wherein the ratio of (b) to (c) is between 30 to 70 and 80 to 20 by weight percent, and wherein the weight percentages are based on the total volume of the composition, and wherein the composition has a thermal conductivity of at least about 3 W/m·K.

In one aspect, there is provided a thermally conductive polymer composition, comprising:

(a) less than 44 weight percent of at least one liquid crystalline polymer;

(b) about 10 to about 40 weight percent of graphite flake,

(c) about 10 to about 35 weight percent of talc having an average particle size between 10 μm and 100 μm,

(d) about 6 to about 25 weight percent of fibrous filler having an aspect ratio of between 3 and 20,

wherein the ratio of (b) to (c) is between 30 to 70 and 80 to 20 by weight percent, and wherein the weight percentages are based on the total volume of the composition, and wherein the composition has a thermal conductivity of at least about 3 W/m·K.

In another aspect, there is provided an article comprising the composition as defined herein.

Detailed Description of the Invention

By a "liquid crystalline polymer" (LCP) is meant a polymer that is anisotropic when tested using the TOT test or any reasonable variation thereof, as described in U.S. Patent 4,118,372, which is hereby incorporated by reference. Useful LCP's include polyesters, poly(ester-amides), and poly(ester-imides). One preferred form of LCP is "all aromatic", that is all of the groups in the polymer main chain are aromatic (except for the linking groups such as ester groups), but side groups that are not aromatic may be present.

The LCP's are typically derived from monomers that include aromatic hydroxycarboxylic acids, aromatic dicarboxylic acids, aliphatic dicarboxylic acids, aromatic diols, aliphatic diols, aromatic hydroxyamines, and aromatic diamines. For example, they may be aromatic polyesters that are obtained by polymerizing one or two or more aromatic hydroxycarboxylic acids; aromatic polyesters obtained by polymerizing aromatic dicarboxylic acids, one or two or more aliphatic dicarboxylic acids, aromatic diols, and one or two or more aliphatic diols, or aromatic hydroxycarboxylic acids; aromatic polyesters obtained by polymerizing one or two or more monomers selected from a group including aromatic dicarboxylic acids, aliphatic dicarboxylic acids, aromatic diols, and aliphatic diols, aromatic polyester amides obtained by polymerizing aromatic hydroxyamines, one or two or more aromatic diamines, and one or two or more aromatic hydroxycarboxylic acids; aromatic polyester amides obtained by polymerizing aromatic hydroxyamines, one or two or more aromatic diamines, one or two or more aromatic hydroxycarboxylic acids, aromatic dicarboxylic acids, and one or two or more aliphatic carboxylic acids; and aromatic polyester amides obtained by polymerizing aromatic hydroxyamines, one or two or more aromatic diamines, one or two or more aromatic hydroxycarboxylic acids, aromatic dicarboxylic acids, one or two or more aliphatic carboxylic acids, aromatic diols, and one or two or more aliphatic diols.