$KCa_{1.2}Mg(Al_{0.30}Si_{0.70})_{18}O_{36}[H_2O]_{16.6}$	*hP*80	(187) *P*-6*m*2 – $o^2n^3ml^2k^3ji^2gda$

$K_{0.91}Ca_{1.13}Mg_{1.02}Al_{5.41}Si_{12.62}O_{36}\cdot 16.64H_2O$ [1], offretite, zeolite OFF hydrated
Structural features: $(Si,Al)O_4$ tetrahedra share vertices to form an OFF-type zeolite framework with cancrinite-type cages (six 4-rings, two planar and three non-planar 6-rings) interconnected via hexagonal prisms, gmelinite-type cages (nine 4-rings, two planar 6-rings and three non-planar 8-rings), and channels delimited by 12-rings parallel to [001]; K at the centers of cancrinite-type cages, hydrated Mg at the centers of gmelinite-type cages, Ca and additional H_2O in the channels (partial disorder). See Fig. IV.15.

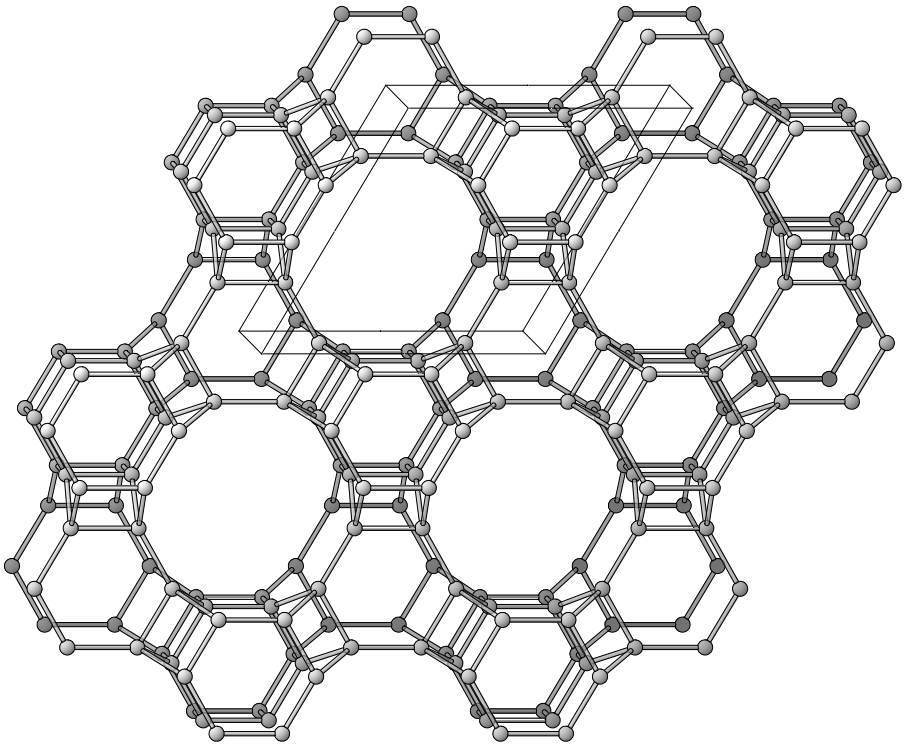

Fig. IV.15. **$K_{0.91}Ca_{1.13}Mg_{1.02}Al_{5.41}Si_{12.62}O_{36}\cdot 16.64H_2O$**

OFF-type (Si,Al) framework.

Gualtieri A. et al. (1998) [1]
$Al_{5.40}Ca_{1.50}H_{32.14}K_{0.89}Mg_{0.86}O_{52.07}Si_{12.60}$
a = 1.3308, c = 0.7597 nm, c/a = 0.571, V = 1.1652 nm^3, Z = 1

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
O1	12*o*	1	0.00623	0.31877	0.3173		non-colinear Si_2
M2	12*o*	1	0.10223	0.43497	0.2048		tetrahedron O_4
O3	6*n*	.*m*.	0.23763	0.76237	0.2686		non-colinear Si_2
O4	6*n*	.*m*.	0.45723	0.54277	0.29		non-colinear Si_2
$(OH_2)5$	6*n*	.*m*.	0.76963	0.23037	0.1603		non-colinear $(OH_2)Ca$
M6	6*m*	*m*..	0.00273	0.24397	$^1/_2$		tetrahedron O_4
O7	6*l*	*m*..	0.06613	0.39757	0		non-colinear Si_2
$(OH_2)8$	6*l*	*m*..	0.22043	0.01397	0	0.55	single atom (OH_2)
O9	3*k*	*mm*2	0.10463	0.89537	$^1/_2$		non-colinear Si_2

$(OH_2)10$	3*k*	*mm*2	0.57693	0.42307	$^1/_2$	0.94	non-colinear Ca_2
O11	3*k*	*mm*2	0.87633	0.12367	$^1/_2$		non-colinear Si_2
$(OH_2)12$	3*j*	*mm*2	0.09093	0.90907	0	0.65	non-colinear $(OH_2)_2$
Ca13	2*i*	3*m*.	$^2/_3$	$^1/_3$	0.2438	0.32	
Ca14	2*i*	3*m*.	$^2/_3$	$^1/_3$	0.3876	0.43	
$(OH_2)15$	2*g*	3*m*.	0	0	0.2335		single atom Mg
K16	1*d*	-6*m*2	$^1/_3$	$^2/_3$	$^1/_2$	0.89	trigonal prism O_6
Mg17	1*a*	-6*m*2	0	0	0	0.86	trigonal bipyramid $(OH_2)_5$

M2 = 0.70Si + 0.30Al; M6 = 0.70Si + 0.30Al
Transformation from published data: *-x*,*-y*,*-z*; origin shift $^2/_3$ $^1/_3$ 0
Experimental: powder, diffractometer, neutrons, $wR_p = 0.025$

Remarks: Natural specimen from Fitta, Italy. Composition $K_{0.91}Mg_{1.02}Ca_{1.13}(Al_{5.41}Si_{12.62}O_{36})\cdot 16.64H_2O$ from electron microprobe analysis. We assigned an approximate value to the Al/Si ratio of sites M based on the chemical analysis. Short interatomic distances for partly occupied site(s). Hydrogen atoms are not taken into consideration for Pearson symbol, Wyckoff sequence and atomic environments.

References: [1] Gualtieri A., Artioli G., Passaglia E., Bigi S., Viani A., Hanson J.C. (1998), Am. Mineral. 83, 590-606.