

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

High pressure behavior of Cr₂O₃ to 62 GPa¹ KRYSTLE CATALLI, HYUNCHAE CYNN, WILLIAM J. EVANS, Lawrence Livermore National Lab — Corundum-structured oxides are of interest for a broad range of reasons, including their mineralogical occurrences and technological uses. The high pressure behavior of Cr₂O₃ is of particular interest due to the widespread use of ruby, (Al,Cr)₂O₃, as a pressure standard in diamond anvil cells experiments. Although there have been a number of high pressure studies on Cr₂O₃, discrepancies still exist among the different data sets. Here we present synchrotron X-ray diffraction data on the structure and compressional behavior of Cr₂O₃ to 62 GPa. Although no change in crystal structure is detected within the resolution of the measurements, a change in compressional behavior occurs near 30 GPa where Cr₂O₃ changes color from red to orange.

¹Prepared by LLNL under Contract DE-AC52-07NA27344. Work performed at HPCAT, Advanced Photon Source (APS), Argonne National Lab. HPCAT is supported through funding from DOE-NNSA, DOE-BES and NSF. APS is supported by DOE-BES.

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Date submitted: 11 Nov 2011

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