

- [54] **OXIDATION-RESISTANT NICKEL AND COBALT SULFIDES AND METHOD FOR PREPARING SAME**
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[57] **ABSTRACT**

The sulfides of nickel and cobalt prepared by sulfiding nickel and cobalt-enriched ammoniacal solutions oxidize rapidly (and often pyrophorically) when exposed to normal atmospheric conditions. The oxidized sulfides then react with water present in the atmosphere in a hydration reaction. This oxidation and hydration may increase the weight of the sulfides by as much as 150% or more, depending upon such factors as the type of sulfides involved and the duration of the exposure. However, when nickel sulfide, cobalt sulfide, or mixtures thereof are dried, dehydrated, heated at temperatures of about 1000°F. or higher in a substantially inert atmosphere, and then cooled in a substantially inert atmosphere, the sulfides can surprisingly be exposed to normal atmospheric conditions for prolonged periods of time without undergoing significant oxidation or hydration. Consequently, only minimal weight increases are observed with the treated sulfides. The invention is of particular utility where the sulfides must be shipped from one location to another for further processing and will be in transit or storage for long periods of time.

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27 Claims, 2 Drawing Figures

