

No. 40A-6 $\text{N}(\text{CH}_3)_4\text{HSO}_4$, Tetramethylammonium hydrogen sulfate
 ($M = 171.22$)

1a	Ferroelectricity of $\text{N}(\text{CH}_3)_4\text{HSO}_4$ crystal was first mentioned by Sawada et al. in 1985 *).			85Saw	
b	phase	III	II	I	90Riv
	state	(F)		P	
	crystal system	monoclinic	orthorhombic	orthorhombic	
	space group	$\text{P}2_1 - \text{C}_2^2$		$\text{Pn}2_1\text{a} - \text{C}_{2v}^9$	
	θ [K]	202	235		
Phase II is incommensurately modulated phase; see 14a.					
*) The same authors reported that two kinds of crystals showing different dielectric properties are obtained from aqueous solution of $\text{N}(\text{CH}_3)_4\text{HSO}_4$. The most part of the crystals is a hydrated crystal $\text{N}(\text{CH}_3)_4\text{HSO}_4 \cdot \text{H}_2\text{O}$, and the rest is anhydrous one $\text{N}(\text{CH}_3)_4\text{HSO}_4$.					
For the hydrated crystal $\text{N}(\text{CH}_3)_4\text{HSO}_4 \cdot \text{H}_2\text{O}$, see No. M25.					85Suz
2a	Crystal growth: evaporation method from aqueous solution.				90Riv
3a	Lattice parameters: $a = 16.467(9) \text{ \AA}$, $b = 7.543(6) \text{ \AA}$, $c = 6.939(5) \text{ \AA}$ at RT.				90Riv
5a	Dielectric constant: Fig. 40A-6-001.				
c	Spontaneous polarization: Fig. 40A-6-002.				
6a	Differential thermal analysis shows anomalies at 169, 203, 231, 315 and 402 K. See also				85Suz 90Riv
9a	Birefringence: see				90Riv
14a	X-ray diffraction studies revealed incommensurately modulated structure of phase II with modulation wave vector from $q = 0.39c^*$ at 232 K to $0.45c^*$ at 202 K.				91Spe