

AMENDED CLAIMS
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1. Anti-scratch and photochromic coating applied in the form of varnish having the following composition by weight:

- 33% to 75% of a mixture of alkoxy silanes;
- 5% to 50% of plasticizers;
- 0.5% to 2.5% of photochromic dyes;
- 5% to 15% of additives such as 4,4'-isopropylidenediphenol and/or 4,4'-sulphonildiphenol and/or 1,3,5-trimethyl-2,4,6-tris (3,5-di-t-butyl-4-hydroxybenzyl) benzene and/or 1-methylimidazole and/or 2-(2-hydroxy-5-methylphenyl) benzotriazole and/or 2-hydroxy-4-methoxybenzophenone and/or 2-hydroxybenzophenone and/or 2-(2H-benzotriazol-2-yl)-4,6-di-t-pentilphenol and/or 2,2'-dihydroxy-4-methoxybenzophenone and/or 1H,1H,2H,2H-perfluorooctyl triethoxysilane and/or 1H,1H,2H,2H-perfluorodecyl triethoxysilane and/or 3-methyl-2-buten-1-ol and/or a non-ionic, surfactant polyol with the chemical structure $H(OC_2H_2O)_{101}(OCH_2CH_3CH)_{56}(OCH_2CH_2)_{101}OH$.

2. Anti-scratch and photochromic coating according to the previous claim, wherein the additives comprise colour stabilizers, UV blockers, antioxidants, and surfactants.

3. Anti-scratch and photochromic coating according to any one of the previous claims, wherein the alkoxy silanes are chosen from the following group: methyltriethoxysilane and/or (3-glycidoxypropyl) methyldiethoxysilane and/or tetraethoxysilane and/or vinyltriethoxysilane and/or (3-mercaptopropyl) trimethoxysilane and/or (3-aminopropyl) triethoxysilane and/or phenyltriethoxysilane and/or isocyanate-propyl-triethoxysilane.

4. Anti-scratch and photochromic coating according to any one of the previous claims, wherein the plasticizers are amines and/or diamines and/or polyethylene glycols.

5. Anti-scratch and photochromic coating according to any one of the previous claims, comprising the presence of a catalyst.

6. Anti-scratch and photochromic coating according to the previous claim, wherein the catalyst is acetic acid, hydrochloric acid, nitric acid, sulphuric acid.

7. Ophthalmic lens characterized by comprising the anti-scratch and photochromic coating described in any one of claims 1 to 6.

8. Application method of the anti-scratch and photochromic coating described in any one of claims 1 to 6, comprising the following steps:

- Preparation of a solution containing at least one photochromic dye, a mixture of additives and a mixture of silanes and plasticizers comprising the steps of:
 - elaboration of a mixture of photochromic dye and additives using an organic solvent;
 - elaboration of a mixture of alkoxy silanes and plasticizers with a solvent;
 - addition of spacers to the mixture obtained in the previous step;
 - addition of the mixture obtained in the first step to the mixture obtained in the previous step.
- Deposition of this mixture on at least one of the sides of the lens;
- Polymerization and hardening heat treatment of said

coating;

- A multilayer treatment.

9. Application method of the anti-scratch and photochromic coating according to the claim 8, wherein the deposition of the mixture over the side of the lens is made by spin-coating.

10. Application method of the anti-scratch and photochromic coating according to any one of claims 8 and 9, wherein the deposition of the mixture over the side of the lens is made by dip-coating.

11. Application method of the anti-scratch and photochromic coating according to any one of claims 8 to 10, wherein the polymerization and hardening heat treatment comprises placing the ophthalmic lens in an oven between 50-100°C, in horizontal position during between 12 and 48 hours.

12. Application method of the anti-scratch and photochromic coating according to any of claims 8 to 10, wherein the polymerisation and hardening of heat treatment comprises subjecting the ophthalmic lens to an irradiation with UV or IR light.

13. Application method of the anti-scratch and photochromic coating according to any one of claims 8 to 12, wherein the multilayer treatment comprises subjecting the lens to the electron beam vapour deposition technique, being applied oxide layers alternating between low refractive index material and high refractive index material.

14. Application method of the anti-scratch and photochromic

coating according to the previous claim, wherein the layer of $\text{In}_2\text{O}_3\text{-SnO}_2$ is applied between the different layers of oxides by means of electron beam vapour deposition technique.