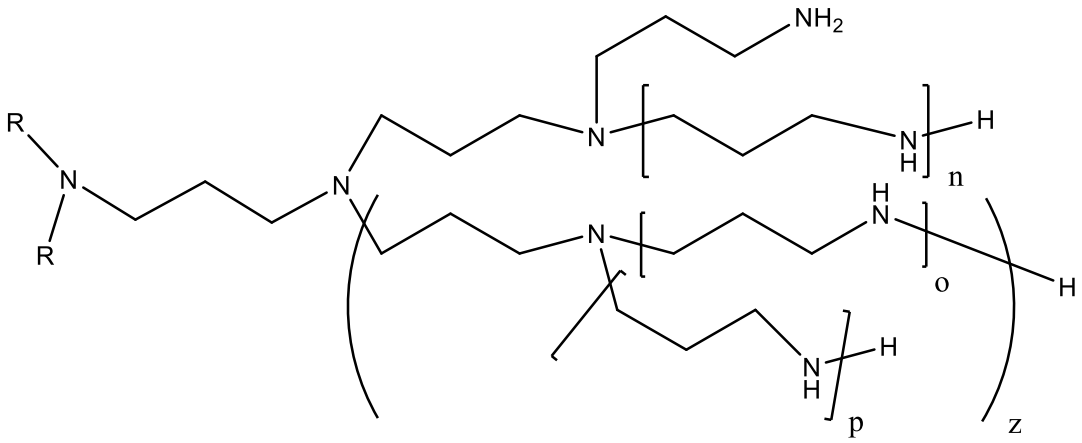
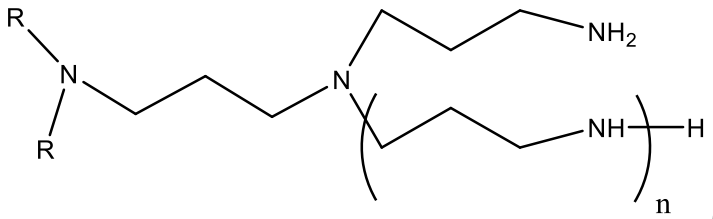
CLAIMS

1. A product resulting from the reaction of at least:

- a hydroxybenzoic acid, optionally substituted by a hydrocarbyl group,
- a boron compound,
- an amine component selected from a di-fatty-alkyl(ene) polyalkylamine composition comprising one or more polyalkylamines of formulae (I) or (II):



(I),



(II)

wherein,

- each R is, independent of the other R, an alkyl moiety or an alkylene moiety with 4 to 30 carbon atoms, which is linear or branched,
- n and z are independent of each other either 0, 1, 2, or 3, and
- when z is superior than 0 then o and p are independent of each other either 0, 1, 2, or 3,

or derivatives thereof selected from products wherein one or more of the NH moieties of the dialkyl polyalkylamines are methylated, alkoxylated, or both,

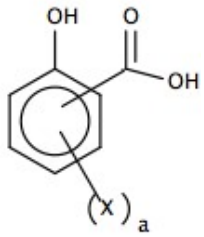
whereby said polyalkylamine composition comprises at least 3% by weight of branched compounds of formula (I) or (II), with regards to the total weight of polyalkylamine compounds (I) and (II) in the composition, branched compound signifying that:

- in formula (I) at least one of n and z are superior or equal to 1,

- in formula (II) n is superior or equal to 1.

2. The product according to claim 1, wherein the hydroxybenzoic acid, optionally substituted by a hydrocarbyl group, is selected from mono-alk(en)yl substituted salicylic acids, di-alk(en)yl substituted salicylic acids, acid functionalized calixarenes, notably salicylic acid calixarenes, and mixtures thereof.

3. The product according to claim 1 or claim 2, wherein the hydroxybenzoic acid compounds, optionally substituted by a hydrocarbyl group, responds to formula (III):



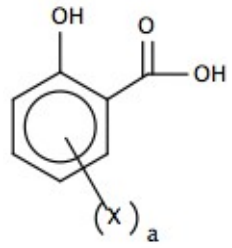
(III)

Wherein:

X represents a hydrocarbyl with 1 to 50 carbon atoms, and X can comprise one or more heteroatoms,

a is an integer, a represents 0, 1 or 2.

4. The product according to claim 3, wherein the hydroxybenzoic acid compounds, optionally substituted by a hydrocarbyl group, responds to formula (IIIA):



(IIIA)

5. The product according to claim 4, wherein the hydroxybenzoic acid compounds is salicylic acid.

6. The product according to anyone of the preceding claims, wherein the boron compound is selected from: boric acid, boric acid complexes, boric oxide, a trialkyl borate in which the alkyl groups comprise independently from 1 to 4 carbon atoms, a C_1-C_{12} alkyl boronic acid, a C_1-C_{12} dialkyl boric acid, a C_6-C_{12} aryl boric acid, a C_6-C_{12} diaryl boric acid, a C_7-C_{12} aralkyl boric acid, a C_7-C_{12} diaralkyl boric acid, and products deriving from these by substitution of an alkyl group by one or more alkoxy unit.

7. The product according to claim 6, wherein the boron compound is boric acid.

8. The product according to anyone of the preceding claims, wherein the polyalkylamine composition comprises at least 4 %w/w, at least 5 %w/w, at least 6 %w/w, at least 7%w/w, or at least 7,5%w/w of branched compounds of formula (I) or (II), with regards to the total weight of polyalkylamine compounds (I) and (II) in the composition, branched compound signifying that:

- in formula (I) at least one of n or z are superior or equal to 1,
- in formula (II) n is superior or equal to 1.

9. The product according to anyone of the preceding claims, wherein the polyalkylamine composition comprises at least 5% by weight, with regards to the total weight of compounds (I) and (II), of products of formulae (I) and (II) with a linear structure, linear meaning n is 0 in formulae (I) and (II) and z is 0 in formula (I).

10. The product according to anyone of the preceding claims, wherein the polyalkylamine composition further comprises derivatives of polyalkylamines of formula (I) or (II), said derivatives are alkoxylates which are optionally methylated.

11. The product according to anyone of the preceding claims, wherein the polyalkylamine composition further comprises derivatives of polyalkylamines of formula (I) or (II), said derivatives are methylated.

12. The product according to anyone of the preceding claims, wherein each R is, independent of the other R, selected from linear or branched alkyl groups and alkenyl groups comprising 8 to 22 carbon atoms preferably with 14 to 18 carbon atoms, more preferably with 16 to 18 carbon atoms.

13. The product according to claim 12, wherein R groups are derived from animal and vegetal oils and fats, such as from tallow oil, colza oil, sunflower oil, soya oil, flax oil, olive oil, palm oil, castor oil, wood oil, corn oil, squash oil, grapeseed oil, jojoba oil, sesame oil, walnut oil, hazelnut oil, almond oil, shea oil, macadamia oil, cotton oil, alfalfa oil, rye oil, safflower oil, peanut oil, coconut oil and copra oil, and mixtures thereof, preferably from tallow oil.

14. A lubricant composition comprising a product according to anyone of claims 1 to 13 and a base oil.

15. Use of a product according to anyone of claims 1 to 13 or a lubricant composition according to claim 14, for lubricating two-stroke marine engines and four-stroke marine engines, more preferably two-stroke marine engines.