

MinIdent-Win - cinnabar

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Formula: HgS

Status: Mineral name is IMA approved or traditional

Level: Species

Parents: sulphides

Symmetry: Trigonal

Mean Atomic Number: 72.2

Diffraction Values: 3.355, 2.863, 1.980, 3.170, 2.070

Kretz abbreviation: Cin
First Described in 315



Space Group: P3(1)21

Z number: 3

ICDD (TM) Number: 6-256

	Minimum	Maximum	Average	Std. Dev.
a (A)	4.160	4.160	4.160	
b (A)	4.160	4.160	4.160	
c (A)	9.540	9.540	9.540	
Alpha	90.000	90.000	90.000	
Beta	90.000	90.000	90.000	
Gamma	120.000	120.000	120.000	
Volume	142.977	142.977	142.978	

	Minimum	Maximum	Average	Std. Dev.
n(Omega)	2.905	2.905	2.905	
n(Epsilon)	3.256	3.256	3.256	
Max. birefringence	0.351	0.351	0.351	
Optical Sign:	+ve			

C(Omega)  Opaque, Internal reflections
C(Epsilon)  Opaque, Internal reflections

Reflectivity	Minimum	Maximum	Average	Std. Dev.
470 nm	26.20	31.90	29.05	
546 nm	24.10	29.60	26.85	
589 nm	23.40	28.41	25.91	
650 nm	22.60	27.55	25.08	

	Minimum	Maximum	Average	Std. Dev.
Mohs	2.0	2.5	2.0	
Vickers	51	156	104	
Density	8.05	8.20	8.13	

	Total Min Wt (%)	Anal. Min Wt (%)	Average Wt (%)	Anal. Max Wt (%)	Total Max Wt (%)	Average Atomic	Coordination
S	10.6300	10.6300	12.0950	13.8000	13.9182	0.9969	
Fe	0.0000	0.0000	0.0250	0.1000	0.1000	0.0012	
Co	0.0000	0.0000	0.0150	0.0600	0.0600	0.0007	
Se	0.0000	0.0000	0.0575	0.2300	0.2300	0.0019	
Ag	0.0000	0.0000	0.0825	0.2000	0.2000	0.0020	
Sb	0.0000	0.0000	0.0550	0.2200	0.2200	0.0012	
Hg	85.3574	86.2000	87.6775	88.8800	88.8800	1.1550	2
Total			100.0076			2.1589	


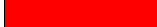
Atomic proportions calculated for S+Se+Sb = 1.0

Compilation based on 5 general and 4 sample records

Values in italics are calculated from the minimum and maximum values. Other data are from the sample and general records.

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Lustre	Adamantine, Dull, Earthy
Aggregation	Massive, Disseminated, Granular
Habit	Tabular, Prismatic, Rhombohedral, Massive, Granular
Tenacity	Sectile
Fracture	Conchoidal, Subconchoidal, Uneven
Cleavage	{10-10} Perfect
Surface Colour	 Red, Brownish Red, Dark Red, Blackish Red
Streak	 Red

Comp. Plan.	Comp. Surf.	Twin Plane	Twin Axis	Notes
		{0001}	[0001]	Penetration

Polymorphs: hypercinnabar, metacinnabar

Synonyms: cinnabarite

Remarks: Black with a purple tint and a dark purple-black streak. The lustre is adamantine and the fracture is subconchoidal to uneven. In reflected light, hypercinnabar is greyish white and distinctly anisotropic

Occurrences: In Mercury and mercury-antimony deposits. Also reported Pliocene siliceous sinter, associated with pyrite, stibnite and livingstonite.

Localities of samples used in compilation: Mount Diablo mine, Contra Costa County, California, U.S.A. Whenuaroa, Puhipuhi geothermal field, Northland, New Zealand.

References: Min. Mag. v.68, p.191-198. QDF for Ore Minerals, B. M. (Nat. Hist.), 1986. Dana (7th) v.1, p.251. Roberts et al. (1990) Encycl. Mins. Uytendogaardt & Burke (1971). Anthony et al. (1990).

MinIdent-Win

Cinnabar



Dorian G.W. Smith

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Caption: In this image, deep cherry red, crystals of cinnabar are associated with other, undetermined, fine-grained, grey sulphides, quartz and dolomite. When examined under the microscope, very small beads of native mercury can also be seen on this specimen. They show up here as rounded highlights dotting the cinnabar crystals. Mercury can form from cinnabar by prolonged exposure of the mineral to intense light. The only common mineral with which cinnabar is likely to be confused is realgar. However, it can be distinguished by its scarlet streak (realgar's is orange-red), by the almost invariable association of orpiment with realgar and by the common presence of small droplets of native mercury on the cinnabar. Cinnabar is also appreciable harder than realgar. Locality: McLaughlin mine, Lower Lake, California, U.S.A.

Keywords: cinnabar; mercury ore; sulphides; native mercury; adamantine lustre; McLaughlin mine; Lower Lake; California; U.S.A.

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