

We Claim:

1. A hazard suppression system, comprising:  
a vessel adapted to contain hazard suppression material under pressure, and a selectively  
openable outlet;  
5 apparatus operably coupled with said container outlet for delivery of said material to an  
area to be protected against hazard; and  
a gauge assembly operable to monitor the temperature and pressure of said hazard  
suppression material over time,  
said gauge assembly including structure operable to repeatedly sense the temperature and  
10 pressure of the material within said vessel, compare the sensed temperature and  
pressure values with previously determined temperature and pressure values for  
the material to determine if the sensed temperature and pressure values are  
consistent with the previously determined values, and provide an output in  
conformity with the comparison.  
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2. The system of claim 1, said vessel adapted to hold material selected from  
the group consisting of HFC-125, HFC-227ea, FK-5-1-12, HFO-1233zd (E), IG-55, IG-541, IG-  
100, and IG-01, and mixtures thereof.
- 20 3. The system of claim 1, said gauge assembly comprising a strain gauge  
pressure-sensing component.
4. The system of claim 1, said gauge assembly having memory which stores  
said temperature, pressure and time values for said material, said gauge assembly structure  
25 operable to compare said stored memory values with the sensed values.
5. The system of claim 4, said memory resident on a circuit board including a  
digital processor.
- 30 6. The system of claim 4, said gauge assembly memory operable to store  
information about the true internal volume of said vessel.

7. The system of claim 1, said gauge assembly further including structure operable to generate said output as a wireless signal.

8. The system of claim 1, said gauge assembly including a visual screen  
5 operable to display said output.

9. The combination comprising:  
a vessel adapted to contain hazard suppression material under pressure, and a selectively  
openable outlet for delivery of said material from the vessel; and  
10 a gauge assembly operable to monitor the temperature and pressure of said hazard  
suppression material over time,  
said gauge assembly including structure operable to repeatedly sense the temperature and  
pressure of the material within said vessel, compare the sensed temperature and  
pressure values with previously determined temperature and pressure values for  
15 the material to determine if the sensed temperature and pressure values are  
consistent with the previously determined values, and provide an output in  
conformity with the comparison.

10. The combination of claim 9, said vessel adapted to hold material selected  
20 from the group consisting of HFC-125, HFC-227ea, FK-5-1-12, HFO-1233zd (E), IG-55, IG-  
541, IG-100, and IG-01, and mixtures thereof.

11. The combination of claim 9, said gauge assembly comprising a strain  
gauge pressure-sensing component.  
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12. The combination of claim 9, said gauge assembly having memory which  
stores said temperature, pressure, and time values for said material, said gauge assembly  
structure operable to compare said stored memory values with the sensed values.

13. The combination of claim 12, said memory resident on a circuit board  
30 including a digital processor.

14. The combination of claim 12, said gauge assembly memory operable to store information about the true internal volume of said vessel.

5 15. The combination of claim 9, said gauge assembly further including structure operable to generate said output as a wireless signal.

16. The combination of claim 9, said gauge assembly including a visual screen operable to display said output.

10 17. A gauge assembly adapted for coupling with a vessel designed to contain hazard suppression material under pressure, said gauge assembly including structure operable to repeatedly sense the temperature and pressure of the material within said vessel, compare the sensed temperature and pressure values with previously determined temperature and pressure values for the material to determine if the sensed temperature and pressure values are consistent  
15 with the previously determined values, and provide an output in conformity with the comparison.

18. The assembly of claim 17, said vessel adapted to hold material selected from the group consisting of HFC-125, HFC-227ea, FK-5-1-12, HFO-1233zd (E), IG-55, IG-541, IG-100, and IG-01, and mixtures thereof.

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19. The assembly of claim 17, said gauge assembly comprising a strain gauge pressure-sensing component.

20. The assembly of claim 17, said gauge assembly having memory which  
25 stores said temperature and pressure values for said material and a time at which the temperature and pressure values were taken, said gauge assembly structure operable to compare said stored memory values with the sensed values.

21. The assembly of claim 20, said memory resident on a circuit board  
30 including a digital processor.

22. The assembly of claim 20, said gauge assembly memory operable to store information about the true internal volume of said vessel.

23. The assembly of claim 17, said gauge assembly further including structure operable to generate said output as a wireless signal.

24. The assembly of claim 17, said gauge assembly including a visual screen operable to display said output.

25. A method of monitoring a vessel containing hazard suppression material under pressure, said method comprising the steps of:

repeatedly sensing the temperature and pressure of the material within said vessel;  
comparing the sensed temperature and pressure values of the material with previously determined expected temperature and pressure values for said material, and  
determining if said sensed temperature and pressure values are consistent with said expected values; and  
providing an output in conformity with said comparison.

26. The method of claim 25, including the step of measuring the pressure of said material within said vessel using a strain gauge pressure-sensing component.

27. The method of claim 25, including the steps of storing said expected temperature and pressure values for said material in memory, storing said sensed temperature and pressure values in memory along with a time at which said sensed temperature and pressure values were taken, and comparing said stored memory values with said sensed values.

28. The method of claim 27, including the step of storing information about the true internal volume of said vessel in said memory.

29. The method of claim 25, including the step of generating a wireless signal of said output.

30. The method of claim 25, including the step of generating a visual display of said output.