

MS32-02 | INTERACTIONS INVOLVING 13-17 GROUPS' ELEMENTS ACTING AS THE LEWIS ACID CENTRES – COMPARISON WITH THE HYDROGEN BOND

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The elements of 14th-17th Groups are often characterized by areas of positive electrostatic potential and they act as the Lewis acid centres in interactions labelled as the σ -hole bonds [1]. Numerous elements in planar molecular fragments may also act as the Lewis acid centres through π -holes. In general, π -hole bonds are the corresponding interactions, while these are triel bonds for 13th Group elements) [2]. The above mentioned interactions possess numerous properties similar to those of the hydrogen bond; there is the electron charge transfer from the Lewis base unit to the Lewis acid one. The centre that is characterized by σ -hole or π -hole losses its electron charge as a result of complexation. The strength of these interactions, including hydrogen bonds, increases if the distance between Lewis acid - Lewis base units decreases; the latter effect is connected with the increase of the covalent character of interaction and with the increase of polarization effects. The mechanisms of these interactions are the same or at least they are very similar one to each other. It is important that structural motifs in crystals of species linked by these interactions are also very similar between themselves [2,3].

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