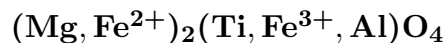


Qandilite



©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As octahedral crystals and granular, to 2.3 mm.

Physical Properties: *Cleavage:* {111}, perfect. *Tenacity:* Brittle. *Hardness* = ~7 VHN = 960–1045, average 998 (100 g load). $D(\text{meas.}) = 4.03\text{--}4.08$ $D(\text{calc.}) = 4.04$ Strongly magnetic.

Optical Properties: Opaque. *Color:* Iron-black; light gray with a pinkish tint in reflected light. *Streak:* Black. *Luster:* Metallic.

Optical Class: Isotropic.

R: (400) 14.8, (420) 14.2, (440) 13.8, (460) 13.5, (480) 13.3, (500) 13.2, (520) 13.1, (540) 13.1, (560) 13.0, (580) 13.0, (600) 13.0, (620) 13.0, (640) 13.0, (660) 12.9, (680) 12.9, (700) 12.9

Cell Data: *Space Group:* $Fd\bar{3}m$ (synthetic Mg_2TiO_4). $a = 8.4376(5)$ $Z = 8$

X-ray Powder Pattern: Dupezeh Mountain, Iraq.

2.533 (100), 1.486 (60), 1.617 (50), 2.101 (45), 2.971 (30), 1.0938 (30), 0.9704 (25)

Chemistry:

	(1)	(2)
SiO ₂	0.02	
TiO ₂	26.41	27.34
Al ₂ O ₃	4.83	3.33
Fe ₂ O ₃	28.27	27.01
Cr ₂ O ₃		0.13
FeO	10.32	14.62
MnO	0.76	1.89
MgO	29.62	26.47
Total	100.23	100.79

(1) Dupezeh Mountain, Iraq; by electron microprobe, average of four grains, Fe²⁺ and Fe³⁺ by wet methods; corresponds to $(\text{Mg}_{1.32}\text{Fe}_{0.41}^{3+}\text{Fe}_{0.26}^{2+}\text{Mn}_{0.02})_{\Sigma=2.01}(\text{Ti}_{0.60}\text{Fe}_{0.23}^{3+}\text{Al}_{0.17})_{\Sigma=1.00}\text{O}_4$.
(2) Konder massif, Russia; by electron microprobe.

Mineral Group: Spinel group.

Occurrence: In a forsterite skarn (Dupezeh Mountain, Iraq); in a periclase-forsterite skarn (Kangerdlugssuaq, Greenland); in the contact zone of an alkaline ultramafic massif (Konder massif, Russia).

Association: Forsterite, spinel, perovskite, calcite (Dupezeh Mountain, Iraq); geikielite, spinel, periclase, forsterite (Konder massif, Russia).

Distribution: On Dupezeh Mountain, near Hero Town, Qala-Dizeh, Iraq. From near Kangerdlugssuaq, Greenland. In the Konder massif, Aldan Shield, Sakha, Russia.

Name: For the occurrence in rocks of the Qandil Group, Iraq.

Type Material: Strathclyde University, Glasgow; Royal Scottish Museum, Edinburgh, Scotland; National Science Museum, Tokyo, Japan; National School of Mines, Paris, France.

References: (1) Al-Hermezi, H.M. (1985) Qandilite, a new spinel end-member, Mg_2TiO_4 , from the Qala-Dizeh region, NE Iraq. *Mineral. Mag.*, 49, 739–744. (2) (1988) *Amer. Mineral.*, 73, 930 (abs. ref. 1). (3) Wechsler, B.A. and R.B. Von Dreele (1989) Structure refinements of Mg_2TiO_4 , MgTiO_3 and MgTi_2O_5 by time-of-flight neutron powder diffraction. *Acta Cryst.*, 45, 542–549. (4) Oktyabrsky, R.A., S.A. Shcheka, A.M. Lennikov, and T.B. Afanasyeva (1992) The first occurrence of qandilite in Russia. *Mineral. Mag.*, 56, 385–389.

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.