Chlorartinite $Mg_2(CO_3)Cl(OH)\cdot 3H_2O$

Crystal Data: Hexagonal. *Point Group:* $\overline{3}\ 2/m$ or $3m$. As granular aggregates, with grains to 0.01 mm.

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = 1.84 Slowly soluble in H_2O.

Optical Properties: Semitransparent. *Color:* White. *Streak:* White.
Optical Class: Uniaxial. $n = 1.510$ ω = n.d. ϵ = n.d.

Cell Data: *Space Group:* $R3c$ or $R\overline{3}c$. $a = 23.163(4)$ $c = 7.221(2)$ $Z = 18$

X-ray Powder Pattern: Tolbachik fissure volcano, Russia.
11.66 (100), 3.000 (41), 2.657 (22), 3.264 (21), 3.218 (21), 3.396 (17), 3.356 (17)

Chemistry:

	(1)	(2)
SO_3	0.25	
CO_2	15.35	20.46
MgO	26.26	37.47
CaO	3.70	
Na_2O	1.33	
K_2O	0.52	
Cl	13.65	16.48
H_2O^+	19.52	
H_2O^-	8.39	
H_2O		29.31
insol.	14.40	
$-O = Cl_2$	3.08	3.72
Total	100.29	100.00

(1) Tolbachik volcano, Russia; $(CO_3)^{2-}$ and $(OH)^{1-}$ confirmed by IR; after deduction of halite 3.3% and gypsum 0.4%, corresponds to $(Mg_{1.82}Ca_{0.18})_{\Sigma=2.00}(CO_3)_{0.98}Cl_{1.07}(OH)_{0.98}\cdot 3.05H_2O$.
(2) $Mg_2(CO_3)Cl(OH)\cdot 3H_2O$.

Occurrence: In sublimates around a volcanic fissure.

Association: Halite, gypsum, aragonite, nesquehonite.

Distribution: From the Tolbachik fissure volcano, Kamchatka Peninsula, Russia.

Name: For essential *chlorine* and chemical relation to *artinite*.

Type Material: Mining Institute, Saint Petersburg, Russia.

References: (1) Vergasova, L.P., S.K. Filatov, Y.K. Serafimova, and S.V. Sergeyeva (1998) Chlorartinite $Mg_2(CO_3)ClOH\cdot 3H_2O$ – a new mineral from exhalations. Zap. Vses. Mineral. Obshch., 127(2), 55–59 (in Russian). (2) (1999) Amer. Mineral., 84, 1195–1196 (abs. ref. 1).