

Magnesiocoulsonite

Mg(V, Cr)₂O₄

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Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As grains, equant, may be crudely octahedral, to 0.3 mm.

Physical Properties: *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 6.5 VHN = 873–1080, 969 average (100 g load). D(meas.) = n.d. D(calc.) = 4.31

Optical Properties: Opaque. *Color:* Black; light gray in reflected light. *Streak:* Black. *Luster:* Metallic.

Optical Class: Isotropic.

R: (400) 14.3, (420) 14.2, (440) 14.1, (460) 14.0, (480) 13.9, (500) 13.8, (520) 13.8, (540) 13.7, (560) 13.7, (580) 13.7, (600) 13.7, (620) 13.7, (640) 13.7, (660) 13.8, (680) 13.8, (700) 13.7

Cell Data: *Space Group:* $Fd\bar{3}m$. $a = 8.385$ $Z = 8$

X-ray Powder Pattern: Pereval quarry, Russia.
2.52 (10), 4.84 (9), 1.482 (9), 2.093 (8), 1.612 (8), 1.092 (7), 1.048 (5)

Chemistry:	(1)	(2)
TiO ₂	0.14	
Al ₂ O ₃	0.36	
V ₂ O ₃	50.07	78.81
Cr ₂ O ₃	28.09	
FeO	0.20	
MnO	0.18	
MgO	20.90	21.19
Total	99.94	100.00

(1) Pereval quarry, Russia; by electron microprobe, average of ten analyses, total Fe as FeO, total Mn as MnO; corresponds to (Mg_{0.99}Fe_{0.01})_{Σ=1.00}(V_{1.28}Cr_{0.71}Al_{0.01})_{Σ=2.00}O_{4.00}. (2) MgV₂O₄.

Mineral Group: Spinel group.

Occurrence: An accessory mineral in Cr–V-bearing metamorphic rocks.

Association: Cr–V-tremolite, Cr–V-diopside, goldmanite, Cr–V-chlorite, Cr–V-muscovite, vanadian magnesiocromite, karelianite, pyrite, calcite, quartz.

Distribution: From the Pereval marble quarry, near Slyudyanka, Sayan Mountains, near Lake Baikal, Siberia, Russia.

Name: For its dominant MAGNESIum content and relation to *coulsonite*.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 88235–88237.

References: (1) Reznitskii, L.Z., E.V. Sklyarov, and Z.F. Ushchapovskaya (1995) Magnesiocoulsonite MgV₂O₄ – a new mineral species in the spinel group. *Zap. Vses. Mineral. Obshch.*, 124(4), 91–98 (in Russian). (2) (1996) *Amer. Mineral.*, 81, 1283 (abs. ref. 1).