

Amstallite**CaAl(Si, Al)₄O₈(OH)₄•(H₂O, Cl)**

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Crystal Data: Monoclinic. *Point Group:* 2/*m*. As acicular prismatic crystals, to 1 cm, elongated and commonly striated || [001], with cross sections appearing rhombohedral or hexagonal.

Physical Properties: *Cleavage:* Good on {100}. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 3–5 D(meas.) = 2.40(5) D(calc.) = 2.38

Optical Properties: Transparent to translucent. *Color:* Colorless. *Luster:* Vitreous. *Optical Class:* Biaxial (+). *Orientation:* Z = b; Y ∧ c = 10°. *Dispersion:* r < v, weak. α = 1.533 β = 1.534 γ = 1.538 2V(meas.) = 57(2)° 2V(calc.) = 59°

Cell Data: *Space Group:* C2/*c*. a = 18.830(2) b = 11.517(2) c = 5.190(1) β = 100.86(1)° Z = 4

X-ray Powder Pattern: Amstall, Austria.

9.75 (100), 3.603 (100), 3.816 (90), 5.43 (70), 4.714 (60), 3.175 (60), 4.069 (40)

Chemistry:

	(1)
SiO ₂	49.41
Al ₂ O ₃	22.84
CaO	13.80
Cl	1.75
H ₂ O	12.40
–O = Cl ₂	0.39
Total	99.81

(1) Amstall, Austria; by electron microprobe, corresponds to Ca_{0.98}Al_{1.78}Si_{3.26}O_{12.80}Cl_{0.20}H_{5.46}.

Occurrence: In open fissures cutting pegmatitic schlieren, in hydrothermally altered graphite-bearing metamorphic rocks.

Association: Apatite, rutile, siderite, albite, laumontite, calcite, vivianite.

Distribution: In the Amstall graphite quarry, Amstall, Austria.

Name: For the type locality at Amstall, Austria.

Type Material: Institute of Mineralogy and Crystallography, Vienna University; Natural History Museum, Vienna, Austria.

References: (1) Quint, R. (1987) Description and crystal structure of amstallite, CaAl(OH)₂[Al_{0.8}Si_{3.2}O₈(OH)₂]•[(H₂O)_{0.8}Cl_{0.2}], a new mineral from Amstall, Austria. *Neues Jahrb. Mineral., Monatsh.*, 253–262. (2) (1988) *Amer. Mineral.*, 73, 1492–1493 (abs. ref. 1).