Crystal Packing of Three-Aqua Sodium Maleate

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Three-Aqua Sodium Maleate was crystallized as a side product in the process of the synthesis of the manganese complexes with mixed ligands [1]. The crystal of NaC₄H₉O₇ belongs to the space group P-1 with unit cell parameters a = 5.9609(14) Å, b = 6.3907(16) Å, c = 11.2308(27) Å, $\alpha = 104.178(4)^{\circ}$, $\beta = 91.574(4)^{\circ}$, $\gamma = 100.241(4)^{\circ}$ and $D_x = 1.567 \text{ Mgm}^{-3}$ for Z = 2. The maleate monoanion is the ligand bonded through an oxygen atom to the Na⁺ ion. The intramolecular O-H..O hydrogen bond in the maleate monoanion was analysed and compared with literature data [2,3]. The central Na atom is surrounded by six oxygen atoms and forms an octahedral polyhedron with the shape of a deformed quadratic bipyramid. Molecules built in this manner form a polymerized infinite chain along the *a* crystallographic axis. Maleate monoanions alternate with Na ion chains and form a layer in the *ac* crystallographic plane. Viewed along the *a* axis, the packing shows that two chains are related by the inversion center, so that they form a channel along the crystallographic *a* axis.

Stamenković J., Cakić S.,Nikolić G., Chemical Industry, 2003, **57**, 559. [2]
James M.N.G., Williams G.J.B., Acta Crystallogr., 1974, **B30**, 1249. [3]
James M.N.G., Williams G.J.B., Acta Cryst., 1974, **B30**, 1257.

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