ERI Erionite Al(25), Si(75)

Contributed by Anastasia Kharchenko

Verified by K. L. Wong, V. Georgieva
Type Material: $[Na^{+}_{14}\ K^{+}_{2}\ (H_2O)_{27}]\ [Al_9Si_{27}\ O_{72}]$

Method: S. Ueda, M. Nishimura, M. Koizumi [1]

Batch Composition: 15 Na_2O : 5 K_2O : 60 SiO_2 : $A1_2O_3$: 0.1 TMA_2O : 350 H_2O

Source Materials

double distilled water (dd H_2O)
tetramethylammonium hydroxide (10% aq. solution)
sodium hydroxide (99%)
potassium hydroxide (85%)
aluminum foil (99.99%)
colloidal silica sol (0.5278 g/ml SiO_2)

Batch Preparation

(1) [1.95 g NaOH +0.96 g KOH+3.7 g H_2O], stir in a flask
(2) [(1) + 0.13 g TMAOH + 0.08 g Al], stir until Al is dissolved
(3) [(2) + 10 ml SiO_2]

Crystallization

Vessel: Teflon-lined stainless steel autoclave (100 ml)
Temperature: 100°C
Time: 6 days

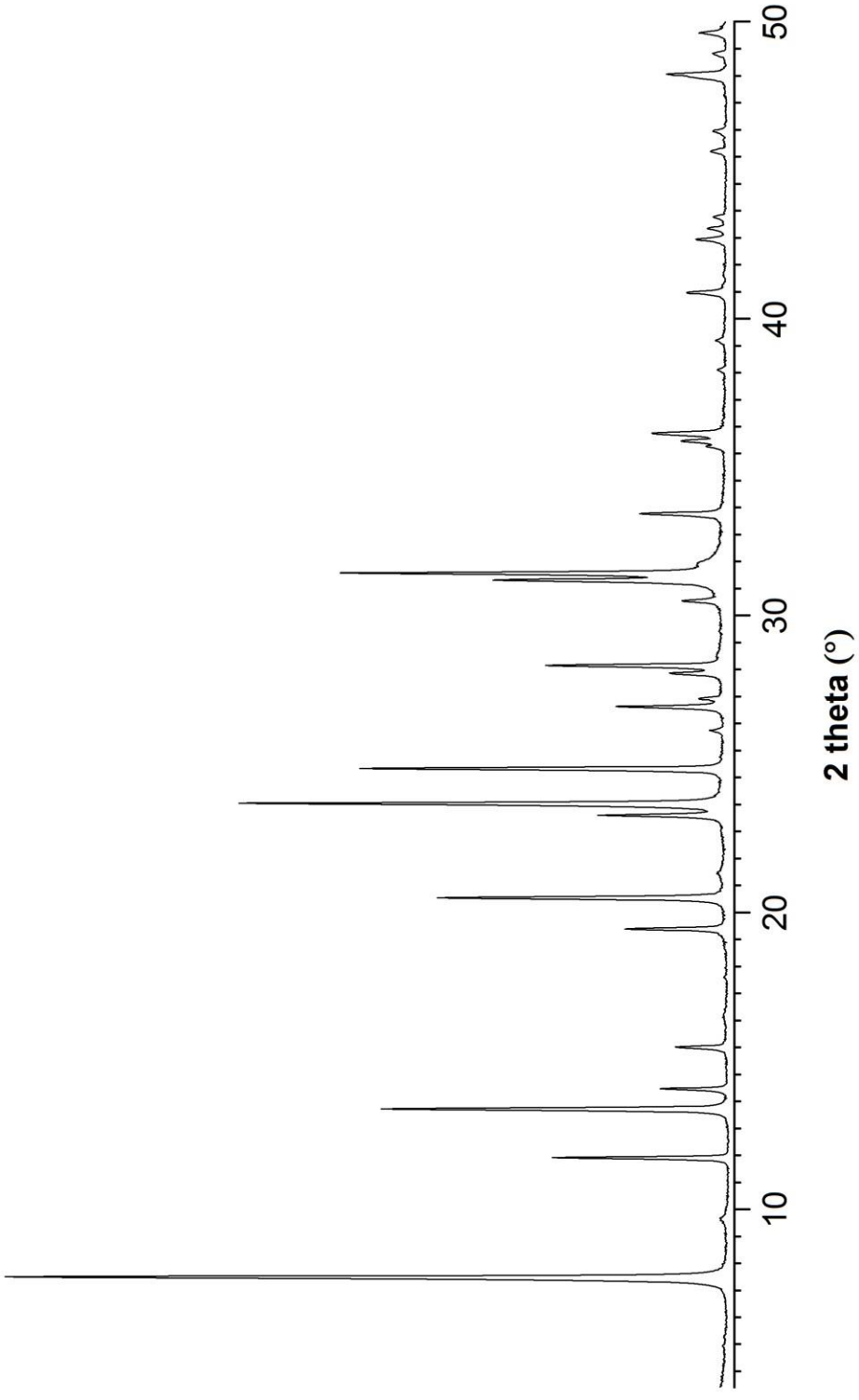
Product Recovery

(1) Suction filtration
(2) Washing with hot water
(3) Drying at 110°C for 24h

Product Characterization

XRD: ERI, Competing phase: OFF
Crystal size and habit: particles of 1 μm, shape of hexagonal prism

Reference

[1] S. Ueda, M. Nishimura, M. Koizumi, Elsevier Science Publishers B.V. Zeolites (1985) 105

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