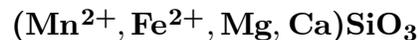


Rhodonite



©2001 Mineral Data Publishing, version 1.2

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Crystals rough, with rounded edges, typically tabular and elongated \parallel [001], to 20 cm; commonly massive, cleavable to compact. *Twinning:* Lamellar, with {010} as composition plane.

Physical Properties: *Cleavage:* Perfect on {110} and $\{1\bar{1}0\}$, $(110) \wedge (1\bar{1}0) = 92.5^\circ$; good on {001}. *Fracture:* Conchoidal to uneven. Hardness = 5.5–6.5 D(meas.) = 3.57–3.76 D(calc.) = 3.726

Optical Properties: Transparent to translucent. *Color:* Rose-pink to brownish red, gray, or yellow, exterior commonly black from manganese oxides; in thin section, colorless to faint pink. *Streak:* White. *Luster:* Vitreous, somewhat pearly on cleavages. *Optical Class:* Biaxial (+). *Pleochroism:* Weak; X = yellowish red; Y = pinkish red; Z = pale yellowish red. *Orientation:* $X \wedge a \simeq 5^\circ$; $Y \wedge b \simeq 20^\circ$; $Z \wedge c \simeq 25^\circ$. *Dispersion:* $r < v$. $\alpha = 1.711\text{--}1.734$ $\beta = 1.716\text{--}1.739$ $\gamma = 1.724\text{--}1.748$ $2V(\text{meas.}) = 63^\circ\text{--}87^\circ$

Cell Data: *Space Group:* $C\bar{1}$. $a = 9.758$ $b = 10.499$ $c = 12.205$ $\alpha = 108.58^\circ$ $\beta = 102.92^\circ$ $\gamma = 82.52^\circ$ $Z = 20$

X-ray Powder Pattern: Franklin, New Jersey, USA. (ICDD 13-138). 2.772 (100), 2.980 (65), 2.924 (65), 3.14 (30), 3.34 (25), 3.10 (25), 2.651 (18)

Chemistry:

	(1)
SiO ₂	45.46
Al ₂ O ₃	0.27
Fe ₂ O ₃	0.00
FeO	0.96
MnO	50.54
ZnO	trace
MgO	0.55
CaO	2.25
H ₂ O ⁺	0.00
H ₂ O ⁻	0.00
Total	100.03

(1) Chikla, Bhandara district, Maharashtra, India; corresponds to $(\text{Mn}_{0.93}^{2+}\text{Ca}_{0.05}\text{Fe}_{0.02}^{2+}\text{Mg}_{0.02})_{\Sigma=1.02}(\text{Si}_{0.99}\text{Al}_{0.01})_{\Sigma=1.00}\text{O}_3$.

Occurrence: In manganese-bearing deposits formed by hydrothermal, contact and regional metamorphic, and sedimentary processes.

Association: Calcite, willemite, franklinite (Franklin, New Jersey, USA); calcite, alleghanyite, tephroite, galaxite, grunerite, magnetite (Bald Knob, North Carolina, USA).

Distribution: A few localities for studied or fine material are: from around Yekaterinburg (Sverdlovsk), Ural Mountains, Russia. In the Harstigen mine, near Persberg, and at Långban, Värmland, Sweden. In the Meldon quarry, Okehampton, Devon, England. In Romania, at Băița (Rézbánya) and Căvnic (Kapnik). From near Viu and St. Marcel, Val d'Aosta, Italy. At Broken Hill, New South Wales, Australia, as gem crystals. In the Noda-Tamagawa mine, Iwate Prefecture, and many other places in Japan. In the USA, from Franklin and Sterling Hill, Ogdensburg, Sussex Co., New Jersey; at Bald Knob, near Sparta, Alleghany Co., North Carolina; from Butte, Silver Bow Co., Montana. At Morro da Mina, Conselheiro Lafaiete, Minas Gerais, Brazil, as gem crystals. In the Chiurucu mine, Huanaco, Peru.

Name: From the Greek for rose, in reference to the mineral's color.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 378–381. (2) Deer, W.A., R.A. Howie, and J. Zussman (1978) Rock-forming minerals, (2nd edition), v. 2A, single-chain silicates, 586–599. (3) Peacor, D.R. and N. Niizeki (1963) The redetermination and refinement of the crystal structure of rhodonite, (Mn, Ca)SiO₃. Zeits. Krist., 119, 98–116.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of Mineral Data Publishing.