We Claim:

1. A composition comprising:

a blended product of:

a matrix polymer; and

from 0.05 to 2.5 wt% diffuser polymer particles,

wherein the diffuser polymer particles are characterized by an average diameter from 2 to 20 micrometers, a particle size distribution such that at least 90 wt % of the polymer particles fall within ±30% of the volume average particle size, a crosslinking level greater than 4%; and

wherein the diffuser polymer particles comprise units derived from at least one alkyl (meth)acrylate monomer, from 5 wt % to 25 wt % units derived from a crosslinking monomer selected from the group consisting of aliphatic crosslinking monomers, aromatic crosslinking monomers and combinations thereof, optionally, units derived from one or more comonomers selected from the group consisting of aryl (meth)acrylate monomers and monovinyl arenes; and

wherein from 0.1 to 20 wt% one or more performance additives are dispersed within the diffuser polymer particles based on the total weight of the diffuser particle, including the performance additive.

2. The composition according to claim 1, wherein the matrix polymer is selected from the group consisting of polycarbonates, polymethylmethacrylate, polystyrene, styrene-acrylonitrile copolymers, polystyrene methacrylate copolymers, styrene-methyl methacrylate copolymers, olefin-vinyl acetate copolymers, polymethylpentene, polyethylene, polypropylene, copolymers of polyethylene and polypropylene, polyglutarimide, styrene-maleic anhydride, copolymers, cyclic olefin copolymers, polyesters, polyethylene terephthalate and combinations thereof.

~~3. The composition according to any one of the preceding claims, wherein the one or more performance additives is selected from the group consisting of dyes, pigments, TiO_2, flame retardants and fillers.~~

43. The composition according to any one of the preceding claims, wherein the performance additive is a refractive index changing agent that changes the refractive index by greater than 0.01 units.

~~5. The composition according to any one of the preceding claims, wherein the performance additive is a refractive index changing agent that changes the refractive index by greater than 0.01 units.~~

~~6. The composition according to any one of the preceding claims, wherein the performance additive is a pigment.~~

~~7~~4. The composition according to any one of the preceding claims, wherein the performance additive is one or more flame retardants.

~~8~~5. The composition according to claim ~~7~~4, wherein the one or more flame retardants are non-halogenated.

~~9~~6. The composition according to claim ~~7~~4, wherein the one or more flame retardants are selected from the group consisting of bromine-containing acrylic resins (such as, brominated polybenzyl(meth)acrylate resin), bromine-containing styrene resins (such as, bromination product of a styrene resin, brominated styrene resin such as a homo- or co-polymer of brominated styrene monomers), bromine-containing polycarbonate resins (such as, brominated bisphenol-type polycarbonate resin), bromine-containing epoxy compound (such as, brominated bisphenol-type epoxy resin, brominated bisphenol-type phenoxy resin), brominated polyaryl ether compounds, brominated aromatic imide compounds (such as, alkylene-bis-brominated phthalimide), brominated bisaryl compounds, brominated tri(aryloxy)triazine compounds, and combinations thereof.

~~10~~7. The composition according to claim ~~9~~6, wherein the matrix polymer comprises polycarbonate and wherein a plaque tested according to ASTM D2863-12 exhibits an LOI of at least 24%.

~~11~~8. The composition according to any one of the preceding claims, wherein the diffuser polymer particles comprise from 50 to 90 wt% units derived from at least one alkyl (meth)acrylate monomer, from 5 to 25 wt% units derived from one or more aryl (meth)acrylate comonomers, and from 5 to 25 wt% units derived from crosslinking monomer selected from the group consisting of aliphatic crosslinking monomers, aromatic crosslinking monomers and combinations thereof.

~~12. The composition according to any one of the preceding claims, wherein the crosslinking monomer is divinylbenzene.~~

~~13. The composition according to any one of the preceding claims, wherein the at least one alkyl (meth)acrylate monomer is methyl methacrylate.~~

~~14~~9. The composition according to any one of the preceding claims, wherein the composition comprises an amount of pigment dispersed in the diffuser particles and exhibits a ΔE of at least 0.5 when compared with a comparative composition having identical components as the composition except that the same amount of the pigment is dispersed in the matrix polymer and not in the diffuser particles.

~~15~~10. The composition according to any one of the preceding claims, wherein the composition comprises an amount of TiO_2 in the diffuser particles exhibits an increase of at least 50% in D50

angle in comparison to a comparative composition having an identical components as the composition except that the same amount of the TiO_2 is dispersed in the matrix polymer and not in the diffuser particles.

16. A lighting diffuser comprising the composition according to any one of the preceding claims.

17. The composition according to any one of the preceding claims, wherein the blended product is prepared by dry blending to produce a dry blended product.

18. The composition according to claim 17, wherein the dry blended product is further melt compounded.

19. A method of producing the light diffusing composition comprising:

copolymerizing at least one alkyl (meth)acrylate monomer copolymerized with from 5 wt % to 25 wt % crosslinking monomer selected from the group consisting of aliphatic crosslinking monomer, aromatic crosslinking monomer and combinations thereof in the presence of one or more performance additives to form diffuser polymer particles; and

blending the diffuser polymer particles into a matrix polymer wherein the diffuser polymer particles are present in the composition at a level from 0.05 to 2.5 wt% based on the weight of the matrix polymer plus the weight of the diffuser polymer particle;

wherein the copolymerization process to produce the light diffusing particle is selected from the group consisting of suspension polymerization, emulsion polymerization, or a combination thereof; and

wherein the performance additives are non-polymerizable in the copolymerization process such that the performance additives are dispersed in the diffuser polymer particles.

20. An article comprising the light diffusing composition according to any one of the preceding claims.

21. A method for making articles comprising forming the article form the light diffusing composition according to any one of the preceding claims wherein the forming the article comprises one or more processes selected from the group consisting of ,thermoforming, extruding, calendaring, injection molding, and combinations thereof.

22. The composition according to any one of claims 1-18, wherein the diffuser polymer particles exhibit a multimodal particle size distribution.

23. The composition according to claim 22, wherein the multimodal particle size distribution is bimodal.

~~24. The composition according to claim 23, wherein bimodal particle size distribution includes a smaller particle size peak centered between 2.25 and 2.75 μ and a larger particle size peak centered between 5 and 6 μ.~~

~~25. The method according to claim 19, wherein the diffuser polymer particles exhibit a multimodal particle size distribution.~~

~~26. The method according to claim 25, wherein the multimodal particle size distribution is bimodal.~~

~~27. The method according to claim 26, wherein bimodal particle size distribution includes a smaller particle size peak centered between 2.25 and 2.75 μ and a larger particle size peak centered between 5 and 6 μ.~~