

Abstract Submitted
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Quasicrystal Growth and Thermal Expansion SALLY JUNE TRACY, JASON COOLEY, HEATHER VOLTZ, JASON LASHLEY, Los Alamos National Laboratory — We have grown Al-Mn-Pd and RE-MG-Zn quasicrystals (RE=Y, Er, Ho, Dy and Tb) from a high temperature metallic solution using a self-flux method with melt compositions presented in previous work by Canfield and Fisher.¹ The samples showed dodecahedral grains with pentagonal facets. The icosahedral structure was revealed with x-ray powder diffraction. We were able to index the diffraction patterns using Cahn's two index scheme.² We have measured the thermal expansion of these samples and will present this data.

¹High temperature solution growth of intermetallic single crystals and quasicrystals; Canfield, P.C. ; Fisher, I.R., Journal of Crystal Growth (May 2001) Vol. 255, is 2-4, p. 155-161

²Indexing of icosahedral quasiperiodic crystals; Cahn, J.W. ; Shechtman, D. ; Gratias, D., Journal of Materials Research (Jan.-Feb.) vol. 1, no. 1, p. 13-26

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