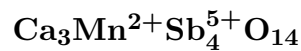


Ingersonite



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Crystal Data: Hexagonal, pseudocubic. *Point Group:* $\bar{3}2/m$, $3m$, or 32 . As crystals with imperfect hexagonal cross sections or as laths, to 0.4 mm; in massive aggregates.

Physical Properties: *Cleavage:* {0001}, perfect; imperfect rhombohedral cleavage.
Fracture: Uneven. *Hardness* = n.d. *VHN* = 974–1097 (100 g load). *D*(meas.) = n.d.
D(calc.) = 5.42

Optical Properties: Transparent to translucent. *Color:* Brownish yellow; medium to light yellow in transmitted light; light gray with yellow and white internal reflections in reflected light.
Streak: Brownish yellow. *Luster:* Vitreous.
Optical Class: Uniaxial (-).

R_1 – R_2 : (400) 11.16–11.40, (420) 10.94–11.13, (440) 10.74–10.88, (460) 10.52–10.66, (480) 10.34–10.48, (500) 10.18–10.32, (520) 10.05–10.19, (540) 9.96–10.09, (560) 9.91–10.04, (580) 9.89–10.01, (600) 9.89–10.02, (620) 9.90–10.03, (640) 9.90–10.03, (660) 9.91–10.03, (680) 9.91–10.03, (700) 9.91–10.03

Cell Data: *Space Group:* $P\bar{3}m$, $P3m1$, $P31m$, $P32$, $P3_12$, or $P3_22$. $a = 7.287(3)$
 $c = 17.679(9)$ $Z = 3$

X-ray Powder Pattern: Långban, Sweden.

2.965 (100), 1.549 (60), 1.820 (50), 1.810 (50), 2.565 (40), 1.543 (40), 0.9894 (30)

| Chemistry: | (1) | (2) | (3) |
|--------------------------------|-------|-------|--------|
| Sb ₂ O ₅ | 74.7 | 72.6 | 73.01 |
| FeO | 0.2 | 0.3 | |
| MnO | 9.4 | 9.1 | 8.01 |
| MgO | 0.0 | 0.3 | |
| CaO | 15.9 | 19.9 | 18.98 |
| Total | 100.2 | 102.2 | 100.00 |

(1–2) Långban, Sweden; by electron microprobe, F present between 1.4% and 3%, total not corrected for $-O = F_2$; (2) corresponds to $\text{Ca}_{3.01}\text{Mn}_{0.99}(\text{Sb}_{3.80}\text{Mn}_{0.09}\text{Mg}_{0.06}\text{Fe}_{0.04})_{\Sigma=3.99}\text{O}_{13.70}\text{F}_x$.
(3) $\text{Ca}_3\text{MnSb}_4\text{O}_{14}$.

Occurrence: In dump material from a metamorphosed Fe–Mn orebody.

Association: Filipstadite, jacobsite, calcite, clinohumite (?).

Distribution: At Långban, Värmland, Sweden.

Name: Honors Dr. Fred Earl Ingerson (1906–1993), geochemist with the U.S. Geological Survey and Emeritus Professor, University of Texas, Austin, Texas, USA.

Type Material: The Natural History Museum, London, England, 1986,410, E.1177; National Museum of Natural History, Washington, D.C., USA, 163012.

References: (1) Dunn, P.J., D.R. Peacor, A.J. Criddle, and C.J. Stanley (1988) Ingersonite, a new calcium-manganese antimonate related to pyrochlore, from Långban, Sweden. *Amer. Mineral.*, 73, 405–412.