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Sm7F12Cl2: Synthesis and Crystal Structure of a New Fluoride-Rich Samarium(II) Fluoride Chloride

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Red rod-shaped single crystals of $Sm_7F_{12}Cl_2$ (CSD-2126941) with a length up to 0.3 mm were obtained after heating up a mixture of Sm, SmF_3 and NaCl (as flux) in a sealed niobium capsule to 850 °C and cooling down the product with 5 °C/h after four days.
$Sm_7F_{12}Cl_2$ crystallizes in the $Ba_7F_{12}Cl_2$-type structure with a = 1004.52(7) pm, c = 394.75(3) pm and Z = 1 (space group: P-6) analogous to $Eu_7F_{12}Cl_2$.

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