CLAIMS

[Claim 1] An air control apparatus configured to adjust a composition of inside air of an internal space (5), the air control apparatus comprising:

a gas separation membrane (124) into which target air is supplied; and

a controller (191) configured to execute a first action of reducing deterioration in performance of the gas separation membrane (124) due to stop of the air control apparatus for a predetermined period, wherein

the first action includes a preliminary operation of supplying the target air to the gas separation membrane (124),

the air control apparatus includes a compression unit (110) configured to compress air to be supplied to the gas separation membrane (124) in the preliminary operation, and

the compression unit (110) is configured to compress the air to be supplied to the gas separation membrane (124) such that an internal pressure of the gas separation membrane (124) during the preliminary operation is higher than an internal pressure of the gas separation membrane (124) during a normal operation of the air control apparatus.

[Claim 2] The air control apparatus of claim 1, wherein

the controller (191) starts the preliminary operation when a predetermined time has elapsed since the stop of the air control apparatus.

[Claim 3] The air control apparatus of claim 1, wherein

the controller (191) starts the preliminary operation a predetermined time prior to start of a normal operation of the air control apparatus.

[Claim 4] The air control apparatus of claim 2 or 3 further comprising:

an exhaust flow path (103) through which first air and second air separated from each other by the gas separation membrane (124) are discharged to an external space (6) in the preliminary operation.

[Claim 5] The air control apparatus of any one of claims 2 to 4 further comprising:

a heating element (175) configured to heat air to be supplied to the gas separation membrane (124) in the preliminary operation.

[Claim 6] The air control apparatus of any one of claims 2 to 5 further comprising:

a dehumidifier (111, 113, 130) configured to reduce moisture in air to be supplied to the gas separation membrane (124) in the preliminary operation.

[Claim 7] The air control apparatus of any one of claims 1 to 6, wherein

the first action includes an action for urging a person to operate the air control apparatus.

[Claim 8] The air control apparatus of any one of claims 1 to 7, wherein

the controller (191) outputs information on the performance of the gas separation membrane (124).

[Claim 9] An air control apparatus configured to adjust a composition of inside air of an internal space (5), the air control apparatus comprising:

a gas separation membrane (124) into which target air is supplied; and

a controller (191) configured to execute a first action of reducing deterioration in performance of the gas separation membrane (124) due to stop of the air control apparatus for a predetermined period, wherein

the controller (191) outputs information on the performance of the gas separation membrane (124),

the first action includes a preliminary operation of supplying the target air to the gas separation membrane (124),

the air control apparatus includes a compression unit (110) configured to compress air to be supplied to the gas separation membrane (124) in the preliminary operation, and

in the preliminary operation, the controller (191) estimates a period of time required for the gas separation membrane (124) to recover the performance or time at which the performance of the gas separation membrane (124) recovers, based on a speed of decrease in an internal pressure of the gas separation membrane (124), and outputs the period of time estimated or the time estimated as the information on the performance of the gas separation membrane (124).

[Claim 10] A refrigeration apparatus comprising:

the air control apparatus (100) of any one of claims 1 to 9; and

a refrigerant circuit (30) configured to adjust a temperature inside the internal space (5).

[Claim 11] A transport container comprising:
the refrigeration apparatus (10) of claim 10; and
a container body (2) in which the refrigeration apparatus (10) is installed.