WHAT IS CLAIMED IS:

1. A substrate processing apparatus comprising:

a substrate holder configured to hold a plurality of substrates including product substrates and dummy substrates;

a transfer mechanism configured to load the plurality of substrates to the substrate holder;

a main controller configured to determine substrate-mounting positions for the plurality of substrates according to setting items respectively corresponding to a number of the product substrates to be mounted on the substrate holder, a number of the dummy substrates to be loaded above and below the product substrates, and a number indicating a mounting position of a topmost of the dummy substrates to be loaded to the substrate holder;

a transfer controller configured to operate the transfer mechanism according to the determined substrate-mounting positions; and

a storage part configured to store a setting table including the setting items,

wherein, when receiving material information including at least the number of the product substrates and the substrate-mounting positions, the main controller is configured to acquire the setting table corresponding to the material information.

2. The substrate processing apparatus of Claim 1, wherein the main controller is configured to check the number of the product substrates, select the setting items defined in the setting table according to the number of the product substrates, and determine substrate-mounting positions for the substrates according to the setting items.

3. The substrate processing apparatus of Claim 1, wherein the setting items are configured such that the number of the dummy substrates loaded above and below the product substrates are changed according to the number of the product substrates.

4. The substrate processing apparatus of Claim 3, wherein the setting items are configured such that a number of the dummy substrates to be mounted on an upper side of the product substrates is larger than a number of the dummy substrates to be mounted on a lower side of the product substrates.

5. The substrate processing apparatus of Claim 1, wherein the setting items are configured to be registered in advance in the storage part.

6. The substrate processing apparatus of Claim 1, further comprising: a setting screen on which the setting items for loading the plurality of substrates to the substrate holder are set according to the number of the product substrates,

wherein the main controller is configured to enable the setting items to be set on the setting screen.

7. The substrate processing apparatus of Claim 1, wherein the main controller is further configured to determine the substrate-mounting positions for the plurality of substrates according to setting items respectively corresponding to a number indicating a substrate-mounting position of an upper end of the plurality of substrates to be mounted on the substrate holder, a number of side dummy substrates mounted from the substrate-mounting position of the upper end, the number of side dummy substrates mounted from a substrate-mounting position of a lower end of the plurality of substrates to be mounted on the substrate holder, and a presence or absence of a supplementary dummy substrate.

8. The substrate processing apparatus of Claim 7, wherein the number of the side dummy substrates is fixed.

9. The substrate processing apparatus of Claim 1, wherein the dummy substrates are pattern dummy substrates.

10. A method of manufacturing a semiconductor device, comprising:

storing, in a storage part, a setting table including setting items respectively corresponding to a number of product substrates to be mounted on a substrate holder that holds a plurality of substrates including the product substrates and dummy substrates, a number of the dummy substrates to be loaded above and below the product substrates, and a number indicating a mounting position of a topmost of the dummy substrates to be loaded to the substrate holder;

acquiring the setting table corresponding to material information including at least the number of the product substrates and substrate-mounting positions;

determining the substrate-mounting positions for the plurality of substrates according to the setting items;

transferring the plurality of substrates to the substrate holder according to the determined substrate-mounting positions; and

loading the substrate holder to a process furnace and processing the substrates held by the substrate holder.

11. A program for controlling a substrate processing apparatus by causing a computer to execute a process comprising:

storing, in a storage part, a setting table including setting items respectively corresponding to a number of product substrates to be mounted on a substrate holder that holds a plurality of substrates including the product substrates and dummy substrates, a number of the dummy substrates to be loaded above and below the product substrates, and a number indicating a mounting position of a topmost of the dummy substrates to be loaded to the substrate holder;

acquiring the setting table corresponding to material information including at least the number of the product substrates and substrate-mounting positions;

determining the substrate-mounting positions for the plurality of substrates according to the setting items;

transferring the plurality of substrates to the substrate holder according to the determined substrate-mounting positions; and

processing the substrates held by the substrate holder in a state where the substrate holder is loaded to a process furnace.