# 56Ni, Explosive Nucleosynthesis, and SNe Ia Diversity

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The origin of the iron-group elements titanium to zinc in nature is understood to occur under explosive burning conditions in both Type Ia (thermonuclear) and Type II (core collapse) supernovae. In these dynamic environments, the most abundant product is found to be 56Ni ({\tau} = 8.5 days) that decays through 56Co ({\tau} = 111.5 days) to 56Fe. For the case of SNe Ia, the peak luminosities are proportional to the mass ejected in the form of 56Ni. It follows that the diversity of SNe Ia reflected in the range of peak luminosity provides a direct measure of the mass of 56Ni ejected. In this contribution, we identify and briefly discuss the factors that can influence the 56Ni mass and use both observations and theory to quantify their impact. We address specifically the variations in different stellar populations and possible distinctions with respect to SNe Ia progenitors.

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