

Appendix A3

Name and formula

Reference code:	00-006-0696
Mineral name:	Iron, syn
Compound name:	Iron
Common name:	ledkunitite
Empirical formula:	Fe
Chemical formula:	Fe

Crystallographic parameters

Crystal system:	Cubic
Space group:	Im-3m
Space group number:	229
a (Å):	2.8664
b (Å):	2.8664
c (Å):	2.8664
Alpha (°):	90.0000
Beta (°):	90.0000
Gamma (°):	90.0000
Calculated density (g/cm ³):	7.87
Volume of cell (10 ⁶ pm ³):	23.55
Z:	2.00
RIR:	-

Subfiles and quality

Subfiles:	Alloy, metal or intermetallic Common Phase Educational pattern Forensic Inorganic Mineral NBS pattern
Quality:	Star (S)

Comments

Color:	Gray, light gray metallic
Creation Date:	1/1/1970
Modification Date:	1/1/1970
Color:	Gray, light gray metallic. Total impurities of sample <0.0013% each metals and non-metals
Additional Patterns:	See ICSD 64795 (PDF 01-085-1410)

Temperature of Data Collection: Pattern taken at 25 C

Sample Preparation: The iron used was an exceptionally pure rolled sheet prepared at the NBS, Gaithersburg, Maryland, USA., [Moore, G., *J. Met.*, **5** 1443 (1953)]. It was annealed in an H₂ atmosphere for 3 days at 1100 C and slowly cooled in a He atmosphere. γ -Fe (fcc)=(1390 C) δ -Fe (bcc)

Opaque mineral optical data on specimen from Meteorite: RR₂R_e= 57.7, Disp.=16, VHN=158 (mean at 100, 200, 300), Color values=.311, .316, 57.9, Ref.: IMA Commission on Ore Microscopy QDF.

References

Primary reference: Swanson et al., *Natl. Bur. Stand. (U.S.), Circ. 539, IV, 3*, (1955)

Peak list

No.	h	k	l	d [Å]	2Theta [deg]	I [%]
1	1	1	0	2.02680	44.674	100.0
2	2	0	0	1.43320	65.023	20.0
3	2	1	1	1.17020	82.335	30.0
4	2	2	0	1.01340	98.949	10.0
5	3	1	0	0.90640	116.390	12.0
6	2	2	2	0.82750	137.144	6.0

Stick Pattern

