

the tin-bearing mineral(s) is locked with light gangue and/or fluorite.

- 3. The assays of the ferromagnetic products and the <3.3 sp.gr. non-magnetic products decrease with decreasing particle size and this indicates that the tin-bearing mineral(s) is progressively liberated from gangue.
- 4. The assays of the >3.3 sp.gr. products tend to increase with decreasing particle size although the distribution of tin into these products shows relatively little variation:

Size Fraction (μm)	Tin in >3.3 sp.gr. Non-Mag Product	
	Assay (ppm)	Distribution %
+75	1000	32
-75+33	2200	49
-33+17	1700	40
-17+9	2600	38

Even at particle sizes of less than 17 μm , 42% of the tin occurs in composite grains in such small quantities that the grains report in ferromagnetic or <3.3 sp.gr. products. In addition, the tin assay of the minus 17 plus 9 μm >3.3 sp.gr. non-magnetic product is only twice the head assay of the ore.

5. MINERALOGY

5.1 Mineralogy of the Ferromagnetic Products

The ferromagnetic products contain 25% magnetite (+75 μm) to >70% magnetite (-17+9 μm) and the fluorite occurs in these products almost completely locked.

In the plus 75 μm ferromagnetic product the fluorite crystals are commonly 20 to 60 μm in size and many occur in complex ternary (+) grains (i.e. composite grains composed of 3 or more minerals) with complex intergrowths (on a scale of <10 μm). Such textures are shown in Plate A-2a.

With decreasing particle size the locking between fluorite and magnetite and non-opaques becomes relatively simpler on the scale of the particle size and, in the minus 17 plus 9 μm ferromagnetic product, composites with magnetite and fluorite are generally binary grains (i.e. composite grains composed of two minerals) with simple textures.