Claims:

1. A method of operating an atmosphere control system to control an atmosphere in a refrigerated container, the method comprising:

operating the atmosphere control system in a start up phase to control an oxygen level in the container;

the start up phase comprises adding nitrogen to the container;

ending the start up phase if:

(i) a carbon dioxide level in the container is not greater than an upper threshold, the oxygen level in the container is greater than or equal to an oxygen pulldown limit, and the carbon dioxide level in the container is greater than a carbon dioxide upper control limit; or

(ii) the carbon dioxide level in the container is greater than the upper threshold; or

(iii) the carbon dioxide level in the container is not greater than an upper threshold, and the oxygen level in the container is not greater than or equal to the oxygen pulldown limit;

the method further comprising: operating the atmosphere control system in a control phase to control the oxygen level and the carbon dioxide level in the container;

wherein the control phase comprises:

determining that the oxygen level in the container is less than an oxygen lower control limit;

adding outside air to the container until the oxygen level in the container equals an oxygen upper control limit;

determining that the carbon dioxide level in the container is greater than a carbon dioxide upper threshold and when the carbon dioxide level in the container is

greater than the carbon dioxide upper level in the container equals a carbon dioxide lower control limit;

determining that the oxygen level in the container is greater than an oxygen upper threshold;

adding nitrogen to the container until the oxygen level in the container equals the oxygen pulldown limit;

determining that the carbon dioxide level in the container is greater than a carbon dioxide upper control limit, and

when the carbon dioxide level in the container is greater than a carbon dioxide upper control limit, adding nitrogen to the container until the carbon dioxide level in the container equals a carbon dioxide lower control limit.

2. The method of claim 1 comprising:

after ending the start up phase, adding nitrogen to the container until the carbon dioxide level in the container equals a carbon dioxide lower control limit.

3. A method of operating an atmosphere control system to control an atmosphere in a refrigerated container, the method comprising:

operating the atmosphere control system in a start up phase including adding nitrogen to the container to control an oxygen level and a carbon dioxide level in the container;

ending the start up phase upon both

(i) the oxygen level being greater than an oxygen pulldown limit corresponding to reduced oxygen level achievable by adding nitrogen to the container and

(ii) the carbon dioxide level being greater than or equal to a carbon dioxide upper control limit; and

operating the atmosphere control system in a control phase to control the oxygen

level and the carbon dioxide level in the container;

wherein the control phase comprises determining that the carbon dioxide level in the container is greater than a carbon dioxide upper threshold;

wherein when the carbon dioxide level in the container is greater than the carbon dioxide upper threshold, adding outside air to the container until the carbon dioxide level in the container is equal to or less than a carbon dioxide lower control limit, wherein the outside air is sourced from ambient air.

4. The method of claim 3 wherein:

ending the start up phase comprises ending the start up phase upon the oxygen level in the container is equal to or less than the oxygen pulldown limit corresponding to reduced oxygen level achievable by adding nitrogen to the container.

5. The method of claim 4 wherein:

the control phase comprises adding nitrogen to the container until the carbon dioxide level in the container is equal to or less than the carbon dioxide lower control limit.

6. The method of claim 5 further comprising:

adding outside air to the container until the oxygen level in the container is equal to or greater than an oxygen upper control limit.

7. The method of claim 3 wherein:

ending the start up phase comprises ending the start up phase upon the oxygen level in the container is not greater than or equal to the oxygen pulldown limit corresponding to reduced oxygen level achievable by adding nitrogen to the container.

8. The method of claim 3 wherein:

the control phase comprises:

determining that the oxygen level in the container is greater than an oxygen upper threshold;

adding nitrogen to the container until the oxygen level in the container is equal to or less than the oxygen pulldown limit corresponding to the reduced oxygen level achievable by adding nitrogen to the container.

9. The method of claim 3 wherein:

the control phase comprises determining that the oxygen level in the container is less than an oxygen lower control limit;

adding outside air to the container until the oxygen level in the container is equal to or less than an oxygen upper control limit, wherein the outside air is sourced from ambient air.

10. The method of claim 3 wherein:

the control phase comprises determining that the carbon dioxide level in the container is greater than the carbon dioxide upper control limit;

when the carbon dioxide level in the container is greater than the carbon dioxide upper control limit, adding nitrogen to the container until the carbon dioxide level in the container is equal to or less than the carbon dioxide lower control limit.

11. The method of claim 10 further comprising:

adding outside air to the container until the oxygen level in the container is equal to or greater than an oxygen upper control limit.

12. The method of claim 3 wherein:

the control phase includes adding nitrogen to the container until the carbon dioxide level in the container is equal to or less than the carbon dioxide lower control limit.

13. A method of operating an atmosphere control system to control an

atmosphere in a refrigerated container, the method comprising:

operating the atmosphere control system in a start up phase including adding nitrogen to the container to control an oxygen level and a carbon dioxide level in the container;

ending the start up phase upon both

(i) the oxygen level being greater than an oxygen pulldown limit corresponding to reduced oxygen level achievable by adding nitrogen to the container and

(ii) the carbon dioxide level being greater than or equal to a carbon dioxide upper control limit; and

operating the atmosphere control system in a control phase to control the oxygen level and the carbon dioxide level in the container;

wherein the control phase comprises determining that the carbon dioxide level in the container is greater than a carbon dioxide upper threshold;

wherein when the carbon dioxide level in the container is greater than the carbon dioxide upper threshold, adding outside air to the container until the carbon dioxide level in the container is equal to or less than a carbon dioxide lower control limit, wherein the outside air is sourced from ambient air;

wherein the start up phase comprises adding nitrogen to the container until the oxygen level in the container is equal to or less than the oxygen pulldown limit corresponding to reduced oxygen level achievable by adding nitrogen to the container

wherein the control phase comprises determining that the oxygen level in the container is greater than an oxygen upper threshold and adding nitrogen to the container until the oxygen level in the container is equal to or less than the oxygen pulldown limit corresponding to reduced oxygen level achievable by adding nitrogen to the container;

wherein the control phase comprises determining that the carbon dioxide level in the container is greater than a carbon dioxide upper control limit and when the carbon

dioxide level in the container is greater than the carbon dioxide upper control limit, adding nitrogen to the container until the carbon dioxide level in the container is equal to or less than the carbon dioxide lower control limit;

wherein the control phase comprises adding outside air to the container until the oxygen level in the container is equal to or greater than an oxygen upper control limit.