CLAIMS

What is claimed is:

1. A vapor plug system, comprising:

a vapor plug configured to fit onto a shipper and partially seal contents within a payload area of the shipper;

a sensor configured to measure or determine a condition or location of the shipper;

an electronic device coupled to the sensor and having a display configured to provide the condition or the location to a user; and

a vapor plug adapter coupled to the vapor plug and configured to cover the vapor plug, the vapor plug adapter including:

a recessed pocket configured to receive the electronic device, and

an opening within the recessed pocket that is configured to receive the sensor and allow the sensor to be inserted into the payload area of the shipper,

wherein the vapor plug adapter has a cover, and

wherein the cover is configured to fit within the recessed pocket and enclose the electronic device and the sensor within the vapor plug adapter, the vapor plug and the shipper.

2. The vapor plug system of claim 1, wherein the sensor is a thermocouple configured to measure an internal or an external temperature of the shipper, a global positioning system configured to determine the location of the shipper, a pressure sensor configured to measure an atmospheric pressure within the shipper, an inclinometer configured to measure tilt of the shipper or a piezoelectric configured to measure shock within or to the shipper.

3. The vapor plug system of claim 1, wherein the sensor is a thermocouple that has a wire, wherein the opening receives the wire that is inserted into the payload area of the shipper.

4. The vapor plug system of claim 1, wherein the vapor plug adapter has a lid that includes the recessed pocket and the opening.

5. The vapor plug system of claim 1, wherein the shipper is a dewar designed to withstand cryogenic temperatures.

6. The vapor plug system of claim 5, wherein the electronic device is a data logger and the vapor plug adapter is configured to integrate with various types of data loggers, sensors and dewars of different sizes and shapes.

7. A vapor plug adapter, comprising:

a vapor plug lid having a recessed pocket configured to receive an electronic device and having an opening, the opening being configured to receive a sensor and allow the sensor to be inserted into a payload area of a dewar; and

a cover configured to cover and enclose the electronic device within the recessed pocket,

wherein the recessed pocket has one or more notches configured to receive one or more protrusions of the cover, wherein the cover is configured to be locked or unlocked within a seat of the recessed pocket, wherein the recessed pocket has an opening that is configured to receive a wire of the sensor into the payload area of the dewar.

8. The vapor plug adapter of claim 7, wherein the vapor plug lid is configured to couple with a frame of a vapor plug of the dewar.

9. The vapor plug adapter of claim 7, wherein the recessed pocket is configured to receive different types of data loggers and monitoring devices and couple with different types of vapor plugs or lids of various dewars of different sizes and shapes.

10. A vapor plug adapter, comprising:

a vapor plug lid having a recessed pocket configured to receive an electronic device and having an opening, the opening being configured to receive a sensor and allow the sensor to be inserted into a payload area of a dewar; and

a cover configured to cover and enclose the electronic device within the recessed pocket,

wherein the electronic device is a data logger that has a display and the cover is transparent or semi-transparent allowing the display to be read without removal of the cover.

11. The vapor plug adapter of claim 7, wherein the cover has a first hole and a second hole, wherein the first hole and the second hole are configured to be gripped, held or twisted to twist the cover clockwise or counter-clockwise to a closed position or an open position when the cover is positioned to cover and enclose the electronic device within the recessed pocket.

12. The vapor plug adapter of claim 7, wherein when the cover is in the closed position the cover is prevented from being lifted out of the recessed pocket and when the cover is in the open position the cover is removable from the recessed pocket.

13. A vapor plug system, comprising:

a dewar;

a vapor plug configured to couple with the dewar;

a sensor configured to measure or determine a condition or location of the dewar;

a data logger coupled to the sensor and having a display configured to provide the condition or the location to a user; and

an adapter coupled to the vapor plug and configured to cover the vapor plug, the adapter including:

a lid having a pocket recessed that is configured to receive the datalogger, the pocket having an opening within and configured to receive the sensor and allow the sensor to be inserted into a payload area of the dewar,

wherein the sensor is a thermocouple configured to measure an internal or an external temperature of the dewar, a global positioning system configured to determine the location of the dewar, a pressure sensor configured to measure an atmospheric pressure within the dewar, an inclinometer configured to measure tilt of the dewar or a piezoelectric to measure shock within or to the dewar.

14. The vapor plug system of claim 13, wherein the adapter includes:

a cover configured to fit over the pocket and enclose the datalogger and the sensor within the adapter, the vapor plug and the dewar.

15. The vapor plug system of claim 14, wherein the adapter includes:

a frame coupled in between the lid and the vapor plug, wherein the sensor is configured to be inserted into the opening within the pocket and an opening within the frame and into the payload area of the dewar.

16. The vapor plug system of claim 13, wherein the lid is made from a polymer that is resistant to cryogenic temperatures.

17. A method of transporting a shipper, comprising:

providing a shipper to store or transport contents within a payload area of the shipper;

providing a vapor plug to partially seal the contents within the payload area of the shipper;

fitting a vapor plug adapter onto the vapor plug;

positioning an electronic device within the vapor plug adapter and a sensor within the payload area of the shipper; and

partially sealing the contents within the shipper using the vapor plug,

wherein positioning the electronic device within the vapor plug adapter includes positioning the electronic device within a recessed pocket of the vapor plug adapter; and

covering the electronic device with a transparent cover to enclose the electronic device within the vapor plug adapter, wherein the recessed pocket is configured to hold various different electronic devices.

18. The method of claim 17, further comprising:

providing the sensor to monitor a condition or a location of the contents; and

providing the electronic device to display or provide the condition or the location of the contents to a user.

19. The method of claim 17, further comprising:

providing the condition or the location of the contents to the user on a web portal.