

## 43 Langbeinite ( $\text{K}_2\text{Mg}_2(\text{SO}_4)_3$ ) family

### 43A Pure compounds

#### No. 43A-1 $(\text{NH}_4)_2\text{Mg}_2(\text{SO}_4)_3$ , Ammonium magnesium sulfate ( $M = 372.86$ )

1b	Phase transitions at 220 K and 241 K were found by Kahrizi and Steinitz by thermal expansion measurement. Phase transition at 161 K was found by Campbell and Stokes by $T_1$ measurement of protons and specific heat. Transition scheme: see Table 43A-13-001 in No. 43A-13.	88Kah 95Cam
3a	Unit cell parameter: see Table 43A-2-002 in No. 43A-2.	
4	Thermal expansion: Fig. 43A-1-001.	
5a	Dielectric constant: Fig. 43A-1-002. See also Fig. 43A-11-003, Fig. 43A-11-004 in No. 43A-11.	
6	Specific heat: see Transition entropy: see Table 43A-13-002 in No. 43A-13.	95Cam
13a	Proton NMR: Fig. 43A-1-003.	
b	ESR of $\text{VO}^{2+}$ : see	70Cho