Frohbergite $FeTe_2$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As thin (to 50 μm) reaction rims around chalcopyrite, and as inclusions; rarely in discrete grains.

Physical Properties: Hardness = 3–4 VHN = 250–297 D(meas.) = n.d. D(calc.) = 8.057

Optical Properties: Opaque. *Color:* In polished section, white with bluish or pinkish tint. *Luster:* Metallic. *Pleochroism:* Extremely weak. *Anisotropism:* Strong, red-orange to inky blue. R_1–R_2: (400) 56.7–57.1, (420) 54.8–56.2, (440) 52.9–55.3, (460) 51.9–54.5, (480) 51.1–53.8, (500) 50.6–53.1, (520) 50.1–52.6, (540) 50.0–52.4, (560) 50.2–52.5, (580) 50.7–53.0, (600) 51.4–53.8, (620) 52.2–54.5, (640) 53.0–55.4, (660) 53.9–56.3, (680) 55.0–57.4, (700) 56.2–58.5

Cell Data: *Space Group: Pnnm.* $a = 5.29$ $b = 6.27$ $c = 3.86$ Z = 2

X-ray Powder Pattern: Robb-Montbray mine, Canada.
2.81 (100), 2.71 (70), 2.07 (50), 1.846 (40), 3.29 (30), 1.940 (30), 1.577 (30)

Chemistry:

	(1)	(2)	(3)
Fe	18.1	18.3	17.94
Te	82.7	82.5	82.06
Total	100.8	100.8	100.00

(1) Robb-Montbray mine, Canada; by electron microprobe. (2) Noranda, Canada; by electron microprobe. (3) $FeTe_2$.

Polymorphism & Series: Forms a series with mattagamite.

Mineral Group: Marcasite group.

Occurrence: In hydrothermal ore deposits, rimming chalcopyrite grains, and as inclusions in gold, petzite, or chalcopyrite.

Association: Chalcopyrite, altaite, gold, melonite, petzite, montbrayite, sylvanite, tellurobismuthite, pyrite, sphalerite, marcasite, chalcocite, covellite.

Distribution: In Canada, from the Robb-Montbray [TL] and Noranda mines, Quebec; and at Lindquist Lake, British Columbia. From Gold Hill, north of San Simon, Cochise Co., Arizona, USA. At Bodennec, Finistère, France. From Faţa Băii (Facebánya) and Săcărîmb (Nagyág), Romania. At Jabal Sayid, Saudi Arabia. In the Kobetsuzawa gold mine, near Sapporo, Hokkaido, Japan. From the North Kalgurli mine, Kalgoorlie, and at Kambalda, Western Australia.

Name: Honors Dr. Max Hans Frohberg (1901–1970), Canadian mining geologist, Toronto, Canada.

Type Material: Royal Ontario Museum, Toronto, Canada, M31173.

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