

CLAIMS

We claim:

1. An optical product comprising:
 - 5 a) a polymer substrate;
 - b) a composite coating, deposited on the polymer substrate, comprising at least a first layer and a second layer, each of the first and second layers comprising a binding group component which together form a complementary binding group pair;
 - 10 c) a permeating adhesive, which permeates the composite coating and is in contact with the polymer substrate; and
 - d) a protective layer, secured to the composite coating by the permeating adhesive.
2. The optical product of claim 1, wherein the permeating adhesive
15 comprises at least one of a pressure sensitive adhesive, a wet-bond laminating adhesive, and a structural adhesive.
3. The optical product of claim 1, wherein the viscosity of the permeating adhesive prior to the permeating adhesive permeating the composite coating is from 20 to 500 cps.
- 20 4. The optical product of claim 1, wherein the polymer substrate is selected from the group consisting of a polyvinyl butyral film, a flexible polyurethane film, a flexible polyethylene terephthalate film, a flexible poly(vinyl chloride) film, and a flexible multilayer polymer composite film.
- 25 5. The optical product of claim 1, wherein the protective layer is selected from the group consisting of a polyvinyl butyral film, a flexible polyurethane film, a flexible polyethylene terephthalate film, a flexible poly(vinyl chloride) film, and a flexible multilayer polymer composite film.

6. The optical product of claim 1, wherein the composite coating has a total thickness of 5 nm to 300 nm.
7. The optical product of claim 1, wherein the first layer of the composite coating is immediately adjacent to the polymer substrate at its first face and the second layer of the composite coating is immediately adjacent to the first layer at its opposite face.
8. The optical product of claim 1, wherein at least one of the first and second layers of the composite coating comprises a polyionic binder.
9. The optical product of claim 1, where at least one of the first and second layers comprises an electromagnetic energy-absorbing particle that is a particulate pigment.
10. The optical product of claim 1 wherein at least one of said first layer and said second layer of said composite coating is formed from an aqueous solution.
11. The optical product of claim 1 wherein the optical product has a Tvis of no more than 50%.
12. The optical product of claim 1, wherein the optical product has a Tvis of no less than 80%.
13. The optical product of claim 1, wherein the polymer substrate is a flexible multilayer polymer composite film.
14. The optical product of claim 1, wherein the optical product is a composite for coloring an opaque article by application thereto.
15. A method of forming an optical product, comprising:
depositing on a polymer substrate a composite coating comprising at least a first layer and a second layer, each of the first and second layers comprising a binding group component which together form a complementary binding group pair;

applying a permeating adhesive to the composite coating, which permeating adhesive permeates the composite coating so as to contact the polymer substrate; and

securing a protective layer to the composite coating, by contacting the
5 protective layer with the permeating adhesive on a surface of the composite coating.

16. The method of claim 15, wherein the viscosity of the permeating adhesive prior to the permeating adhesive being applied to the composite coating is from 20 to 500 cps.

10 17. The method of claim 15, wherein the composite coating has a total thickness of 5 nm to 300 nm.

18. The method of claim 15, wherein the first layer of the composite coating is immediately adjacent to the polymer substrate at its first face and the second layer of the composite coating is immediately adjacent to the first
15 layer at its opposite face.

19. The method of claim 15, wherein at least one of the first and second layers of the composite coating comprises a polyionic binder.

20. The method of claim 15, where at least one of the first and second layers comprises an electromagnetic energy-absorbing particle that is a
20 particulate pigment.