

GLYCINE METAL HALOGENIDES: AN OVERVIEW

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In the course of our studies of structural and physical aspects of compounds of inorganic salts with glycine we turned to the group of glycine metal halogenides. 22 structurally investigated members were found in the literature (e.g., [1], [2], [3]), four more are presented in this contribution (GlycineMgCl₂·4H₂O, *Pnma*; Glycine₂NiBr₂·2H₂O, *P 2₁/c*; Glycine₃CeCl₃, *P2₁2₁2₁*; GlycineCaI₂, *Pca2₁*). In addition, the structures of three glycinium halogenides have been published.

Of special interest are the structural aspects of this group: The different co-ordination patterns of the metal cations (both oxygen atoms of water molecules or carboxylate groups as well as halogen atoms can act as ligands) on one hand and the connection of the polyhedra by means of glycine molecules and hydrogen bonds on the other hand are of importance. As far as these aspects are concerned, the members of this group show a large diversity. Furthermore, it is noteworthy that nine out of 29 glycine metal halogenides are non-centrosymmetrical – a high percentage, since glycine as the only non-chiral amino acid does not enforce non-centrosymmetrical crystal structures as all other amino acids do.

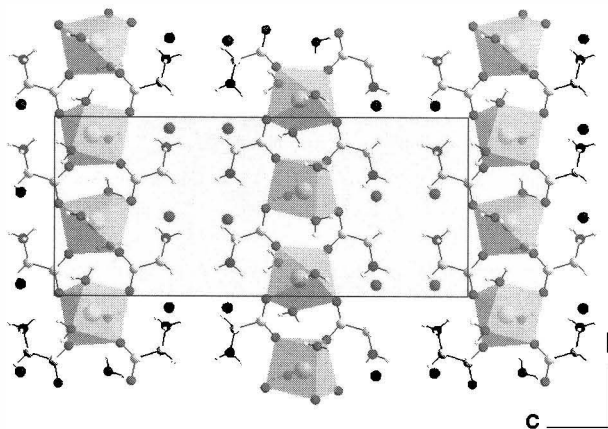


Fig. 1. GlycineCaI₂ (*Pca2₁*) is an example of a new, polar crystal species. The structure contains infinite chains parallel [010]. The chains are constituted by CaO₇-polyhedra, that are connected by two glycine molecules.

References

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