

**LOW OXYGEN CONTENT, CRACK-FREE HEUSLER AND HEUSLER-LIKE
ALLOYS & DEPOSITION SOURCES & METHODS OF MAKING SAME**

Abstract of the Disclosure

[0076] A method of forming Heusler or Heusler-like alloys of formula
5 X_2YZ or XYZ comprises providing a crucible comprised of at least one metal
oxide material thermodynamically stable to molten transition metals; supplying
predetermined amounts of constituent elements or master alloy materials of the
alloy to the crucible; and melting the constituent elements or master alloy
materials under vacuum or a partial pressure of an inert gas to form alloys
10 containing less than about 50 ppm oxygen. Crack-free alloys are formed by
casting the alloys in a mold utilizing a multi-stage stress-relieving, heat-assisted
casting process. Also disclosed are crack-free Heusler and Heusler-like alloys of
formula X_2YZ or XYZ containing less than about 50 ppm oxygen and deposition
sources, e.g., sputtering targets, fabricated therefrom.

15 FIG 5.