

# Synthesis and Crystal Structure of $M([12]\text{crown-4})_2\text{O}_3 \cdot 1.5 \text{NH}_3$ with $M = \text{K, Rb}$

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*Dedicated to Professor Hubert Schmidbaur on the occasion of his 75<sup>th</sup> birthday*

The two new ozonide compounds  $\text{K}([12]\text{crown-4})_2\text{O}_3 \cdot 1.5 \text{NH}_3$  (**1**) and  $\text{Rb}([12]\text{crown-4})_2\text{O}_3 \cdot 1.5 \text{NH}_3$  (**2**) were synthesized from the binary alkali metal ozonides and [12]crown-4 in liquid ammonia. The air- and temperature-sensitive red, needle-shaped compounds crystallize isostructurally in the non-centrosymmetric space group *Fdd2* (no. 43) with 16 formula units per unit cell. The lattice parameters are  $a = 26.917(8)$ ,  $b = 43.25(1)$ ,  $c = 7.823(2)$  Å,  $V = 9108(5)$  Å<sup>3</sup>; and  $a = 26.730(6)$ ,  $b = 44.70(1)$ ,  $c = 7.739(2)$  Å,  $V = 9245(4)$  Å<sup>3</sup> for **1** and **2**, respectively. The structure comprises rod-like  $[(M([12]\text{crown-4})_2(\text{NH}_3)]\text{O}_3)_2(\text{NH}_3)]$  supramolecular units, forming a fishbone pattern parallel to (001). The ozonide anions are separated from the metal cations and interact only weakly with two ammonia molecules *via* N–H···O hydrogen bonds.

*Key words:* Ionic Ozonides, Hydrogen Bonds, Crown Ether, Liquid Ammonia, Crystal Structure Determination