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A nickel-bearing aluminium serpentine (septechlorite) from Western Australia: Discussion

AN attempt to index the data of Riley (1975) based upon a serpentine cell was unsuccessful. However, these data are similar to that of clinochlore (PDF 26-1211) of Chernosky (1974). The unit cell was refined with the least-squares programme of Appleman *et al.* (1972) and determined to be $a = 5.340(3)$, $b = 9.270(6)$, $c = 14.32(1)$ Å and $\beta = 97°\,03'(3)$ in space group *C2/m*. The *hkl*, *d* calculated, *d* observed, and relative intensities (I/I_1) are presented in Table I.

Therefore the formula may be written $(Mg_{2.07}Ni_{1.28}Fe^{2+}_{0.70}Fe^{3+}_{1.13}Al_{0.49})(Si_{3.06}Al_{0.94})O_{10}(OH)_8$. Based on the nomenclature of Bayliss (1975), it may be called a nickeloan clinochlore.

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TABLE I. *X-ray powder data for nickeloan clinochlore*

hkl	d_{calc}	d_{obs}	I/I_1	*hkl*	d_{calc}	d_{obs}	I/I_1	*hkl*	d_{calc}	d_{obs}	I/I_1
002	7.108 Å	7.120 Å	100	$\bar{2}06$	1.885 Å	1.886 Å	10	402	1.275 Å	1.275 Å	10
003	4.738	4.750	90	205	1.830	1.823	10	422	1.229	1.227	10
020	4.635	4.605	10	$\bar{3}11$	1.748	1.747	10	0.0.12	1.185	1.185	10
004	3.554	3.556	90	206	1.667	1.670	20	$\bar{2}.0.12$	1.135	1.135	10
005	2.843	2.834	10	$\bar{2}08$	1.567	1.568	10	406	1.100	1.100	10
$\bar{2}01$	2.664	2.658	60	060	1.545	1.544	70	0.6.10	1.046	1.045	20
$\bar{2}02$	2.589	2.579	30	062	1.510	1.510	40	$\bar{4}60$	1.006	1.006	10
201	2.549	2.548	30	063	1.469	1.470	20	$\bar{4}64$	0.992	0.993	10
202	2.389	2.393	80	064	1.417	1.417	30	0.6.12	0.940	0.940	10
$\bar{2}04$	2.261	2.265	20	$\bar{4}02$	1.332	1.333	20	$\bar{2}.6.12$	0.914	0.914	10
007	2.031	2.027	50	400	1.325	1.323	20				
204	2.009	2.008	50	$\bar{4}04$	1.294	1.295	10				

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