Claims

What is claimed is:

1. A solution comprising N-methylmorpholine-N-oxide (NMMO), water, and poly(α(1→3) glucan) wherein the concentration of poly(α(1→3) glucan) is in the range of 5 – 20 % by weight with respect to the total weight of the solution, wherein the poly(alpha(1→3) glucan) is characterized by a number average molecular weight (M_n) of at least 10,000 Da; and, wherein the weight ratio of NMMO to water is in the range of 12 to 1.6.

2. The solution of Claim 1 in the form of an isotropic solution.

3. The solution of Claim 1 wherein, in the poly(α(1→3) glucan), at least 90 mol-% of the repeat units in the polymer are glucose repeat units and at least 50% of the linkages between glucose repeat units are α(1→3) glycoside linkages.

4. The solution of Claim 3 wherein, in the poly(α(1→3) glucan) 100 mol-% of the repeat units in the polymer are glucose repeat units and ~~at least~~ 100 % of the linkages between glucose repeat units are α(1→3) glycoside linkages.

5. The solution of Claim 1 wherein the concentration of poly(α(1→3) glucan) is in the range of 10 to 15 % by weight.

6. The solution of Claim 1 wherein the number average molecular weight of the poly(alpha(1→3) glucan) is in the range of 50,000 to 70,000 Daltons.

7. A process for preparing a poly(alpha(1→3) glucan) fiber, comprising the steps of: dissolving in a mixture of N-methylmorpholine-N-oxide (NMMO) and water, 5 to 20 % by weight of the total weight of the resulting solution of poly(alpha(1→3) glucan) wherein the poly(alpha(1→3) glucan) is characterized by a number average molecular weight (M_n) of at least 10,000 Da, to form a solution, wherein the weight ratio of NMMO to water in said solution is in the range of 12 to 1.6; causing said solution to flow through a spinneret, forming a fiber thereby, using a liquid coagulant to extract the NMMO from the thus formed fiber.

8. The process of Claim 7 wherein the solution is in the form of an isotropic solution.

9. The process of Claim 7 wherein at least 90 mol-% of the repeat units in the poly(alpha(1→3) glucan) are glucose repeat units, and at least 50% of the linkages between glucose repeat units are α(1→3) glycoside linkages.

10. The process of Claim 9 wherein 100 mol-% of the repeat units , in the poly(α(1→3) glucan) are glucose repeat units and ~~at least~~ 100 % of the linkages between glucose repeat units are α(1→3) glycoside linkages.

11. The process of Claim 7 wherein the concentration of poly(α(1→3) glucan) in the solution is in the range of 10 to 15 % by weight.

12. The process of Claim 7 wherein the number averager molecular weight of the poly(alpha(1→3) glucan) in the solution is in the range of 50,000 to 70,000 Daltons.

13. The process of Claim 7 wherein the liquid coagulant is glacial acetic acid.

14. The process of Claim 7 wherein the liquid coagulant is a mixture of N-methylmorpholine N oxide and water having a water concentration of at least 75 % by weight.