

substance: Mn₃O₄

property: lattice parameters

lattice parameters of the low-temperature phase

<i>a</i>	5.753 Å	RT	for relationship between tetragonal and cubic spinel unit cells, see [74N]	58H
<i>c</i>	9.422 Å			
<i>a</i>	5.747 Å	RT		66R
<i>c</i>	9.433 Å			
<i>a</i>	5.71 Å	RT		74J
<i>c</i>	9.35 Å			
<i>a</i>	5.763 Å	RT		71B
<i>c</i>	9.456 Å			
<i>a</i>	5.76 Å	RT		61S
<i>c</i>	9.46 Å			
<i>a</i>	5.756 Å	<i>T</i> = 4.2 K		71B
<i>c</i>	9.439 Å			
<i>a</i>	5.756 Å	<i>T</i> = 77 K		
<i>c</i>	9.439 Å			
<i>a</i>	5.768 Å	<i>T</i> = 300 K		
<i>c</i>	9.456 Å			
<i>a</i>	5.76 Å	<i>T</i> = 523 K		
<i>c</i>	9.45 Å			
<i>a</i>	5.76 Å	<i>T</i> = 723 K		
<i>c</i>	9.47 Å			
<i>a</i>	5.77 Å	<i>T</i> = 923 K		
<i>c</i>	9.49 Å			
<i>a</i>	5.78 Å	<i>T</i> = 1073 K		
<i>c</i>	9.50 Å			
<i>a</i>	5.80 Å	<i>T</i> = 1273 K		
<i>c</i>	9.49 Å			
<i>a</i>	5.81 Å	<i>T</i> = 1433 K		
<i>c</i>	9.46 Å			
<i>d</i> (M–O)	1.88 Å	in <i>c</i> -plane <i>c</i> -axis mean value of both values in regular tetrahedral sites	local symmetry at M ₁ is tetragonal	61S
	2.28 Å			
	2.02 Å			
	2.07 Å			
δ	0.0083 (15)		for definition, see Fig. 1 for definition. see Fig. 1	61S
ε	0.0320 (27)			

lattice parameter of the high-temperature phase

<i>a</i>	8.55 Å	<i>T</i> = 1170 °C	58H
	8.56 Å	<i>T</i> = 1200 °C	
	8.57 Å	<i>T</i> = 1270 °C	
	8.68 Å	<i>T</i> = 1270 °C	67D
	8.64 Å	<i>T</i> = 1270 °C	50M

References:

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- 58H van Hook, H. J., Keith, M. L.: Am. Mineral. 43 (1958) 69.
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- 66R Rozhdestvenskaya, M. V., Mokievskii, V. A., Stogova, V. A.: Kristallografiya 11 (1966) 903.
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Fig. 1.

Mn_3O_4 . Arrangement of the axis and its displacements in the tetragonal phase ($T < 1170^\circ\text{C}$) [61S].

