

No. 3. Chalk-white powdery coatings; porcelain-like and waxy granular; white smooth translucent globules and botryoidal crusts; white shells. Commonly coating cryolite crystals. Nearly always present in cavities containing weloganite and dresserite. No. 11 nearly always admixed with it, often associated with No. 5. Difficult to distinguish from No. 11. In lower level A. S. has only found it with weloganite.

Best distinguishing characteristic is its fluorescence and phosphorescence, described as bluish-white (short wave) and cream-white (long wave). First reported to be an aluminum hydroxide with x-ray pattern similar to gibbsite, however revised report does not mention this.

JWC has noted that fluorescent coatings associated with pink strontianite and artichoke quartz are always No 3. Another fluorescent mineral appears to be acicular strontianite. Dresserite/hydrodresserite also fluoresces white. JWC found gravity

No. 5. White silky fine flakes "much like sericite" forming compact, friable, or foamy aggregates associated with weloganite, dresserite, dawsonite, quartz, calcite, and No. 3. Has more silky lustre than No. 3, less silky than dawsonite, In upper level. Does not fluoresce, but often associated with No. 3 which does. Possible new mineral with formula $\text{Na}_{10}\text{Zr}_5\text{Ti}_2\text{O}_{10}(\text{CO}_3)_9$, Gravity is 3.36. Effervesces in warm HCl. Ass'd with No. 3.

of No 3 to be between 2.8 &

No. 10. White to cream-white globules (less than .25 mm diameter) composed of radiating plates, porcelain-like surface and silky cross-section. Generally occurs on weloganite, but also found on calcite, artichoke quartz, and colorless cryolite. Always accompanied by brown hydrocarbon coating. Under high magnification surface of globule is rough and shows fibrous structure when broken (difference from No. 3). As yet found only in upper level. Uncommon. Major elements are niobium and sodium. Ass'd with No. 3.

No. 11. White finely globular crusts on crystals of quartz and calcite lining vugs. Often admixed with No. 3 from which it is difficult to distinguish. (Note: Is it fluorescent?) Believed to be an aluminum hydroxide with x-ray pattern similar to nordstrandite.

REFERENCES:

Sabina, Ann P., "The Francon Quarry, a Mineral Locality", Report of Activities, Geological Survey of Canada, Paper 76-1B (1976) and Paper 79-1A (1979).

Personal Correspondance, Ann P. Sabina to Janet W. Cares, 1979

MINERAL ASSOCIATIONS AT FRANCON.

#49

If you see:

Look for:

If you are looking for:

Look in known specimens of:

Acmite
 Analcime
 Anatase
 Ankerite
 Baddeleyite
 Brookite
 Cristobalite
 Crocoite
 Cryolite (colorless)
 Cryolite (yellow)
 Dachiardite
 Dolomite
 Elpidite
 Galena
 Hydrocarbon coating
 Ilmenorutile
 Magnetite
 Marcasite
 Molybdenite
 Mordenite
 Nahcolite
 Natrojarosite
 Pseudorutile

Pyrite
 Pyrochlore

Pyrrhotite
 Rozenite
 Siderite
 Smythite
 Sphalerite
 Strontianite (pink)
 Sulfur
 Synchysite
 Thorbastnaesite
 Weloganite

Zircon

Unknown No. 3

Unknown No. 5
 Unknown No. 10
 Unknown No. 11

In Sill Rock

In Massive Dawsonite

Analcime, dachiardite
 Acmite, dachiardite
 Brookite, ilmenorutile
 Dachiardite, mordenite, smythite
 Hematite, zircon, thorbastnaesite
 Anatase, ilmenorutile
 Mordenite, dolomite
 Pseudorutile, pyrochlore, siderite
 Pyrrhotite, No. 3 (crust)
 Elpidite, synchysite
 Acmite, analcime, dolomite, mordenite, weloganite
 Cristobalite, dachiardite, gypsum, mordenite
 Cryolite (yellow), synchysite
 Hydrocerussite (white powdery coating)
 Weloganite, No. 10
 Anatase, brookite
 Pyrite, pyrrhotite, smythite
 Mordenite, natrojarosite, rozenite, No. 10
 Weloganite
 Dachiardite, Marcasite
 Halite
 Botryoidal pink sphalerite
 Crocoite, magnetite, natrojarosite, pyrochlore, zircon
 Rozenite, Sulfur (coating)
 Crocoite, pseudorutile, siderite, with pyrite & zircon in sill rock
 Magnetite, smythite
 Marcasite, pyrite
 Crocoite, pyrochlore
 Magnetite, pyrrhotite
 Natrojarosite, sulfur
 No. 3
 Natrojarosite, pyrite, sphalerite
 Elpidite
 Baddeleyite, zircon
 Dachiardite, elpidite, dresserite, hydrodresserite, strontiodresserite, galena, harmotome, molybdenite, mordenite, sphalerite
 Baddeleyite, thorbastnaesite, pyrochlore
 No. 5, No. 11, dresserite, pink strontianite, colorless cryolite, No. 10
 No. 3
 No. 3, hydrocarbon coating, marcasite
 No. 3
 Anatase, apatite, fluorite, galena, garnet, graphite, halite, nahcolite, pyrochlore, siderite, thenardite, zircon
 Fluorite (black)

References: Sabina, Ann P., "The Francon Quarry, a Mineral Locality", Report of Activities, Geological Survey of Canada, Paper 76-1B (1976), and "Minerals of the Francon Quarry...", Paper 79-1A (1979).

FRANCON MINERALS

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ASSEMBLAGE A (UPPER LEVEL)

ALBITE CALCITE
 CALCITE
 DAWSONITE
 QUARTZ
 Barite
 Cryolite (colorless)
 Dresserite
 Fluorite
 Hydrodresserite
 Kaolinite
 Pyrite
 Strontianite
 Strontiodresserite
 Wologanite
 Unknowns 3, 5, & 10

ASSEMBLAGE B (LOWER LEVEL)

ALBITE
 ANALCIME
 CALCITE
 DAWSONITE
 FLUORITE
 QUARTZ
 Acmite
 Ankerite
 Baddeleyite
 Barite
 Celestine
 Cryolite (yellow)
 Dachiardite
 Elpidite
 Goethite
 Gypsum
 Halite
 Hematite
 Kaolinite
 Magnetite
 Marcasite
 Montmorillonite
 Mordenite
 Nahcolite
 Natrojarosite
 Smythite
 Strontianite
 Sulfur
 Synchysite
 Thorbastnaesite
 Wologanite
 Zircon
 Unknown No. 3

SOLUBILITY CHARACTERISTICSEFFERVESCE DILUTE HCl

S.G.
 2.44 Dawsonite (delayed)
 2.71 Calcite (fast)
 2.7 Strontiodresserite
 2.8 Hydrodresserite (rapid)
 2.89 Dolomite (warm)
 2.97 Ankerite (warm)
 3.0 Dresserite (rapid)
 3.2 Wologanite (rapid)
 3.36 Unknown No. 5 (warm)
 3.7-3.8 Strontianite (fast)
 3.9-4.2 Synchysite
 3.96 Siderite (warm)
 4.9-5.2 Thorbastnaesite (warm?)
 6.8-6.9 Hydrocerussite

SLOWLY SOLUBLE WITHOUT EFFERVESCENCE

S.G.
 2.1-2.2 Mordenite (gel)
 2.2 Dachiardite (gel)
 2.3 Gypsum
 2.4-2.5 Harmotome (no gel)
 2.9-3.2 Natrojarosite
 3.1-3.2 Apatite
 3.3-4.3 Goethite
 3.9-4.1 Sphalerite
 4.5-4.8 Pyrrhotite
 5.26 Hematite (Concentrated HCl)
 6.0-6.1 Crocoite
 7.6 Galena (Decomposed by HNO₃ with
 separation of sulfur)
 (Fluorite & cryolite decompose
 in H₂SO₄)

INSOLUBLE DILUTE HCl

S.G.
 2.2-2.3 Analcime
 2.5 K-Feldspar
 2.6 Kaolinite
 3.0 Cryolite
 3.18 Fluorite
 4.0 Celestine
 4.25 Barite

WATER-SOLUBLE

S.G.
 2.17 Halite
 2.2 Nahcolite (effervesces in HCl)
 2.2-2.3 Rozenite
 2.68 Thenardite
 (Montmorillonite swells in water)

Also anatase, baddeleyite, brookite, ilmenorutile, marcasite, zircon

FLUORIDE ETCH TEST

Cryolite
 Fluorite
 Bastnaesite
 Synchysite
 Add 1 drop conc H₂SO₄ to small chip on CLEAN dry glass slide. Let stand overnight, wash & dry slide, examine for pits or etching, using binocular microscope.

FLUORESCENT MINERALS

Dresserite/Hydrodresserite spheres (white)
 Strontianite (acicular habit only) (white)
 Strontiodresserite (?)
 Unknown No. 3 (white)
 Wologanite (variable - See APS Paper 79-1A)
 (Some calcite fl. pink/red)

Submitted by Janet W. Cares