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(54) Title: METHOD OF PROTECTING SECURITY ELEMENTS FROM HEAT DEGRADATION DURING A HEAT-SEALING PROCESS

(57) Abstract: A blister pack includes a housing having a plurality of cavities and a cover sealed to the housing and enclosing the cavities. The cover includes a base layer, at least one security element, and a heat protection layer. The heat protection layer includes one of an amorphous polymer and a semi-crystalline polymer.



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AMENDED CLAIMS

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CLAIM AMENDMENTS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. A blister pack, comprising:
a housing having a plurality of cavities;
a cover sealed to said housing and enclosing said cavities, said cover including a base layer, a security layer including at least one security element, and a heat protection layer; and
wherein said heat protection layer is comprised of at least one selected from the group of: an amorphous polymer, and a semi-crystalline polymer.

2. A method of protecting security elements deposited on a substrate from heat degradation during a heat-sealing process, said method comprising the steps of: defining a security element on said substrate;
coating said security element with a heat resistant coating formed from a semi-crystalline polymer;
and
sealing said coated substrate to a package housing.

3. The method according to claim 2, wherein:
said security element is a holographic element.

4. The method according to claim 2, wherein:
said semi-crystalline polymer is chosen from the group consisting of: acrylic, polyester and polyurethane semi-crystalline polymers and combinations thereof.

5. The method according to claim 2, wherein:
said sealing is accomplished with a die, said die having a substantially uniform heating profile.

6. A method of protecting security elements deposited on a substrate from heat degradation during a heat-sealing process, said method comprising the steps of: defining a security element on said substrate;
coating said security element with a heat resistant coating formed from a semi-crystalline polymer;
defining a thickness of said semi-crystalline polymer in dependence upon a predetermined heat profile to be used during said heat-sealing process; and
sealing said coated substrate to a package housing with said predetermined heat profile.

7. The method according to claim 6, wherein:
said security element is a holographic element.

8. The method according to claim 6, wherein:
said semi-crystalline polymer is chosen from the group consisting of: acrylic, polyester and polyurethane semi-crystalline polymers and combinations thereof.

9. The method according to claim 6, wherein:
said sealing is accomplished with a die, said die having a substantially uniform heating profile.
10. A multi-layer film comprising:
a base layer;
a security element atop the base layer; and,
a protection layer atop the security element;
wherein the protection layer is comprised of a polymer material;
wherein said polymer material is at least one selected from the group of: an amorphous polymer,
and a semi-crystalline polymer; and,
wherein said polymer material is further configured to act as a heat sink for protection of the at
least one security element.
11. The multi-layer film of claim 10 further comprising an application of an additional layer
atop the protection layer.
12. The multi-layer film of claim 11 wherein the additional layer is at least one of: a masking
ink, a friction reducing coating, or a strength enhancing film.
13. (Cancel)
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15. The multi-layer film of claim 10 wherein the polymer material is PMMA.
16. The multi-layer film of claim 10 wherein the polymer material has a T_g greater than the temperature at which damage would occur to the security element.
17. The multi-layer film of claim 10 wherein the security element is at least one of a: hologram, microprinted image, security strip, or an embossing.
18. The multi-layer film of claim 10 wherein the protection layer is applied to the security layer in discrete patches corresponding to the at least one security element.
19. The multi-layer film of claim 10 wherein the protection layer varies in thickness over the security element.
20. The multi-layer film of claim 10 wherein the protection layer is also configured as a primer.
21. The multi-layer film of claim 10 wherein the multi-layer film is applied to a blister pack.
22. The multi-layer film of claim 21 wherein the security element is centered over at least one well of the blister pack.

23. The multi-layer film of claim 21 wherein an activation energy seals the film to the blister pack and wherein the protection layer protects the security element from the activation energy.

24. A method of forming a multi-layer film comprising:
providing a base layer;
forming a security layer with at least one security element; and,
forming a protection layer.

25. The method of claim 24 wherein the protection layer is at least one of a semi-crystalline or amorphous polymer material.

26. The method of claim 24 wherein the security element is a hologram.

27. The method of claim 24 further comprising:
placing the multi-layer film over a blister pack;
aligning at least one security element over at least one well of the blister pack; and, applying an activation energy.

28. The method of claim 27 further comprising:
applying an additional layer.

29. A method of using a semi-crystalline or amorphous polymer material having a T_g of greater than or equal to about 85°C is provided, the method comprising using the polymer material to form at least one of a security layer and a heat protection layer of a blister pack, the blister pack including a housing having a plurality of cavities, and a cover sealed to the housing and enclosing the cavities, the cover including a base layer, the security layer, which includes at least one security element, and optionally, the heat protection layer.

30. A multi-layer film is provided, which is suitable for use in a blister pack, and which comprises a base layer, a security layer including at least one security element, and optionally, a heat protection layer, wherein at least one of the security layer and the heat protection layer comprises a semi-crystalline or amorphous polymer material having a T_g of greater than or equal to about 85°C.

31. A blister pack is provided that includes a housing having a plurality of cavities, and a cover sealed to the housing and enclosing the cavities, the cover including a base layer, a security layer including at least one security element, and optionally, a heat protection layer, wherein at least one of the security layer and the heat protection layer comprises a semi-crystalline or amorphous polymer material having a T_g of greater than or equal to about 85°C.

32. The blister pack of claim 31, wherein the security layer comprises a semi-crystalline or amorphous polymer material having a T_g of greater than or equal to about 85°C.

33. The blister pack of claim 31, wherein the blister pack includes a heat protection layer that comprises a semi-crystalline or amorphous polymer material having a T_g of greater than or equal to about 85°C.

34. The blister pack of claim 31, wherein the blister pack includes a heat protection layer and both the heat protection layer and the security layer each comprise a semi-crystalline or amorphous polymer material having a T_g of greater than or equal to about 85°C.