

ABSTRACT

The present disclosure generally relates to certain compositions having components that can become liquid or exhibit a phase change during use, and methods related to the same. These can be used, for example, as thermal interface materials for various applications. Certain
5 thermal interface materials such as those discussed herein may represent a new structure in which the material is solid, but becomes liquid during use, which may improve heat transport, for example, because the liquid improves contact or binding of surfaces, thereby allowing improved heat transport across interfaces between surfaces. For example, in some cases, the composition may be a composite of a solid phase material and a phase change material. In
10 certain aspects, the phase change material exhibits a melt temperature, e.g., where the phase change material can transition from a liquid to a solid. The phase change material may include, for example, a metal, a metal oxide, a metal alloy, or the like. Other aspects generally relate to methods of making or using such compositions, kits including such compositions, or the like.