

# Preparation of Geminal Donor-Acceptor Units by Reactions of Low Valent Metal Halides with Iminium Chlorides

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The organogallium compound [ $\{\text{Me}_2\text{NCH}_2\text{Ga}(\text{Cl},\text{I})_2\}_2$ ] (**1**) and the organoindium compounds [ $\text{Me}_2\text{NCH}_2\text{In}(\text{Cl},\text{Br})_2$ ]<sub>2</sub> (**2**) and [ $\text{Me}_2\text{NCH}_2\text{InCl}_2$ ]<sub>2</sub> (**3**) have been prepared by the reactions of the low valent metal halides “GaI”, InBr and InCl with the iminium salt [ $\text{Me}_2\text{N}=\text{CH}_2$ ] $\cdot\text{Cl}$ . Compounds **1** and **2** are heterohalogen mixtures. These compounds were characterised by NMR spectroscopy and mass spectrometry, **1** furthermore by single crystal X-ray diffraction and **3** by elemental analysis. During the work-up procedure, minor amounts of hydrogen halide adducts of compounds **2** and **3** were isolated as single crystals, which contain a further equivalent of THF. These zwitter-ionic species  $\text{Me}_2\text{N}(\text{H})\text{CH}_2\text{In}(\text{Br},\text{Cl})_3\cdot\text{THF}$  (**2**·H(Cl,Br)·THF) and  $\text{Me}_2\text{N}(\text{H})\text{CH}_2\text{InCl}_3\cdot\text{THF}$  (**3**·HCl·THF) were identified by single crystal X-ray diffraction. Methylation reactions of compounds **1** and **2** with MeLi gave two well-established compounds [ $\{\text{Me}_2\text{NCH}_2\text{GaMe}_2\}_2$ ] and [ $\{\text{Me}_2\text{NCH}_2\text{InMe}_2\}_2$ ], which were obtained previously by different preparation procedures.

**Key words:** Iminium Salts, Geminal Systems, Metallated Amines, Gallium, Indium