

FER-1 to FER-4

Iron-Formation Samples

FER-1 was obtained from a bed of magnetite-quartz iron-formation at Austin Brook near Bathurst, New Brunswick. These minerals comprise 55% and 30%, respectively, of the volume of the sample. The hematite content is about 3%.

FER-2 is from an iron-formation bed occurring in greywacke at the north pit of the Griffith Mine at Bruce Lake, Ontario. Magnetite makes up about 25% of the sample by volume. Amphibole and quartz are the major gangue constituents.

FER-3 and FER-4 are from the Sherman Mine property at Temagami, Ontario. FER-3 is from the west pit in the north limb of the Tetapaga incline containing metavolcanic and pyroclastic rocks. Quartz is the most abundant mineral present. Hematite occurs as dusty inclusions in the quartz, but as micro-laminae in jasper layers. FER-4 was taken in the south pit from a cherty magnetite iron-formation containing chloritic tuff. The mineral assemblage of FER-4 is similar to that of FER-3, but the proportions of the minerals differ.

Recommended Values for Whole-Rock Constituents

Constituent	wt %			
	FER-1	FER-2	FER-3	FER-4
SiO ₂	16.95	49.21	53.61	50.07
TiO ₂	0.03	0.18	0.01	0.07
Al ₂ O ₃	0.52	5.16	0.09	1.7
Fe ₂ O ₃	49.88	22.5	29.4	22.7
FeO	23.34	15.24	13.63	15.54
MnO	0.22	0.12	0.08	0.19
MgO	0.3	2.1	1.02	1.41
CaO	3.29	2.17	0.84	2.23
Na ₂ O	0.03	0.51	0.03	0.05
K ₂ O	0.02	1.33	0.03	0.29
H ₂ O ⁺	0.41	0.98	0.2	0.72
CO ₂	1.39	0.07	1.2	4.86
P ₂ O ₅	2.39	0.27	0.07	0.13
F	0.06	0.04	0.01	0.02
S	0.26	0.17	0.03	0.11

Values in italics are provisionally recommended.

FER-1, FER-2, FER-3, and FER-4

Iron-Formation Samples

Recommended Values for Trace Constituents

Constituent	$\mu\text{g/g}$			
	FER-1	FER-2	FER-3	FER-4
As	6	2	1	3.6
B		61		2
Ba	1000	240	11	43
Be	1.5	3		1
Bi	6			
Cd		3		
Cl		100		100
Co	12	7	2	2
Cr	7	47	6	9
Cs		5		0.8
Cu	100	45	6	13
Ge	3	6	4	5
Hg		0.02		
La	12	14	2	8
Li	5	22		7
Lu	0.2			
Mo		3		
Ni	8	21	10	6
Pb	5200	11	9	8
Rb		66		16
Sb	5	0.7	1	3
Sc	0.8	6		1.5
Sm	1.7	2.6	0.6	2.2
Sn		1		
Sr	90	58	31	62
Th		3		
V	100	37	8	11
Y		15	6	8
Yb	1	1.3	0.2	0.5
Zn	3500	43	36	27
Zr	13	39	2	18

Values in italics are provisionally recommended.

FER-1, FER-2, FER-3, and FER-4 were prepared at CANMET and were characterized by the Geological Survey of Canada; they are available only as a set of four.

A copy of Geological Survey of Canada Paper 83-19, "FER-1, FER-2, FER-3, and FER-4: Four Canadian iron-formation samples prepared for use as reference materials", will be forwarded with each order for the set of FER-1, FER-2, FER-3, and FER-4.