

CLAIMS

1. Aramid pulp comprising a plurality of fibrils, said fibrils having a coating of polyalkyleneimine disposed thereon.
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2. The coated aramid pulp according to claim 1, wherein the aramid pulp has a weight average molecular weight of 10,000 g/mol to 40,000 g/mol.
3. The coated aramid pulp according to claim 1, wherein the polyalkyleneimine has primary amines, secondary amines and tertiary amines in a weight ratio of 1: 0.9: 0.5 to 1 : 1.1: 0.7.
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4. The coated aramid pulp according to claim 1, wherein the polyalkyleneimine is polyethyleneimine.
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5. The coated aramid pulp according to claim 4, wherein the polyethyleneimine has a weight average molecular weight of 800 g/mole to 2,000,000 g/mole.
6. The coated aramid pulp according to claim 4 or 5, wherein the polyethyleneimine has a nitrogen to carbon ratio of 1:2.
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7. A method of coating aramid pulp comprising a plurality of fibrils, said method comprising the steps of
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 - (a) separating the plurality of fibrils to disentangle the fibrils;
 - (b) providing an aqueous solution of polyalkyleneimine;
 - (c) adding the aqueous solution of step (b) to the plurality of fibrils of step (a); and
 - (d) coating the plurality of fibrils with polyalkyleneimine to form coated aramid pulp.
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8. The method according to claim 7, further comprising a step (e) of drying the coated aramid pulp.

9. The method according to claim 7, wherein step (a) is carried out in a mixer.
10. The method according to claim 9, wherein the mixer is a plough shear mixer.
- 5 11. The method according to claim 7, wherein the aqueous solution comprises polyethyleneimine in the range of 1 % to 20 % by weight based on the total weight of the aqueous solution.
- 10 12. The method according to claim 8, wherein step (e) drying is carried out at a temperature of 50 °C to 150 °C.
13. A rubber composition, based on parts by weight per 100 parts by weight rubber (phr), comprising:
15 (a) 1 to 25 phr of coated aramid pulp according to one or more of claims 1 to 6;
and
(b) rubber
wherein said fibrils are dispersed in said rubber.
14. The rubber composition according to claim 13, wherein the rubber is selected from
20 natural rubber, synthetic rubber and blends thereof.
15. The rubber composition according to claim 13 or 14, wherein the amount of coated aramid pulp is in the range of 3 phr to 20 phr.
- 25 16. The rubber composition according to one or more of claims 13 to 15, wherein the amount of coated aramid pulp is in the range of 5 phr to 15 phr.
17. The rubber composition according to one or more of claims 13 to 16, further
30 comprising at least one additive.
18. The rubber composition according to claim 17, wherein the at least one additive is selected from curatives, accelerants, anti-oxidants, retarders, processing additives,

plasticizers, chain terminators, adhesion promoters, flame retardants, dyes, ultraviolet light stabilizers, fillers, acidifiers, and catalysts.

19. A method for preparing a rubber composition comprising the steps of:
- 5 (i) providing the coated aramid pulp according to one or more of claims 1 to 6;
- (ii) dispersing the coated fibrils of the aramid pulp of step (i) into rubber to form a rubber mixture;
- (iii) combining the rubber mixture of step (ii) with at least one curative agent; and
- 10 (iv) curing the rubber mixture.
20. The method according to claim 19, wherein the amount of coated aramid pulp is in the range of 5 phr to 15 phr.
21. The method according to claim 19, wherein the curative agent is selected from
- 15 sulfur, peroxide, metallic oxide, urethane crosslinkers, acetoxysilane, and mixtures thereof.
22. Use of the rubber composition according to one or more of claims 13 to 18 in technical applications.
- 20 23. Use of the rubber composition according to claim 13 to 18 in conveyor belts, power transmission belts, seals, gaskets, tires or stator pump components.
24. A conveyor belt, power transmission belt, seals, gaskets, tires or stator pump
- 25 components comprising the composition according to one or more of claims 13 to 18.