

ABSTRACT OF THE DISCLOSURE

RUTHENIUM ALLOY MAGNETIC MEDIA AND SPUTTER TARGETS

A magnetic recording medium having an underlayer comprised of ruthenium (Ru) and an alloying element is provided. The alloying element may be for refining grain size, when it has little or no solid solubility in HCP phase Ru and is present in an amount in excess of that solubility. The alloying element may be for reducing lattice misfit, where it has some solid solubility in HCP phase Ru and is present in an amount not exceeding that solubility. The alloying element may be for both refining grain size and reducing lattice misfit, where it has some solid solubility in HCP phase Ru and is present in an amount in excess of that solubility. The underlayer may alternately include ruthenium and two alloying elements, one for refining grain size, the other for reducing lattice misfit. A sputter target comprising ruthenium and an alloying element is also provided.