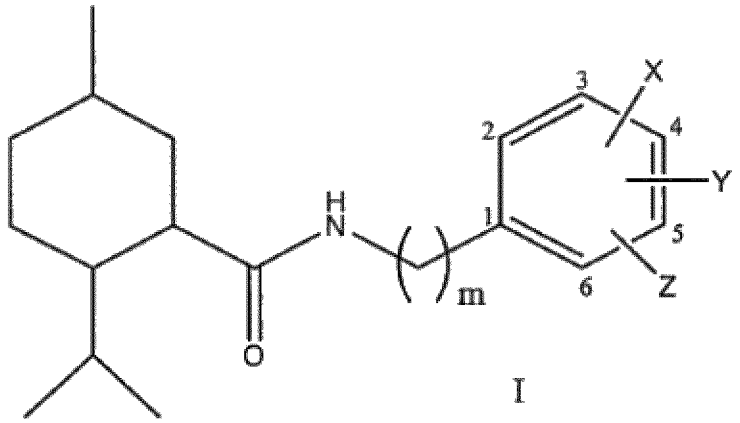
CM3773M

CLAIMS

What is claimed is:

1. A hair removal device comprising:
   a. a cartridge (14);
   b. one or more elongated edges (18) positioned on said cartridge; and
   c a skin engaging shaving aid member (22), positioned on said cartridge (14) and said skin engaging shaving aid member comprising:
   a. a matrix comprising at least one of: a water soluble polymer selected from polyethylene oxide, polyvinyl pyrrolidone, polyacrylamide, polyhydroxymethacrylate, polyvinyl imidazoline, polyethylene glycol, polyvinyl alcohol, polyhydroxyethymethacrylate, silicone polymers, and mixtures thereof, an emollient, a soap base, and a mixture thereof;
   b. a thermally resilient sensate comprising a N-substituted menthanecarboxamide having the formula:



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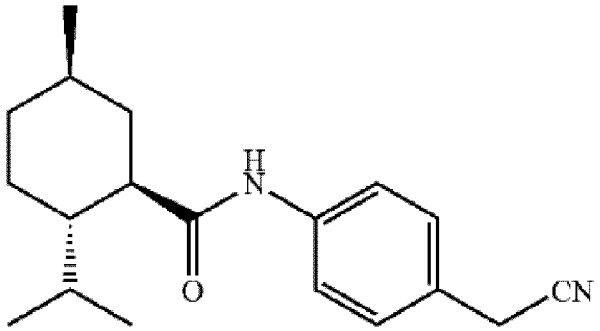
in which m is 0 or 1, Y and Z are selected independently from the group consisting of H. OH, C1-C4 straight or branched alkyl, or, a C1-C4 straight or branched alkoxy, X is (CH2)n-R, where n is 0 or 1 and R is a group with non-bonding electrons, selected from halogens, OH, OMe, NO2, CN, Ac, SO2NH2, CHO, CO2H and C1-C4 alkyl carboxylates with the provisos that: (a) when Y and Z are H. X is not F, OH, MeO or NO2 in the 4-position and is not OH in the 2 or 6-position, and (b) when Y or Z is H then

X, Y and Z are such that (i) the groups in the 3- and 4-positions are not both OMe, (ii) the groups in the 4- and 5-positions are not both OMe, (iii) the groups in 3- and 5- positions are not OMe if the group in the 4-position is OH, and (iv) the groups in the 3- and 5-positions are not OH if the group in the 4- position is methyl.

2. A hair removal device of claim 1, wherein X is in the 4-position, preferably wherein X is in the 4-position and Y and Z are H, OH, Me or OMe.

3. A hair removal device of claim 1, wherein said thermally resilient sensate comprises N-[4-(cyanomethyl)phenyl]-(1R,2S,5R)-2-isopropyl-5-methylcyclohexanecarboxamide of formula:



4. A hair removal device of any preceding claim, wherein the level of thermally resilient sensate is from 0.01% to 25%.

5. A hair removal device of any preceding claim, further comprising an additional cooling agent selected from the group consisting of: L-menthol; p-menthane-3,8-diol; Isopulegol; Menthoxypropane-1,2,-diol; Curcumin; Menthyl Lactate (such as Frescolat ML by Symrise); Gingerol; Icilin; Tea Tree Oil; Methyl Salicylate; Camphor; Peppermint Oil; N-Ethyl-p-menthane-3-carboxamide; Ethyl 3-(p-menthane-3-carboxamido)acetate; 2-Isopropyl-N,2,3-trimethylbutyramide; Menthone glycerol ketal, Menthone Glyerine Acetal; and mixtures thereof, preferably wherein said optional cooling agent is a mixture of menthol and menthyl lactate, more preferably

wherein the mixture of menthol and menthyl lactate is in a ratio of from 1:4 to 4:1 by weight.

6. A hair removal device of any preceding claim, wherein said matrix comprises a water soluble polymer.

7. A hair removal device of claim 6, wherein the water soluble polymer is present at a level of from 50% to 90% by weight of said matrix.

8. A hair removal device of any preceding claim, wherein said matrix further comprises a water insoluble polymer.

9. A hair removal device of claim 8, wherein said water insoluble polymer is selected from: polyethylene, polypropylene, polystyrene, high impact polystyrene, butadiene styrene copolymer, polyacetal, acrylonitrile-butadiene styrene copolymer, ethylene vinyl acetate copolymer, and mixtures thereof.

10. A hair removal device of claim 8 or 9 wherein said water insoluble polymer is present at a level of from 5% to 40%, preferably from 15% to 35% by weight of skin engaging shaving aid member.

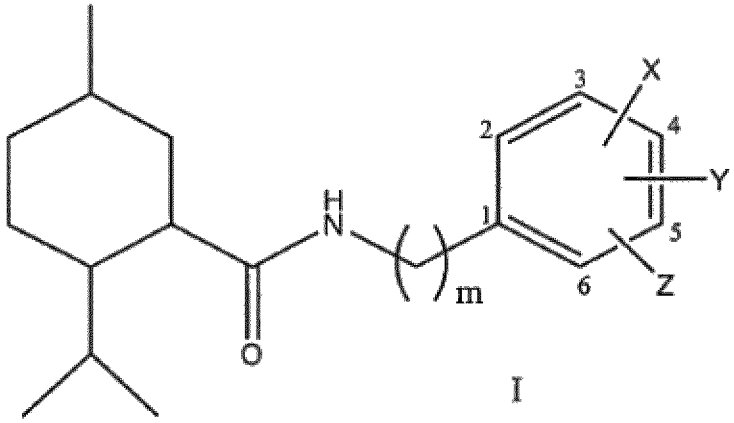
11. A hair removal device of any preceding claim, wherein said matrix further comprises a block polymer selected from the group consisting of: a di-block copolymer, a tri-block copolymer, a multi-block copolymer, a radial block copolymer, a random block copolymer, and mixtures thereof.

12. A method of making a hair removal device according to any preceding claim comprising the steps of:

a. providing a matrix comprising:
   i. at least one of: a water soluble polymer, selected from polyethylene oxide, polyvinyl pyrrolidone, polyacrylamide, polyhydroxymethacrylate,

polyvinyl imidazoline, polyethylene glycol, polyvinyl alcohol, polyhydroxyethymethacrylate, silicone polymers, and mixtures thereof, an emollient, a soap base, and a mixture thereof, and

ii. a thermally resilient sensate having the formula:



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in which m is 0 or 1, Y and Z are selected independently from the group consisting of H. OH, C1-C4 straight or branched alkyl, or, a C1-C4 straight or branched alkoxy, X is (CH2)n-R, where n is 0 or 1 and R is a group with non-bonding electrons, selected from halogens, OH, OMe, NO2, CN, Ac, SO2NH2, CHO, CO2H and C1-C4 alkyl carboxylates with the provisos that: (a) when Y and Z are H. X is not F, OH, MeO or NO2 in the 4-position and is not OH in the 2 or 6-position, and (b) when Y or Z is H then X, Y and Z are such that (i) the groups in the 3- and 4-positions are not both OMe, (ii) the groups in the 4- and 5-positions are not both OMe, (iii) the groups in 3- and 5- positions are not OMe if the group in the 4-position is OH, and (iv) the groups in the 3- and 5-positions are not OH if the group in the 4- position is methyl,

to form a feed;

a. preferably heating said feed to a temperature of from 120°C to 200°C, and

b. forming a skin engaging shaving aid member from said feed.

13. The method of claim 12, wherein said step of forming is selected from the group consisting of: extruding said feed into said skin engaging shaving aid member; molding

said feed into said skin engaging shaving aid member; injection molding said feed into said skin engaging shaving aid member; and a combination thereof.

The claims defining the invention are as follows:

1. A hair removal device comprising:

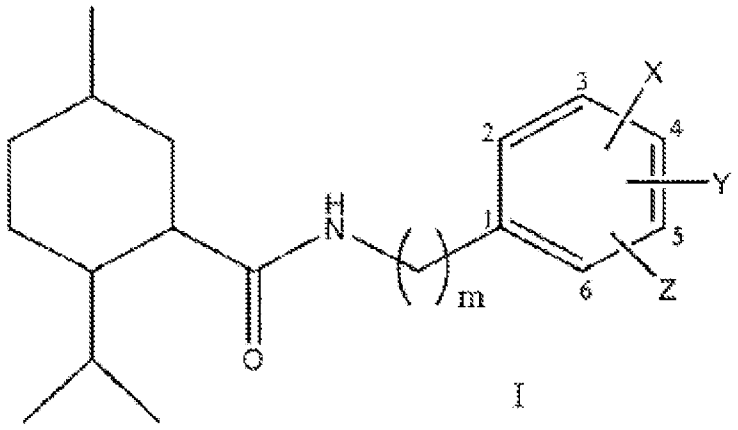
    a. a cartridge;

    b. one or more elongated edges positioned on said cartridge; and

    c. a skin engaging shaving aid member positioned on said cartridge and said skin engaging shaving aid member comprising:

    a. a matrix comprising at least one of: a water soluble polymer selected from polyethylene oxide, polyvinyl pyrrolidone, polyacrylamide, polyhydroxymethacrylate, polyvinyl imidazoline, polyethylene glycol, polyvinyl alcohol, polyhydroxyethymethacrylate, silicone polymers, and mixtures thereof, an emollient, a soap base, and a mixture thereof;

    b. a thermally resilient sensate comprising an N-substituted menthanecarboxamide having the formula:



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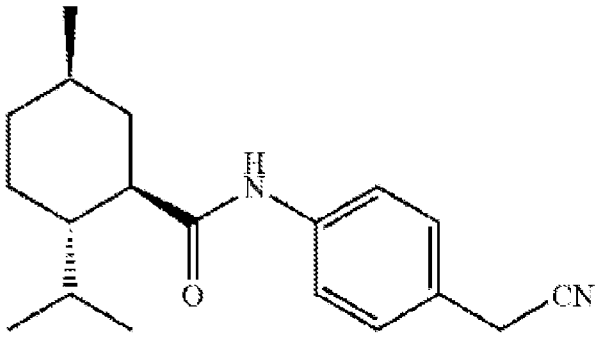
2. A hair removal device of claim 1, wherein X is in the 4-position, preferably wherein X is in the 4-position and Y and Z are H, OH, Me or OMe.

3. A hair removal device of claim 1, wherein said thermally resilient sensate comprises N-[4-(cyanomethyl)phenyl]-(1R,2S,5R)-2-isopropyl-5-methylcyclohexanecarboxamide of formula:



4. A hair removal device of any preceding claim, wherein the level of thermally resilient sensate is from 0.01% to 25%.

5. A hair removal device of any preceding claim, further comprising an additional cooling agent selected from the group consisting of: L-menthol; p-menthane-3,8-diol; Isopulegol; Menthoxypropane-1,2,-diol; Curcumin; Menthyl Lactate (such as Frescolat ML by Symrise); Gingerol; Icilin; Tea Tree Oil; Methyl Salicylate; Camphor; Peppermint Oil; N-Ethyl-p-menthane-3-carboxamide; Ethyl 3-(p-menthane-3-carboxamido)acetate; 2-Isopropyl-N,2,3-trimethylbutyramide; Menthone glycerol ketal, Menthone Glycrine Acetal; and mixtures thereof, preferably wherein said optional cooling agent is a mixture of menthol and menthyl lactate, more preferably wherein the mixture of menthol and menthyl lactate is in a ratio of from 1:4 to 4:1 by weight.

6. A hair removal device of any preceding claim, wherein said matrix comprises a water soluble polymer.

7. A hair removal device of claim 6, wherein the water soluble polymer is present at a level of from 50% to 90% by weight of said matrix.

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9. A hair removal device of claim 8, wherein said water insoluble polymer is selected from: polyethylene, polypropylene, polystyrene, high impact polystyrene, butadiene styrene copolymer, polyacetal, acrylonitrile-butadiene styrene copolymer, ethylene vinyl acetate copolymer, and mixtures thereof.

10. A hair removal device of claim 8 or 9 wherein said water insoluble polymer is present at a level of from 5% to 40%, preferably from 15% to 35% by weight of skin engaging shaving aid member.

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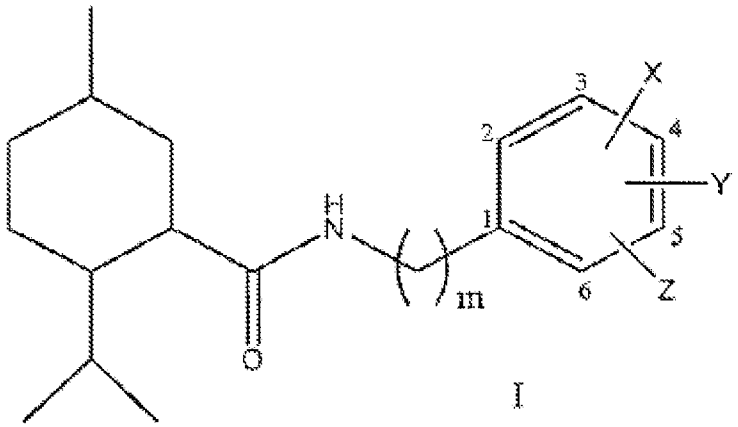
12. A method of making a hair removal device according to any preceding claim comprising the steps of:

a. providing a matrix comprising:
    i. at least one of: a water soluble polymer, selected from polyethylene oxide, polyvinyl pyrrolidone, polyacrylamide, polyhydroxymethacrylate, polyvinyl imidazoline, polyethylene glycol, polyvinyl alcohol, polyhydroxyethymethacrylate, silicone polymers, and mixtures thereof, an emollient, a soap base, and a mixture thereof, and

ii. a thermally resilient sensate having the formula:



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to form a feed;

b. preferably heating said feed to a temperature of from 120°C to 200°C, and

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13. The method of claim 12, wherein said step of forming is selected from the group consisting of: extruding said feed into said skin engaging shaving aid member; molding said feed into said skin engaging shaving aid member; injection molding said feed into said skin engaging shaving aid member; and a combination thereof.