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Purification of Pb-16Li breeder from corrosion products

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This contribution provides summary of two purification experiments of liquid metal breeder Pb-16Li by a cold trap. The behavior of artificially added impurities were studied in non-isothermal ferritic loop Meliloo v1. During these experiments a Mn concentrations followed the solubility curve as published by Barker. More advanced trap design was tested in austenitic loop Meliloo v2. This trap was analyzed for deposits distribution over the internal surfaces using SEM. Large Fe-Cr-Mn-Ni particles and Ni-Mn, Ni-Mn-Sn intermetallic phases were found on the cooled wall, while deposits of Bi oxides were found on the non-cooled internals. The SEM images of typical deposits are presented in the contribution along with the location where they were found.

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