

Parkinsonite

(Pb, Mo)₄O₄Cl

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Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m, \bar{4}2m, 4mm$, or 422. As bladed crystals, to 0.3 mm, and crystalline aggregates, embedded in other lead minerals.

Physical Properties: *Cleavage:* {001}, perfect; {100}, possible, fair. *Tenacity:* Sectile. Hardness = 2–2.5 VHN = 113–133, 122 average (50 g load). D(meas.) = 7.32 (synthetic). D(calc.) = 7.39

Optical Properties: Translucent. *Color:* Bright red, purplish red, brownish red; brownish red in transmitted light; in reflected light, gray with deep red to red-orange internal reflections. *Streak:* Scarlet to grenadine-red. *Luster:* Adamantine, pearly to resinous. *Optical Class:* Uniaxial (-); anomalously biaxial. *Pleochroism:* Strong; *O* = brownish red; *E* = greenish yellow. $\omega = [2.58]$ $\epsilon = [2.42]$ 2V(meas.) = Small. *Anisotropism:* Weak to moderate. *Birefractance:* Moderate.

R₁–R₂: (400) 22.6–21.8, (420) 22.4–21.2, (440) 22.3–20.5, (460) 22.2–19.9, (480) 21.9–19.4, (500) 21.6–18.9, (520) 21.2–18.5, (540) 20.6–18.1, (560) 20.2–17.8, (580) 19.8–17.5, (600) 19.4–17.2, (620) 19.1–17.1, (640) 18.9–17.0, (660) 18.7–16.9, (680) 18.6–16.7, (700) 18.5–16.7

Cell Data: *Space Group:* $I4/mmm, I\bar{4}2m, I\bar{4}m2, I4mm$, or $I422$. $a = 3.9922(3)$
 $c = 22.514(3)$ Z = 2

X-ray Powder Pattern: Merehead quarry, England.
2.983 (100), 2.816 (78), 1.989 (75), 1.658 (51), 1.586 (33), 3.507 (32), 1.263 (24)

Chemistry:	(1)
MoO ₃	8.0
PbO	88.4
Cl	4.4
–O = Cl ₂	1.0
Total	[99.8]

(1) Merehead quarry, England; by electron microprobe, average of six analyses, original total given as 100.8%; corresponds to (Pb_{3.17}Mo_{0.44})_{Σ=3.61}O_{4.01}Cl_{0.99}.

Occurrence: A very rare mineral in nodules in manganese oxide ores in veins, fissures, and pockets in limestone.

Association: Mendipite, chloroxiphite, diaboelite, cerussite, paralaurionite, wulfenite, calcite, manganese oxides (Merehead quarry, England).

Distribution: In the Merehead quarry, Cranmore, and from the Wesley mine, Didsbury, near Bristol, Somerset, England.

Name: For Reginald F.D. Parkinson (1928–), British mineral collector and dealer, Shepton Mallet, Somerset, England, who first found the mineral.

Type Material: The Natural History Museum, London, England, 1987,478–479.

References: (1) Symes, R.F., G. Cressey, A.J. Criddle, C.J. Stanley, J.G. Francis, and G.C. Jones (1994) Parkinsonite, (Pb, Mo, □)₈O₈Cl₂, a new mineral from Merehead Quarry, Somerset. Mineral. Mag., 58, 59–68. (2) (1994) Amer. Mineral., 79, 1011 (abs. ref. 1).