

What is claimed is:

1. A storage facility comprising:

a plurality of storage sections for storing containers;

inactive gas supply passages for supplying inactive gas to respective ones of the plurality of storage sections;

an inject portion provided to each of the plurality of storage sections for injecting inactive gas supplied from the corresponding inactive gas supply passage to an interior of the container stored in the corresponding storage section;

a discharge portion provided to each of the plurality of storage sections for discharging gas within the corresponding container to outside the corresponding container when the inactive gas is injected from the inject portion to the interior of the container stored in the corresponding storage section;

a plurality of supply amount adjusting devices, each of which is provided on an upstream side, in the corresponding inactive gas supply passage, of the corresponding inject portion of a corresponding one of the plurality of storage sections, for adjusting a supply amount of the inactive gas to the corresponding inject portion;

a controller for monitoring a supply state of the inactive gas for the plurality of storage sections and for controlling the plurality of supply amount adjusting devices;

wherein the controller is configured to monitor the supply state of the inactive gas for the plurality of storage sections by dividing the plurality of storage sections into a plurality of monitoring areas defined for each of groups of storage sections each of which consists of two or more storage sections with one located next to another, and to control the plurality of supply amount adjusting devices such that the supply state of the inactive gas supplied to the storage sections belonging to each of the plurality of monitoring areas satisfies a set restricting condition defined in advance;

wherein the controller is configured:

to perform a supply process in which the corresponding supply amount adjusting device is controlled to supply inactive gas to the corresponding storage section provided that the container is stored in the corresponding storage section;

to perform a supply stop process in which the supply amount adjusting devices are controlled to stop supplying of the inactive gas to a part of or all of the plurality of storage sections; and

to perform, after performing the supply stop process, a supply resume process in which the supply amount adjusting devices are controlled to supply the inactive gas to the corresponding storage sections to which the supplying of the inactive gas is to be resumed among the storage sections to which the supplying of inactive gas has been stopped in the supply stop process;

wherein, in the supply resume process, a part of or all of the storage sections are selected, as storage sections to which the supplying is to be resumed, from all the storage sections which can be the storage sections to which the supplying is to be resumed, such that the set restricting condition is satisfied in the monitoring area that the storage sections to which the supplying is to be resumed belong to if the supplying of the inactive gas is resumed to the storage sections to which the supplying is to be resumed; and

wherein the controller is configured to manage elapsed time since storing of the corresponding container, for each of the plurality of storage sections, and to select, in the supply resume process, the storage sections to which the supplying is to be resumed from all the storage sections which can be the storage sections to which the supplying is to be resumed by giving priority to the storage sections for which the elapsed time is shorter.

2. The storage facility as defined in claim 1, wherein the set restricting condition is a condition defined to restrict a supply amount of the inactive gas per unit time in each of the monitoring areas to less than or equal to a limit value defined in advance.

3. The storage facility as defined in claim 1,
wherein a passage for a worker is provided adjacent to the plurality of storage sections,
and

wherein the plurality of the monitoring areas are defined such that more than one of the monitoring areas are arranged in the direction along which the passage for the worker extends.

4. The storage facility as defined in claim 1,
wherein the plurality of storage sections are provided such that more than one storage sections are arranged in each of a vertical direction and a lateral direction, and

wherein each of the monitoring areas is defined for the group of storage sections which consists of two or more storage sections with one located next to another in at least one of the vertical direction and the lateral direction.
5. The storage facility as defined in claim 4, wherein each of the monitoring areas is defined for the group of storage sections which consists of two or more storage sections with one located next to another in a line in the vertical direction.
6. The storage facility as defined in claim 4, wherein the set restricting condition is that a total number of the storage sections to which inactive gas is supplied in each of the monitoring areas is less than or equal to a set total number defined in advance.
7. The storage facility as defined in claim 4, wherein the set restricting condition is that a number of consecutive storage sections to which the inactive gas is supplied in at least one of the vertical direction and the lateral direction is less than or equal to a set consecutive number defined in advance.
8. The storage facility as defined in claim 1, wherein walls are provided to enclose installation space in which the plurality of storage sections are installed.
9. A storage method utilizing a storage facility including,
a plurality of storage sections for storing containers;

inactive gas supply passages for supplying inactive gas to respective ones of the plurality of storage sections;

an inject portion provided to each of the plurality of storage sections for injecting inactive gas supplied from the corresponding inactive gas supply passage to an interior of the container stored in the corresponding storage section;

a discharge portion provided to each of the plurality of storage sections for discharging gas within the corresponding container to outside the corresponding container when the inactive gas is injected from the inject portion to the interior of the container stored in the corresponding storage section;

a plurality of supply amount adjusting devices, each of which is provided on an upstream side, in the corresponding inactive gas supply passage, of the corresponding inject portion of a corresponding one of the plurality of storage sections, for adjusting a supply amount of the inactive gas to the corresponding inject portion; and

a controller;

the storage method comprising the following steps that are performed by the controller;

a supply state monitoring step in which a supply state of the inactive gas is monitored, for the plurality of storage units;

an adjusting device controlling step in which the plurality of supply amount adjusting devices are controlled;

wherein, in the supply state monitoring step, the supply state of the inactive gas for the plurality of storage sections is monitored by dividing the plurality of storage sections into a plurality of monitoring areas defined for each of groups of storage sections each of which consists of two or more storage sections with one located next to another,

wherein, in the adjusting device controlling step, the plurality of supply amount adjusting devices are controlled such that the supply state of the inactive gas supplied to the storage sections belonging to each of the plurality of monitoring areas satisfies a set restricting condition defined in advance,

wherein in the adjusting device controlling step, the following processes are performed:
a supply process in which the corresponding supply amount adjusting device is controlled to supply inactive gas to the corresponding storage section provided that the container is stored in the corresponding storage section;

a supply stop process in which the supply amount adjusting devices are controlled to stop supplying of the inactive gas to a part of or all of the plurality of storage sections; and

after performing the supply stop process, a supply resume process in which the supply amount adjusting devices are controlled to supply the inactive gas to the corresponding storage sections to which the supplying of the inactive gas is to be resumed among the storage sections to which the supplying of inactive gas has been stopped in the supply stop process,

wherein, in the supply resume process, a part of or all of the storage sections are selected, as storage sections to which the supplying is to be resumed, from all the storage sections which can be the storage sections to which the supplying is to be resumed, such that the set restricting condition is satisfied in the monitoring area that the storage sections to which the supplying is to be resumed belong to if the supplying of the inactive gas is resumed to the storage sections to which the supplying is to be resumed,

wherein the steps that are performed by the controller further includes an elapsed time managing step in which elapsed time since storing of the corresponding container is managed, for each of the plurality of storage sections, and

wherein, in the supply resume process, the storage sections to which the supplying is to be resumed are selected from all the storage sections which can be the storage sections to which the supplying is to be resumed, by giving priority to the storage sections for which the elapsed time is shorter.

10. The storage method as defined in claim 9, wherein the set restricting condition is a condition defined to restrict a supply amount of the inactive gas per unit time in each of the monitoring areas to less than or equal to a limit value defined in advance.

11. The storage method as defined in claim 9,

wherein the storage facility has a passage for a worker, the passage being provided adjacent to the plurality of storage sections, and

wherein, in the supply state monitoring step, the plurality of the monitoring areas are defined such that more than one of the monitoring areas are arranged in the direction along which the passage for the worker extends.

12. The storage method as defined in claim 9,
wherein the plurality of storage sections are provided such that more than one storage sections are arranged in each of a vertical direction and a lateral direction, and

wherein, in the supply state monitoring step, each of the monitoring areas is defined for the group of storage sections which consists of two or more storage sections with one located next to another in at least one of the vertical direction and the lateral direction.

13. The storage method as defined in claim 12, wherein in the supply state monitoring step, each of the monitoring areas is defined for the group of storage sections which consists of two or more storage sections with one located next to another in a line in the vertical direction.

14. The storage method as defined in claim 12, wherein the set restricting condition is that a total number of the storage sections to which inactive gas is supplied in each of the monitoring areas is less than or equal to a set total number defined in advance.

15. The storage method as defined in claim 12, wherein the set restricting condition is that a number of consecutive storage sections to which the inactive gas is supplied in at least one of the vertical direction and the lateral direction is less than or equal to a set consecutive number defined in advance.

16. The storage method as defined in claim 9, wherein the storage facility includes walls that are provided to enclose installation space in which the plurality of storage sections are installed.