{H}_2\text{O}$	$\text{Mn}^{2+}\text{Fe}^{2+}\text{Mg}_2\text{Al}_2(\text{PO}_4)_4(\text{OH})_2 \cdot 8\text{H}_2\text{O}$
Fluorapatita – $\text{Ca}_5(\text{PO}_4)_3\text{F}$	Mitriadita – $\text{Ca}_2\text{Fe}^{3+}_3(\text{PO}_4)_3\text{O}_2 \cdot 3\text{H}_2\text{O}$	Wolfeíta – $\text{Fe}^{2+}_2(\text{PO}_4)$
Fosfoferrita – $\text{Fe}^{2+}\text{Fe}^{2+}_2(\text{PO}_4)_2 \cdot 3\text{H}_2\text{O}$	Montebrasita – $(\text{LiNa})\text{AlPO}_4(\text{OH},\text{F})$	Wyllieíta – $\text{Na}_2(\text{Mg},\text{Fe})_2\text{Al}(\text{PO}_4)_3$
Fosfosiderita – $\text{Fe}^{3+}\text{PO}_4 \cdot 2\text{H}_2\text{O}$	Moraesita – $\text{Be}_2(\text{PO}_4)(\text{OH}) \cdot 4\text{H}_2\text{O}$	Zanaziíta –
Fosfuranilita – $\text{KCa}(\text{H}_3\text{O})_3(\text{UO}_2)_7(\text{PO}_4)_4\text{O}_4 \cdot 8\text{H}_2\text{O}$	Purpurita – $\text{Mn}^{3+}\text{PO}_4$	$\text{Ca}_2(\text{Mg},\text{Fe}^{2+})(\text{Mg},\text{Fe}^{2+},\text{Al})_4\text{Be}_4(\text{PO}_4)_6(\text{OH}) \cdot 6\text{H}_2\text{O}$

Tabela 4: Análises químicas (% em peso) representativas de apatita (fluorapatita), coutinhoíta e stokesita amostradas na Lavra do Urucum, Galiléia. Análises 1-4, apatita (dos autores); análises 5-8, coutinhoíta (dos autores); análises 9-10, stokesita segundo Couper & Clark (1977); análises comparativas 11-14, stokesita de Cornwall, localidade-tipo do mineral (Inglaterra), segundo Couper & Clark (1977). \*Calculado para 100% pela água, n.d. = não determinado.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SiO <sub>2</sub>	0,00	0,00	0,00	0,00	27,54	28,84	27,99	29,40	42,54	43,34	42,89	43,72	43,31	43,13
SnO <sub>2</sub>	---	---	---	---	---	---	---	---	35,54	35,77	35,79	32,08	33,33	35,35
FeO	0,01	0,00	0,02	0,06	---	---	---	---	0,04	0,04	0,00	1,74	0,43	0,09
MnO	1,46	0,38	1,74	1,70	---	---	---	---	0,52	0,63	0,00	0,26	0,99	0,17
CaO	52,67	53,79	50,70	52,29	0,24	0,25	0,23	0,27	12,46	12,45	12,86	13,24	13,00	12,69
K <sub>2</sub> O	---	---	---	---	0,32	0,22	0,33	0,32	---	---	---	---	---	---
BaO	0,01	0,00	0,00	0,00	2,75	2,61	2,87	2,77	---	---	---	---	---	---
Al <sub>2</sub> O <sub>3</sub>	(traços)	0,00	0,00	0,00	---	---	---	---	---	---	---	---	---	---
SrO	2,24	0,74	2,76	1,40	---	---	---	---	---	---	---	---	---	---
ThO <sub>2</sub>	---	---	---	---	9,89	6,58	8,64	7,37	---	---	---	---	---	---
UO <sub>3</sub>	---	---	---	---	54,35	55,59	54,64	54,28	---	---	---	---	---	---
P <sub>2</sub> O <sub>5</sub>	42,62	43,32	42,51	42,33	0,85	0,50	0,64	0,46	---	---	---	---	---	---
F	4,08	3,81	4,57	4,52	---	---	---	---	---	---	---	---	---	---
Cl	0,01	0,01	0,02	0,01	---	---	---	---	---	---	---	---	---	---
H <sub>2</sub> O	n.d.	n.d.	n.d.	n.d.	4,05	5,41	4,68	5,13	8,90	7,77	8,46	8,96	8,94	8,57
Total	98,83	100,43	100,39	100,44	99,79	100,00	100,02	100,00	99,54	100*	100*	100*	100*	100*





Tabela 2A: Relação alfabética das espécies minerais fosfáticas encontradas em pegmatitos representativos da região de Galiléia (lavras 1 até 8), em comparação com os pegmatitos da área próxima, entre Divino das Laranjeiras e Mendes Pimentel (lavras 9 até 13). (Observação: A relação continua na Tabela 2B).

LAVRAS	Alluaudita	Amblygonita	Arrojadita	Augelita	Autunita	Barbosalita	Beraunita	Berillonita	Berlinita	Bermanita	Brazilianita	Cacoxenita	Carb-hidroxiapatita	Childrenita	Cyrllovita	Dufrenita	Eosforita	Faheyita	Ferrisicklerita	Fluorapatita	Fosfoferrita	Fosfoderita	Fosfuranilita	Frondelita	Gordonita	Gormanita	Graftonita	Greifensteinita	Heterosita	Hidroxiherderita	Hureaulita	Jahnsita		
1 – Sapucaia			x	x	x	x			x	x		x		x	x	x		x	x	x		x	x	x	x				x	x	x	x		
2 – Boca Rica					x	x						x				x	x		x	x		x		x		x					x			
3 – Proberil		x?					x												x										x					
4 – Boa Vista 1	x	x?	x					x						x	x					x	x	x	x				x	x	x	x				
5 – Alto da Pitôrra																																		
6 – Urucum/GEOM.					x															x		x	x											
7 – Orozimbo																				x?														
8 – Cigana								x		x		x	x			x						x												
9 – Córrego Frio							x				x					x				x				x		x								x
10 – Telório								x			x					x			x	x		x	x	x		x				x				
11 – Gentil						x										x				x		x		x		x			x					
12 – Piano											x	x				x				x											x			
13 – João Firmino					x						x					x				x		x		x		x					x			

Tabela 1: Análises químicas comparativas (% em peso) sobre minerais fosfáticos selecionados da região de Galiléia. Minerais – 1) Arrojadita, 2) Barbosalita, 3) Childrenita-eosforita, 4) Faheyíta, 5) Frondelita, 6) Huréaulita, 7) Leucofosfita, 8) Lipscombite, 9) Montebrasita, 10) Moraesita, 11) Purpurita, 12) Roscherita, 13) Tavorita, 14) Trifilita. Lavras – (a) Sapucaia, (b) Boa Vista 1/Ênio, (c) Boca Rica, (d) Cigana, (e) Piano. Fontes – 1a, 2a, 4a, 5a, 6a, 7a, 8a, 9a, 10a, 12a, 14a (Lindberg & Pecora, 1958; Cassedanne & Baptista, 1999); 3b, 9b, 12b, 15b (Correia-Neves et al., 1980), 3e, 5c, 5d, 6c, 11c, 14e, dos autores. \*Calculado para 100%, \*\*Análises com microsonda eletrônica (médias de 8 pontos em cada), n.d. = não determinado.

	1		2		3		4		5		6		7		8		9		10		11		12		13		14		
	(a)	(a)	(b)	(e)**	(a)	(a)	(c)**	(d)**	(a)	(c)**	(a)	(a)	(a)	(b)	(a)	(c)**	(a)	(b)	(a)	(a)	(b)	(a)	(a)	(b)	(a)	(a)	(b)	(e)**	
<b>Al<sub>2</sub>O<sub>3</sub></b>	2,23	---	19,30	22,80	0,10	1,31	0,00	traços	---	0,00	0,25	---	35,50	34,60	0,00	0,00	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>BaO</b>	1,50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>BeO</b>	---	---	---	---	7,26	---	---	---	---	---	---	---	---	---	25,28	---	12,58	12,60	---	---	---	---	---	---	---	---	---	---	---
<b>CaO</b>	2,57	13,10	1,60	0,43	---	traços	0,29	0,33	---	0,92	---	---	---	---	---	0,29	7,60	10,40	---	---	---	---	---	---	---	---	---	0,01	
<b>FeO</b>	17,60	41,65	16,50	10,17	0,00	0,00	---	---	18,02	9,06	0,00	3,75	---	---	---	41,47	6,26	15,74	2,39	29,58	37,17	32,90	---	---	---	---	---	---	
<b>Fe<sub>2</sub>O<sub>3</sub></b>	1,70	---	---	1,00	21,42	48,85	55,50	40,72	---	---	41,02	50,45	0,28	---	0,11	---	13,36	---	42,57	---	---	---	---	---	---	---	---	---	
<b>K<sub>2</sub>O</b>	0,58	---	0,05	---	0,00	0,12	0,00	0,01	---	0,00	10,93	---	---	---	---	2,78	---	---	---	---	---	---	---	---	---	---	---	traços	
<b>Li<sub>2</sub>O</b>	0,70	---	---	---	---	---	---	---	---	---	---	---	10,11	10,30	---	---	---	---	7,64	9,33	8,07	9,48	---	---	---	---	---	---	
<b>MgO</b>	6,78	2,82	1,00	0,01	1,14	0,20	0,21	0,05	1,73	0,12	---	---	---	---	---	0,68	---	---	---	1,12	2,90	1,51	---	---	---	---	---	---	
<b>MnO</b>	14,60	---	16,10	18,21	5,99	7,74	5,62	10,71	27,57	37,84	---	7,91	---	---	---	16,62	10,04	1,81	1,47	14,55	8,65	9,53	---	---	---	---	---	---	
<b>Mn<sub>2</sub>O<sub>3</sub></b>	---	---	---	---	0,00	1,75	---	---	---	---	0,57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
<b>Na<sub>2</sub>O</b>	4,54	---	0,08	0,07	0,84	0,98	0,34	0,02	---	0,00	0,53	---	0,14	0,02	---	0,17	---	---	---	0,08	0,07	0,01	---	---	---	---	---	---	
<b>PbO</b>	4,42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
<b>SrO</b>	0,34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
<b>TiO<sub>2</sub></b>	---	---	0,10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>ZnO</b>	0,20	---	---	---	---	---	---	---	0,14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
<b>F</b>	---	---	---	---	0,00	---	---	---	---	0,05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
<b>H<sub>2</sub>O</b>	n.d.	4,93	15,95	16,04	14,90	7,52	n.d.	15,85	12,46	n.d.	11,20	4,45	5,70	6,30	39,80	n.d.	11,56	13,06	6,16	0,20	0,00	n.d.	---	---	---	---	---	---	
<b>P<sub>2</sub>O<sub>5</sub></b>	40,60	37,50	29,00	31,26	38,11	31,28	29,74	32,27	39,37	41,93	34,71	33,37	48,14	47,90	34,76	36,84	37,60	37,50	39,78	45,16	43,40	47,20	---	---	---	---	---	---	
<b>SiO<sub>2</sub></b>	0,00	---	0,10	---	---	---	0,53	---	---	---	---	---	---	---	---	0,77	---	---	---	---	---	---	---	---	---	---	---	---	
<b>Insol.</b>	---	---	---	---	9,44	0,32	---	---	---	---	0,45	---	---	---	0,30	---	0,80	---	---	---	---	---	---	---	---	---	---	---	
<b>Total</b>	98,35	100*	99,68	99,99	99,20	100,1	92,23	100*	99,29	89,92	99,66	99,93	99,87	99,56	100,2	99,62	99,80	100,0	100,0	100,0	100,0	100,6	100*	---	---	---	---	---	