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The telluridogallates REGaTe2 (RE = La −Nd)

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Starting from the elements, the new compounds with the composition REGaTe2 (RE = La - Nd) could be obtained, which crystallize in the non-centrosymmetric space group Pmc21. As a possible unique feature, the presence of monovalent Ga atoms can be found for these compounds, resulting in a description of these compounds according to RE(III)Ga(I)Te(-II)2. For this an investigation of the bond valence sums was carried out, which suggests the above distribution of oxidation states. Due to the relatively short atomic distances between the Ga and Te atoms, this compound can be understood as consisting of chain-like built-up polyanions [Ga(2-)Te(0)Te(1-)]3-, taking into account the Zintl concept.

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