CLAIMS

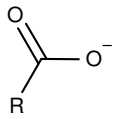
1. Use of an ammonium-based ionic liquid compound in a lubricant composition, ~~preferably a marine lubricant,~~ to reduce and/or limit and/or prevent and/or delay the formation of deposits or to reduce the deposits already present in the internal parts of a combustion engine wherein the ammonium-based ionic liquid compound responds to formula (I)

$$[CAT^+]\ [X^-] \quad (I)$$

wherein

$[CAT^+]$ is tri-n-octylmethylammonium and

$[X^-]$ is selected from compounds of formula (IA):



(IA)

wherein R is selected from linear or branched alkyl and alkenyl groups comprising from 2 to 8 atoms of carbon.

2. Use according to claim 1 wherein in formula (IA) R represents a linear or branched alkyl group comprising from 2 to 8 atoms of carbon.

3. Use according to claim 2 wherein in formula (IA) R represents a linear or branched alkyl group comprising from 4 to 8~~, preferably from 5 to 7~~ carbon atoms.

4. Use according to claim 3 wherein R represents a linear or branched alkyl group comprising from 5 to 7 carbon atoms.

~~4~~5. Use according to claim 3 or claim 4 wherein $[X^-]$ is 2-ethylhexanoate.

6. Use according to anyone of claims 1 to 5 wherein the lubricant composition is a marine lubricant.

~~5~~7. A lubricant composition comprising:

- from 30.0 to 94.0 % of at least one base oil,

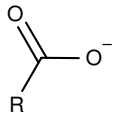
- from 0.05 to 15 % of at least one ammonium-based ionic liquid of formula (I),

$$[CAT^+]\ [X^-]\ (I)$$

wherein

$[CAT^+]$ is tri-n-octylmethylammonium and

$[X^-]$ is selected from compounds of formula (IA):



(IA)

wherein R is selected from linear or branched alkyl and alkenyl groups comprising from 2 to 8 atoms of carbon, and

- from 1 to 35 % of at least one detergent selected from neutral and overbased detergents, other than the ionic liquid, having a Total Base Number according to ASTM D2896 of from 20 to 450 mg KOH/g

the percentages being defined by weight of component as compared to the total weight of the composition.

~~6~~8. The lubricant composition according to claim ~~5~~ 7, wherein the percentage by weight of ammonium-based ionic liquid relative to the total weight of lubricant composition is chosen such that the BN provided by the ammonium-based ionic liquid represents at least 3% of the total BN of said lubricant composition.

~~7~~9. The lubricant composition according to claim ~~5~~ 7 or claim ~~6~~ 8, wherein the percentage by weight of ammonium-based ionic liquid of formula (I), relative to the total weight of lubricant composition, is chosen such that the BN provided by the compounds of formula (I) represents a contribution of at least 0.5 milligrams of potash per gram of lubricant, ~~preferably at least 2 milligrams of potash per gram, more preferably at least 3 milligrams of potash per gram~~ to the total BN of said lubricant composition.

~~8~~10. The lubricant composition according to ~~claim 5 or claim 7~~ any one of claims 7 to 9, which has a Total Base Number (TBN) value according to ASTM D2896 of above 5 mg KOH/g.

~~9~~11. The lubricant composition according to any one of claim ~~5~~ 7 to claim ~~8~~ 10, which has a kinematic viscosity at 100°C superior or equal to 5.6 mm^2/s and inferior or equal to 21.9 mm^2/s.

~~10~~12. A lubricant composition comprising:

- from 30.0 to 99.95 % of at least one base oil,
- from 0.05 to 15.0 % of tri-n-octylmethylammonium 2-ethylhexanoate,

the percentages being defined by weight of component as compared to the total weight of the composition.

~~11~~13. The lubricant composition according to claim ~~10~~ 12, wherein it comprises at least one detergent selected from neutral and overbased detergents, other than the ionic liquid, having a Total Base Number according to ASTM D2896 of from 20 to 450 mg KOH/g.

~~12~~14. Method for lubricating a two-stroke marine engine and four-stroke marine engine, ~~preferably two-stroke marine engine,~~ said method comprising application to said marine engine of a lubricant composition as defined in claims ~~5 to 11~~ 7 to 13.

15. Method according to claim 14 wherein the marine engine is a two-stroke marine engine.

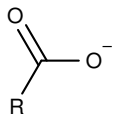
~~13~~16. Method to reduce and/or limit and/or prevent and/or delay the formation of deposits or to reduce the deposits already present in the internal parts of a combustion engine, wherein said method comprises at least a step of application to said engine of an ammonium-based ionic liquid compound wherein the ammonium-based ionic liquid compound responds to formula (I)

$$[CAT^+]\ [X^-] \quad (I)$$

wherein

$[CAT^+]$ is tri-n-octylmethylammonium and

$[X^-]$ is selected from compounds of formula (IA):



(IA)

wherein R is selected from linear or branched alkyl and alkenyl groups comprising from 2 to 8 atoms of carbon.

~~14~~17. The method according to claim ~~13~~ 16, wherein the ammonium-based ionic liquid compound of formula (I) is tri-n-octylmethylammonium 2-ethylhexanoate.

~~15~~18. The method according to claim ~~13~~ 16 or claim ~~14~~ 17, wherein the ammonium-based ionic liquid compound of formula (I) is applied in a lubricant composition comprising:

- from 30.0 to 99.95 % of at least one base oil,
- from 0.05 to 15.0 % of ammonium-based ionic liquid compound of formula (I).