CLAIMS

What is claimed is:

1. A one-component adhesive composition comprising: (a) a free radically polymerizable component comprising at least one free radically polymerizable compound; (b) an impact modifier; (c) an adhesion promoter; (d) a toughener; (e) a cure accelerant; (f) an encapsulated free radical forming compound; and optionally (g) a thixotropic modifier.

2. The one-component adhesive composition of claim 1, wherein the free radically polymerizable compound comprises a (meth)acrylate terminated urethane.

3. The one-component adhesive composition of claim 2, wherein the free radically polymerizable component further comprises an epoxy (meth)acrylate.

4. The one-component adhesive composition of claim 3, wherein the free radically polymerizable component further comprises a multifunctional acrylate.

5. The one-component adhesive composition of claim 1, wherein the impact modifier comprises a core-shell impact modifier.

6. The one-component adhesive composition of claim 1, wherein the toughener comprises an epoxy/carboxyl-terminated butadiene acrylonitrile adduct.

7. The one-component adhesive composition of claim 1, wherein the free radical forming compound comprises a peroxide.

8. The one-component adhesive composition of claim 1, wherein the cure accelerant comprises a metallocene.

9. The one-component adhesive composition of claim 1, wherein the thixotropic modifier is present in an amount of from about 0.01 wt.% to about 5 wt.%, based on the total weight of the one-component adhesive composition.

10. The one-component adhesive composition of claim 1, further comprising one or more additives.

11. A packaged product comprising a) a container having at least an outlet; and b) the one-component adhesive composition of claim 1.

12. The packaged product of claim 11, wherein the one-component adhesive composition of claim 1 has a storage stability of at least 6 months.

13. A method of forming a structure of an article of manufacture comprising locating the one-component adhesive composition of claim 1 between a first substrate and a second substrate and activating the one-component adhesive composition to cure between the first substrate and the second substrate by exposing the one-component adhesive composition to an external stimulus that causes the encapsulation of the free radical forming compound to fail.

14. The method of claim 13, wherein the external stimulus is pressure.

15. The method of claim 14, wherein the pressure ranges from about 40 psi to about 80 psi.

16. A structure of an article of manufacture produced according to the method of claim 13.

17. The structure of claim 16, wherein the structure comprises a mechanical fastener and the article of manufacture is an automobile or an airplane.