substance: Nb_2O_5
property: crystal structure, lattice parameters, density of TT-Nb_2O_5

crystal structure: Little seems to be known about this form save that it is apparently stabilized by impurities. Two different structures have been proposed:

"pseudohexagonal": a = 3.607 Å, c = 3.925 Å, Z = 0.5, d_{calc} = 4.99 g cm^{-3} (RT values) [66S].

monoclinic: a = 7.23 Å, b = 15.7 Å, c = 7.18 Å, β = 119º5', V = 711 $Å^3$, Z = 8 (RT values) [72K].

Tentative phase diagram for the Nb (v) oxides, Fig. 1 [72K].

References:

66S Schäfer, H., Gruehn, R., Schultz, F.: Angew. Chem. Int. Ed. Engl. 5 (1966) 40.
72K Kodoma, H., Kikuchi, T., Goto, M.: J. Less-Commun. Met. 29 (1972) 415.

Fig. 1.

Nb_2O_5. (a) A free energy-temperature diagram for four modifications. (b) A pressure-temperature diagram for the four modifications [72K].