CLAIMS

WHAT IS CLAIMED IS:

1. A composition useful as a thermal resistant water washable protective coating in laser machining, said composition comprising from about ~~1~~5-~~70~~50% by weight of a water soluble ultraviolet light absorbing compound, disodium distyrylbiphenyl di sulfonate and from about 30-99% by weight of at least one water soluble polymer dispersed or dissolved in water selected from , polyester or poly-2-ethyl-2-oxazoline; said ultraviolet light absorbing compound and water soluble polymer percentages by weight being based upon the total weight of the solids taken as 100% by weight~~, wherein said water soluble ultraviolet light absorbing compound has a melting point greater than 250 degrees centigrade, and said water soluble polymer is thermoplastic with a thermal viscosity at 200 degrees centigrade of greater than 50,000 centipoise~~.

~~2. The composition of claim 1, where the weight % of the water soluble ultraviolet light absorbing compound that has a melting point greater than 250 degrees centigrade is 5-50% being based upon the total weight of the solids taken as 100% by weight.~~

~~3.~~2. The composition of claim 1, wherein the weight % of the ~~water soluble ultraviolet light absorbing compound that has a melting point greater than 250 degrees centigrade~~ disodium distyrylbiphenyl disulfonate is 8-40% being based upon the total weight of the solids taken as 100% by weight.

~~4.~~3. The composition of claim 1, wherein the weight % of the disodium distyrylbiphenyl disulfonate~~water soluble ultraviolet light absorbing compound that has a melting point greater than 250 degrees centigrade~~ is 10-30% being based upon the total weight of the solids taken as 100% by weight.

~~5. The composition of claim 1, wherein said water soluble ultraviolet light absorbing compound that has a melting point greater than250 degrees centigrade comprises distyrylbiphenyl.~~

~~6. The composition of claim 5, wherein said distyrylbiphenyl is the salt of the cation lithium, sodium, or potassium.~~

~~7. The composition of claim 5, wherein said distyrylbiphenyl is the salt of sodium, stated as disodium distyrylbiphenyl di sulfonate.~~

~~8. The composition of claim 1, wherein said water soluble polymer that is thermoplastic with a thermal viscosity at 200 degrees centigrade of greater than 50,000 centipoise comprises polyester.~~

~~9. The composition of claim 1, wherein said water soluble polymer that is thermoplastic with a thermal viscosity at 200 degrees centigrade of greater than 50,000 centipoise comprises poly-2-ethyl-2-oxazoline.~~

~~10.~~4. The composition of claim 1, wherein said thermal resistant water washable protective coating also comprises a rinse aid.

~~11.~~5. The composition of claim ~~10~~4, wherein said rinse aid comprises lithium styrene sulfonate.

~~12.~~6. A laser machining method, comprising applying a thermal resistant water washable protective coating using the composition as claimed in any one of the claims 1 to 5 to a substrate; allowing the applied coating to be condensed and hardened; and laser machining the substrate.

~~13.~~7. The laser machining method of claim ~~12~~6, wherein said laser interacts with the thermal resistant water washable protective coating on the substrate surface and clears the coating at the point of contact by using a number of laser contact cycles to the said coating on the substrate surface to produce a thermal resistant and water washable protective mask.

~~14.~~8. The laser machining method of claim ~~13~~7, wherein the number of cycles of laser contact to clear the thermal resistant water washable protective coating on the substrate surface to produce a thermal resistant and water washable protective mask is less than 5.

~~15.~~9. The laser machining method of claim ~~13~~7, wherein the number of cycles of laser contact to clear the thermal resistant water washable protective coating on the substrate surface to produce a thermal resistant and water washable protective mask is less than 3.

~~16.~~10. The laser machining method of claim ~~13~~7, wherein the number of cycles of laser contact to clear the thermal resistant water washable protective coating on the

substrate surface to produce a thermal resistant and water washable protective mask is 1.

~~17.~~11. The laser machining method of claim ~~13~~7, further comprising processing said substrate surface containing the thermal resistant and water washable protective mask, wherein said processing comprises plasma etching with a measured total selectivity of ~~<~~ greater than 25:1, where the selectivity represents the total plasma preparation and etch process for removal of silicon compared to removal of said mask as Si mask.

~~18.~~12. The laser machining method of claim ~~17~~11, wherein the total selectivity of the plasma etch process is greater than 25:1 and less than 50:1, where the selectivity represents the total plasma preparation and etch process for removal of silicon compared to removal of said mask as Si mask.

~~19.~~13. The laser machining method of claim ~~17~~11, wherein the total selectivity of the plasma etch process is greater than 50:1, where the selectivity represents the total plasma preparation and etch process for removal of silicon compared to removal of said mask as Si mask.

~~20.~~14. The laser machining method of claim ~~12~~6, wherein the laser machining of the substrate comprises producing a semiconductor device.

~~21.~~15. The laser machining method of claim ~~12~~6, wherein the laser machining of the substrate comprises producing a display devices.

~~22.~~16. The laser machining method of claim ~~12~~6, wherein the laser machining of the substrate comprises producing a microelectromechanical system (MEMS).