

CLAIMS

1. A method of manufacturing an information recording medium glass substrate

5 said information recording medium glass substrate (1G) is in the form of a disk having a rotation center (CP) and including a first main surface (14), a second main surface (15), and an outer peripheral end surface (12),

the method comprising the steps of:

10 forming a first surface strengthening layer (101A) of 10 μm to 200 μm on said first main surface (14) and a second surface strengthening layer (101B) of 10 μm to 200 μm on said second main surface (15) through a chemical strengthening process; and polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B), wherein

15 said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) polishes said first surface strengthening layer (101A) and said second surface strengthening layer (101B) so that both of a first polishing amount difference (P1) and a second polishing amount difference (P2) are not more than 0.10 μm ,

20 where said first polishing amount difference (P1) is a difference between a polishing amount of said first surface strengthening layer (101A) and a polishing amount of said second surface strengthening layer (101B) in a first circumferential region (C1) where a distance in a radial direction from said outer peripheral end surface (12) toward said rotation center (CP) is 2.5 mm, and

25 said second polishing amount difference (P2) is a difference between a polishing amount of said first surface strengthening layer (101A) and a polishing amount of said second surface strengthening layer (101B) in a second circumferential region (C2) where a distance in a radial direction from said outer peripheral end surface (12) toward said rotation center (CP) is 6.5 mm.

2. The method of manufacturing an information recording medium glass substrate according to claim 1, wherein said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) simultaneously polishes a plurality of said information recording medium glass substrates (1G) in which a thickness difference is not more than 0.5 μm .

3. The method of manufacturing an information recording medium glass substrate according to claim 1, wherein said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) simultaneously polishes a plurality of said information recording medium glass substrates (1G) in which an entire surface flatness of said first main surface (14) and said second main surface (15) is not more than 0.5 μm .

4. The method of manufacturing an information recording medium glass substrate according to any one of claims 1 to 3, wherein
said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) polishes said first surface strengthening layer (101A) and said second surface strengthening layer (101B) using a double-side polisher having a pair of polishing pads (203, 204) for holding said information recording medium glass substrate (1G) therebetween,

said double-side polisher holds a control parameter in advance such that polishing rates of said first surface strengthening layer (101A) and said second surface strengthening layer (101B) of said information recording medium glass substrate (1G) are approximately equal, and
the polishing amounts of said first surface strengthening layer (101A) and said second surface strengthening layer (101B) are adjusted based on said parameter so that both of said first polishing amount difference (P1) and said second polishing amount difference (P2) are not more than 0.10 μm .

5. The method of manufacturing an information recording medium glass substrate according to any one of claims 1 to 3, wherein

5 said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) has a first polishing step and a second polishing step, in which said first surface strengthening layer (101A) and said second surface strengthening layer (101B) are polished using a double-side polisher having a pair of polishing pads (203, 204) for holding said information recording medium glass substrate (1G) therebetween, and

10 said second polishing step is performed by reversing said first main surface (14) and said second main surface (15) of said information recording medium glass substrate (1G) after said first polishing step so that both of said first polishing amount difference (P1) and said second polishing amount difference (P2) are not more than 0.10 μm .

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1. A method of manufacturing an information recording medium glass substrate,

5 said information recording medium glass substrate (1G) is in the form of a disk having a rotation center (CP) and including a first main surface (14), a second main surface (15), and an outer peripheral end surface (12),

the method comprising the steps of:

10 forming a first surface strengthening layer (101A) of 10 μm to 200 μm on said first main surface (14) and a second surface strengthening layer (101B) of 10 μm to 200 μm on said second main surface (15) through a chemical strengthening process; and

polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B), wherein

15 said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) polishes said first surface strengthening layer (101A) and said second surface strengthening layer (101B) so that both of a first polishing amount difference (P1) and a second polishing amount difference (P2) are not more than 0.10 μm ,

20 where said first polishing amount difference (P1) is a difference between a polishing amount of said first surface strengthening layer (101A) and a polishing amount of said second surface strengthening layer (101B) in a first circumferential region (C1) where a distance in a radial direction from said outer peripheral end surface (12) toward said rotation center (CP) is 2.5 mm, and

25 said second polishing amount difference (P2) is a difference between a polishing amount of said first surface strengthening layer (101A) and a polishing amount of said second surface strengthening layer (101B) in a second circumferential region (C2) where a distance in a radial direction from said outer peripheral end surface (12) toward said rotation center (CP) is 6.5 mm, and wherein

said information recording medium glass substrate (1G) is used for a magnetic recording medium for heat-assisted recording with the floating height of 5 nm or less of the magnetic head.

5 2. The method of manufacturing an information recording medium glass substrate according to claim 1, wherein said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) simultaneously polishes a plurality of said information recording medium glass substrates (1G) in which a thickness difference is not more than 0.5 μm .

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 3. The method of manufacturing an information recording medium glass substrate according to claim 1, wherein said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) simultaneously polishes a plurality of said information recording medium glass
15 substrates (1G) in which an entire surface flatness of said first main surface (14) and said second main surface (15) is not more than 0.5 μm .

 4. The method of manufacturing an information recording medium glass substrate according to any one of claims 1 to 3, wherein

20 said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) polishes said first surface strengthening layer (101A) and said second surface strengthening layer (101B) using a double-side polisher having a pair of polishing pads (203, 204) for holding said information recording medium glass substrate (1G) therebetween,

25 said double-side polisher holds a control parameter in advance such that polishing rates of said first surface strengthening layer (101A) and said second surface strengthening layer (101B) of said information recording medium glass substrate (1G) are approximately equal, and

 the polishing amounts of said first surface strengthening layer (101A) and said

second surface strengthening layer (101B) are adjusted based on said parameter so that both of said first polishing amount difference (P1) and said second polishing amount difference (P2) are not more than 0.10 μm .

5 5. The method of manufacturing an information recording medium glass substrate according to any one of claims 1 to 3, wherein

10 said step of polishing said first surface strengthening layer (101A) and said second surface strengthening layer (101B) has a first polishing step and a second polishing step, in which said first surface strengthening layer (101A) and said second surface strengthening layer (101B) are polished using a double-side polisher having a pair of polishing pads (203, 204) for holding said information recording medium glass substrate (1G) therebetween, and

15 said second polishing step is performed by reversing said first main surface (14) and said second main surface (15) of said information recording medium glass substrate (1G) after said first polishing step so that both of said first polishing amount difference (P1) and said second polishing amount difference (P2) are not more than 0.10 μm .