Donpeacorite $(Mn^{2+}, Mg)MgSi_2O_6$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Interlocking grains up to 3 mm.

Physical Properties: *Cleavage:* Perfect on {110}. Hardness = 5–6 D(meas.) = 3.36(1) D(calc.) = 3.403(2)

Optical Properties: Semitransparent. *Color:* Pale buff, yellow-orange; faint pink in thin section. *Luster:* Vitreous.
Optical Class: Biaxial (–). *Orientation:* $Z = c$. $\alpha = 1.677(2)$ $\beta = 1.684(2)$ $\gamma = 1.692(2)$ 2V(meas.) = 88(5)°

Cell Data: *Space Group: Pbca.* $a = 18.384(11)$ $b = 8.879(7)$ $c = 5.226(3)$ $Z = 8$

X-ray Powder Pattern: Balmat, New York, USA.
3.18 (100), 2.896 (60), 1.495 (11), 1.479 (11), 4.03 (10), 3.09 (10), 2.961 (10)

Chemistry:

	(1)
SiO_2	55.12
Al_2O_3	0.23
FeO	0.14
MnO	18.48
MgO	26.31
CaO	0.69
Na_2O	0.03
Total	[101.00]

(1) Balmat, New York, USA; by electron microprobe, original total given as 100.00%; corresponding to $(Mg_{1.41}Mn_{0.56}Ca_{0.03})_{\Sigma=2.00}(Si_{1.98}Al_{0.01})_{\Sigma=1.99}O_{5.99}$.

Polymorphism & Series: Dimorphous with kanoite.

Mineral Group: Pyroxene group.

Occurrence: In manganese-rich siliceous marbles metamorphosed to the upper amphibolite facies.

Association: Tirodite, tourmaline, ferrian braunite, manganoan dolomite, hedyphane, anhydrite.

Distribution: In the Balmat No. 4 mine, Balmat, St. Lawrence Co., New York, USA.

Name: To honor Dr. Donald R. Peacor (1937–), University of Michigan, Ann Arbor, Michigan, USA.

Type Material: Harvard University, Cambridge, Massachusetts, 124237; National Museum of Natural History, Washington, D.C., USA, 159862.

References: (1) Petersen, E.U., L.M. Anovitz, and E.J. Essene (1984) Donpeacorite, $(Mn, Mg)MgSi_2O_6$, a new orthopyroxene and its proposed phase relations in the system $MnSiO_3$ – $MgSiO_3$ – $FeSiO_3$. Amer. Mineral., 69, 472–480.