CLAIMS

1. A process for the suspension polymerization of styrene monomer to produce polystyrene comprising the steps of:

a) heating a polymerization suspension comprising the styrene monomer to a temperature of at least 60°C,

b) dosing an initiator to said heated polymerization suspension during the polymerization reaction over a period of ~~more than 90 minutes to less than 5 hours~~ 2-4 hours, in a continuous manner or intermittently in at least 2 portions, said period starting at a monomer conversion of 65% of less and said initiator having a half-life at the temperature at which it is dosed of not more than 60 minutes,

wherein a brominated flame retardant is present in the polymerization suspension during the polymerization reaction.

~~2. The process according to claim 1 wherein the initiator is dosed to the heated polymerization suspension over a period of 2-4 hours.~~

32. The process according to claim 1 ~~or 2~~ wherein the initiator is dosed to the heated polymerization suspension in a continuous manner.

43. The process according to claim 1 ~~or 2~~ wherein the initiator is dosed to the heated polymerization suspension intermittently in at least 20 portions.

54. The process according to any one of the preceding claims wherein said period starts at 0% monomer conversion.

65. The process according to any one of the preceding claims wherein the brominated flame retardant is selected from the group consisting of hexabromocyclododecane (HBCD), pentabromobenzylbromide, tetrabromobisphenyl A bis(allylether), tetrabromobisphenyl A bis(2,3-dibromopropyl ether), dibromohexahydrophthalimide, N-methyl-dibromohexahydro-

phthalimide, N,N 2,3-dibromopropyl-4,5-dibronnohexahydrophthalinnide, bis(2,3-dibromopropyl) tetrabronnophthalate, tris(2,3-dibromoisopropyl)isocyanurate, tribromophenyl allyl ether, and brominated styrene (co)polymers.

~~7~~6. The process according to any one of the preceding claims wherein the polymerization suspension comprises particulate carbon.

~~8~~7. The process according to any one of the preceding claims wherein a blowing agent is added to the polymerization suspension.

~~9~~8. The process according to any one of the preceding claims wherein the initiator is selected from the group consisting of peroxydicarbonates, peroxycarbonates, peroxyesters, peroxyketals, diacyl peroxides, dialkyl peroxides, ketone peroxides, and azo-initiators.

~~10~~9. The process according to claim ~~9~~ 8 wherein the initiator is selected from the group consisting of dibenzoyl peroxide, dicetylperoxydicarbonate, ter-butyl-peroxy-2-ethylhexanoate, 2,2'-azobis(isobutyronitrile), and mixtures thereof.

~~11~~10. The process according to any one of the preceding claims wherein the polymerization reaction is performed at a temperature in the range 60-160°C.

~~12~~11. The process according to any one of the preceding claims wherein the initiator is dosed in the form of an aqueous dispersion.