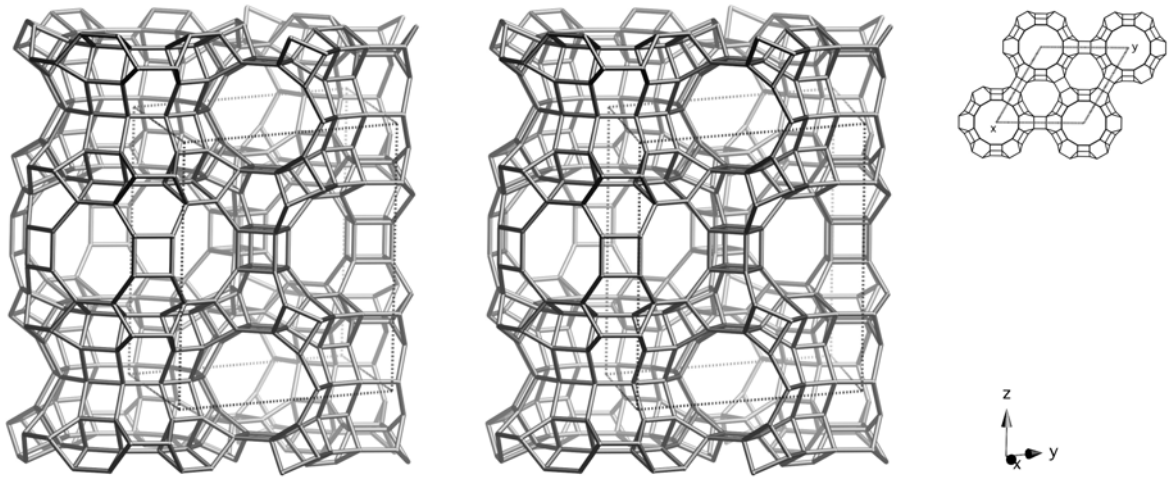
DFO

P*6/*mmm

Framework Type Data



framework viewed normal to [001] (upper right: projection down [001])

Idealized cell data: hexagonal, *P*6/*mmm*, *a* = 22.0Å, *c* = 21.2Å

Coordination sequences and vertex symbols:

T_1 (24,1)	4	9	16	26	41	60	82	107	135	167	$4\cdot6_3\cdot4\cdot6_3\cdot4\cdot12$
T_2 (24,1)	4	10	18	27	42	62	84	109	135	167	$4\cdot6_2\cdot4\cdot8\cdot6\cdot6_2$
T_3 (24,1)	4	10	18	28	45	65	84	106	134	173	$4\cdot4\cdot6\cdot6_3\cdot6_3\cdot10$
T_4 (24,1)	4	9	17	29	45	63	82	106	136	168	$4\cdot6\cdot4\cdot6_2\cdot4\cdot8$
T_5 (24,1)	4	9	17	29	44	62	85	112	139	169	$4\cdot4\cdot4\cdot6\cdot6\cdot6_2$
T_6 (12,*m*)	4	10	18	28	45	66	89	115	141	171	$4\cdot6_2\cdot4\cdot6_2\cdot10\cdot12$

Secondary building units: see *Compendium*

Composite building units:

d4r *sti* *bog* *lau*

Materials with this framework type:

*DAF-1[1,2]

Type Material: DAF-1 — DFO

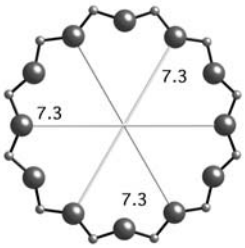
Type Material Data

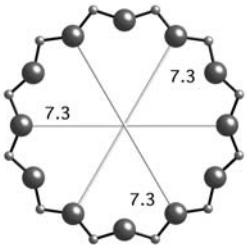
Crystal chemical data: $|(C_{16}H_{38}N_2)_7\ (H_2O)_{40}|\ [Mg_{14}Al_{52}P_{66}O_{264}]$-**DFO**
$C_{16}H_{38}N_2$ = decamethonium
hexagonal, *P6/mmm*, a = 22.351Å, c = 21.693Å [(1)]

Stability: Transforms to AlPO-5 and AlPO-tridymite on heating to 500ºC [(1)]

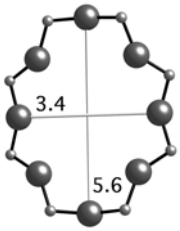
Framework density: 14.1 T/1000Å^3

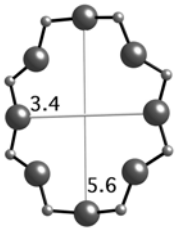
Channels: {[001] **12** 7.3 x 7.3 ↔ ⊥ [001] **8** 3.4 x 5.6}*** ↔ {[001] **12** 6.2 x 6.2 ↔ ⊥ [001] **10** 5.4 x 6.4}***



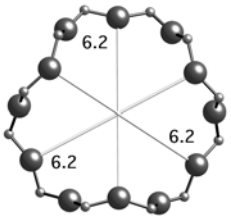


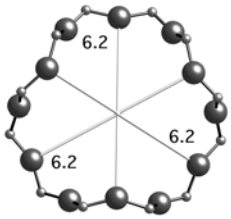
12-ring viewed along [001]



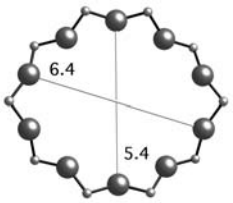


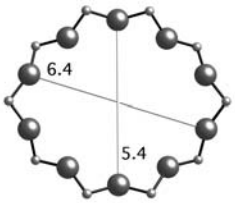
8-ring viewed normal to [001]





2nd 12-ring viewed along [001]





10-ring viewed normal to [001]

References:

(1) Wright, P.A., Jones, R.H., Natarajan, S., Bell, R.G., Chen, J.S., Hursthouse, M.B. and Thomas, J.M. *Chem. Commun.*, 633-635 (1993)

(2) Muncaster, G., Sankar, G., Catlow, C.R.A., Thomas, J.M., Bell, R.G., Wright, P.A., Coles, S., Teat, S.J., Clegg, W. and Reeve, W. *Chem. Mater.*, **11**, 158-163 (1999)