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(54) Title: QUATERNIZED FATTY AMINES, AMIDOAMINES, AND THEIR DERIVATIVES FROM NATURAL OIL META-THESIS

(57) Abstract: Quaternary ammonium, betaine, or sulfobetaine compositions derived from fatty amines, wherein the fatty amine is made by reducing the amide reaction product of a metathesis-derived C₁₀-C₁₇ monounsaturated acid, octadecene-1,18-dioic acid, or their ester derivatives and a secondary amine, are disclosed. Quaternary ammonium, betaine, or sulfobetaine compositions derived from fatty amidoamines, wherein the amidoamine is made by reacting of a metathesis-derived C₁₀-C₁₇ monounsaturated acid, octadecene-1,18-dioic acid, or their ester derivatives and an aminoalkyl-substituted tertiary amine, are also disclosed. The quaternized compositions are advantageously sulfonated or sulfitated. In one aspect, the ester derivative of the C₁₀-C₁₇ monounsaturated acid or octadecene-1,18-dioic acid is a lower alkyl ester. In other aspects, the ester derivative is a modified triglyceride made by self-metathesis of a natural oil or an unsaturated triglyceride made by cross-metathesis of a natural oil with an olefin. The quaternary ammonium, betaine, and sulfobetaine compositions and their sulfonated or sulfitated derivatives are valuable for a wide variety of end uses, including cleaners, fabric treatment, hair conditioning, personal care (liquid cleansing products, conditioning bars, oral care products), antimicrobial compositions, agricultural uses, and oil field applications.