or the possible alteration of the taste thereof. The coating may be a food grade epoxy lacquer having a thickness of between 4 and 10 microns.

It has been discovered that it requires a significant period of time to adsorb the desired amount of C02 onto the carbon particles. What is needed is an apparatus and method to obtain faster and more complete adsorption of the C02 onto the compacted carbon, within a shorter period of time.

SUMMARY OF THE INVENTION

A method comprising injecting carbon dioxide under pressure into a HEU including a bottom section containing compacted carbon particles and maintaining the pressure for a time sufficient to remove residual air trapped in the pores of the compacted carbon and replace it with carbon dioxide gas adsorbed onto the carbon particles.

A method for replacing air trapped in compacted carbon particles in a heat exchange unit (HEU) with carbon dioxide gas comprising: providing a fixture for receiving said HEU; placing said HEU within said fixture; injecting carbon dioxide gas under pressure into said HEU; ~~and~~ maintaining said carbon dioxide gas under pressure in said HEU for a time sufficient to purge said trapped air and replace it with said carbon dioxide gas adsorbed onto said carbon particles; and removing said carbon dioxide gas from said HEU and applying a cap to said HEU to retain said carbon dioxide gas within said HEU.

An apparatus including a fixture for receiving the completed heat exchange unit source of carbon dioxide gas under pressure, a valve to control application of the gas to the HEU, a timer for maintaining gas under pressure in the HEU for a time sufficient to replace residual air therein with carbon dioxide gas.

An apparatus for replacing air with carbon dioxide in a heat exchange unit containing compacted particles of activated charcoal as an adsorbent comprising: a fixture including a first block and a second block and means for sealingly securing said first and second blocks together. said fixture defining at least one cavity adapted to receive said heat exchange unit; a source of carbon dioxide gas under pressure coupled to said fixture and adapted to be in communication with said heat exchange unit when

said heat exchange unit is in said cavity; a valve for controlling application of said carbon dioxide gas from said source to said activated carbon particles; a timer; and means for detecting the application of the carbon dioxide gas under pressure to said carbon particles and activating said timer to maintain said pressure for a time sufficient to purge substantially all the air from said carbon particles and replace said air with carbon dioxide gas adsorbed on said carbon particles.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 through 5 illustrate prior art;

Figure 6 is a block diagram of an apparatus constructed in accordance with the principles of the present invention;

Figure 7 is a perspective view of an apparatus constructed in accordance with the principles of the present invention.

Figure 8 is a top plan view thereof;

Figure 9 is a front plan view thereof;

Figure 10 is a side plan view thereof;

Claims:

1. Apparatus for replacing air with carbon dioxide in a heat exchange unit containing compacted particles of activated charcoal as an adsorbent comprising:

A. a fixture defining at least one cavity adapted to receive said heat exchange unit;

B. a source of carbon dioxide gas under pressure coupled to said fixture and in communication with said heat exchange unit;

C. a valve for controlling application of said carbon dioxide gas from said source to said activated carbon particles;

D. a timer; and

E. means for detecting the application of the carbon dioxide gas under pressure to said carbon particles and activating said timer to maintain said pressure for a time sufficient to purge substantially all the air from said carbon particles and replace said air with carbon dioxide gas adsorbed on said carbon particles.

2. Apparatus as defined in Claim 1 wherein said fixture includes a first block and a second block and means for sealingly securing said first and second blocks together.

3. Apparatus as defined in Claim 2 wherein said fixture defines a plurality of cavities for receiving a plurality of HEU's simultaneously.

4. Apparatus as defined in Claim 2 wherein said means for sealing includes a plurality of latches.

5. Apparatus as defined in Claim 1 wherein said timer generates a signal at the end of said predetermined time to close said valve.

6. Apparatus as defined in Claim 5 which further includes a cap adapted to be applied to said HEU when the carbon dioxide gas under pressure is no longer applied thereto to retain adsorbed carbon dioxide gas on said carbon particles.

7. A method for replacing air trapped in compacted carbon particles in a heat exchange unit (HEU) with carbon dioxide gas comprising:

A. providing a fixture for receiving said HEU;

B. placing said HEU within said fixture;

C. injecting carbon dioxide gas under pressure into said HEU; and

D. maintaining said carbon dioxide gas under pressure in said HEU for a time sufficient to purge said trapped air and replace it with said carbon dioxide gas adsorbed onto said carbon particles.

8. The method of Claim 7 further including removing said carbon dioxide gas from said HEU and applying a cap to said HEU to retain said carbon dioxide gas within said HEU.

9. The method of Claim 7 wherein the pressure of said carbon dioxide gas is maintained between approximately 10 to 50 Bars.

Claims:

1. Apparatus for replacing air with carbon dioxide in a heat exchange unit (HEU) containing compacted particles of activated charcoal as an adsorbent comprising:

A. a fixture including a first block and a second block and means for sealingly securing said first and second blocks together, said fixture defining at least one cavity adapted to receive said heat exchange unit;

B. a source of carbon dioxide gas under pressure coupled to said fixture and adapted to be in communication with said heat exchange unit when said heat exchange unit is in said cavity;

C. a valve for controlling application of said carbon dioxide gas from said source to said activated carbon particles;

D. a timer; and

E. means for detecting the application of the carbon dioxide gas under pressure to said carbon particles and activating said timer to maintain said pressure for a time sufficient to purge substantially all the air from said carbon particles and replace said air with carbon dioxide gas adsorbed on said carbon particles.

2. Apparatus as defined in Claim 1 wherein said fixture defines a plurality of cavities for receiving a plurality of HEU's simultaneously.

3. Apparatus as defined in Claim 1 wherein said means for sealing includes a plurality of latches.

4. Apparatus as defined in Claim 1 which further includes a cap adapted to be applied to said HEU when the carbon dioxide gas under pressure is no longer applied thereto to retain adsorbed carbon dioxide gas on said carbon particles.

5. A method for replacing air trapped in compacted carbon particles in a heat exchange unit (HEU) with carbon dioxide gas comprising:

A. providing a fixture for receiving said HEU;

B. placing said HEU within said fixture;

C. injecting carbon dioxide gas under pressure into said HEU;

D. maintaining said carbon dioxide gas under pressure in said HEU for a time sufficient to purge said trapped air and replace it with said carbon dioxide gas adsorbed onto said carbon particles; and

E. removing said carbon dioxide gas from said HEU and applying a cap to said HEU to retain said carbon dioxide gas within said HEU.

6. The method of Claim 5 wherein the pressure of said carbon dioxide gas is maintained between approximately 10 to 50 Bars.