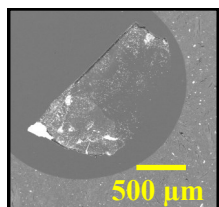


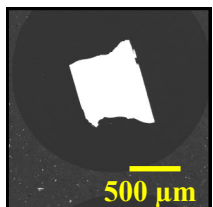
REE Phosphates: NMNH 168484 - 116499

CePO₄ NMNH 168484



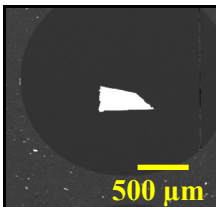
Ce	59.60
<u>PO₄</u>	<u>40.40</u>
TOTAL	100.00

DyPO₄ NMNH 168485



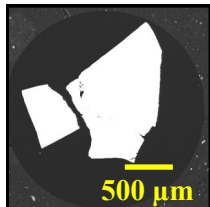
Dy	63.11
<u>PO₄</u>	<u>36.89</u>
TOTAL	100.00

ErPO₄ NMNH 168486



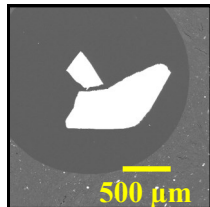
Er	63.78
<u>PO₄</u>	<u>36.22</u>
TOTAL	100.00

EuPO₄ NMNH 168487



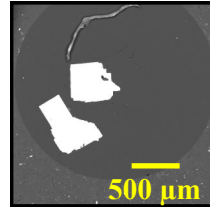
Eu	61.54
<u>PO₄</u>	<u>38.46</u>
TOTAL	100.00

GdPO₄ NMNH 168488



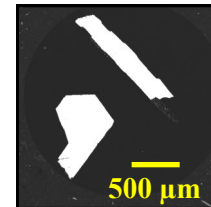
Gd	62.34
<u>PO₄</u>	<u>37.66</u>
TOTAL	100.00

HoPO₄ NMNH 168489



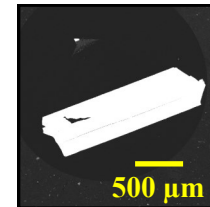
Ho	63.45
<u>PO₄</u>	<u>36.55</u>
TOTAL	100.00

LaPO₄ NMNH 168490



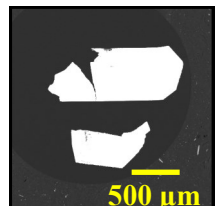
La	59.39
<u>PO₄</u>	<u>40.61</u>
TOTAL	100.00

LuPO₄ NMNH 168491



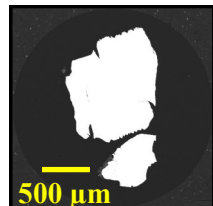
Lu	64.81
<u>PO₄</u>	<u>35.19</u>
TOTAL	100.00

NdPO₄ NMNH 168492



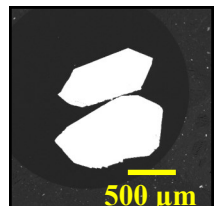
Nd	60.30
<u>PO₄</u>	<u>39.70</u>
TOTAL	100.00

PrPO₄ NMNH 168493



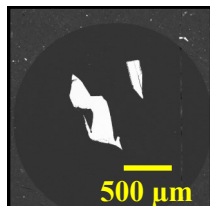
Pr	59.73
<u>PO₄</u>	<u>40.27</u>
TOTAL	100.00

SmPO₄ NMNH 168494



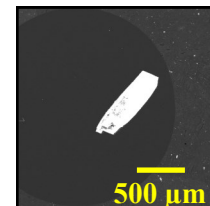
Sm	61.28
<u>PO₄</u>	<u>38.72</u>
TOTAL	100.00

ScPO₄ NMNH 168495



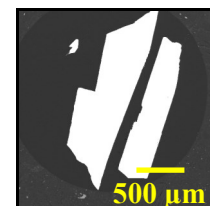
Sc	32.12
<u>PO₄</u>	<u>67.88</u>
TOTAL	100.00

TbPO₄ NMNH 168496



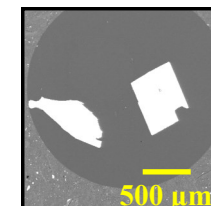
Tb	62.59
<u>PO₄</u>	<u>37.41</u>
TOTAL	100.00

TmPO₄ NMNH 168497



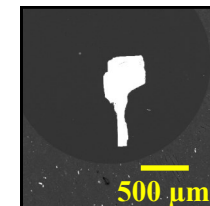
Tm	64.01
<u>PO₄</u>	<u>35.99</u>
TOTAL	100.00

YbPO₄ NMNH 168498



Yb	64.56
<u>PO₄</u>	<u>35.44</u>
TOTAL	100.00

YPO₄ NMNH 168499



Y	48.35
<u>PO₄</u>	<u>51.65</u>
TOTAL	100.00

Standard Specifics:

Grain sizes available are highly variable as the materials are unsieved.

Many of these have significant lead contamination (see Donovan et al., 2002, 2003).

References:

Donovan, J. et al. (2002) Contamination in the rare-earth element orthophosphate reference samples. *J. of Research of NIST*, 107, p. 693-701.

Donovan, J. et al (2003) A Re-examination of the Rare-Earth-Element Orthophosphate Standards in Use For Electron Microprobe Analysis. *Can. Min. vol. 41*, pp. 221-232.

Jarosewich, E. and Boatner, L. (1991) Rare-earth element reference samples for electron microprobe analysis. *Geostand. Newslett. 15 (2)*, p. 397-399.