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SHEET GLASS FLATTENING METHOD, METHOD OF
MANUFACTURING GLASS SUBSTRATE FOR AN INFORMATION
RECORDING DISK USING FLATTENED GLASS, METHOD OF
MANUFACTURING A MAGNETIC RECORDING DISK USING GLASS
SUBSTRATE, AND MAGNETIC RECORDING MEDIUM

ABSTRACT OF THE DISCLOSURE

A glass substrate manufacturing method advantageously
5 applicable to magnetic recording disk glass substrates, LCD
glass substrates, photomask glass substrates, or optical
memory glass substrates. This method includes the steps of
forming a film of a solution on at least a principal surface
of a sheet glass formed using a down-drawing method, the
10 solution containing a water soluble inorganic material and a
surface-active agent; sandwiching both sides of a single
sheet glass on which the film is formed or of a laminated
structure of plural sheet glasses with a densified sheet
with a high flatness to pressure the single glass or
15 laminated structure; and heating and annealing the single
sheet glass or laminated structure to flatten the same. The
end side of the flatten glass substrate is treated with a
treating solution containing a hydrofluosilicic acid. The
glass substrate is formed by chemically strengthen a glass
20 substrate by immersing the glass substrate in a chemical
reinforcement solution heated and then ion exchanging ions
on the surface layer of the glass substrate with ions in the
chemical reinforcement solution; pulling up the substrate
from the chemical reinforcement solution and then annealing
25 it to a temperature higher than the crystallization
temperature of a molten salt; annealing the glass substrate
at a rate at which the crystallization of the molten salt is

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deposited on the surface of the glass substrate; and then
cleaning the surface of the glass substrate. Moreover, the
glass substrate is formed by chemically strengthen a glass
substrate by immersing the glass substrate in a chemical
5 reinforcement solution heated and then ion exchanging ions
on the surface layer of the glass substrate with ions in the
chemical reinforcement solution; and pulling up the
substrate from the chemical reinforcement solution and then
cleaning the surface of the glass substrate with a cleaning
10 agent containing acid.

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