1. A method for detecting whether a different refrigerant has been charged into a refrigeration apparatus including a refrigerant circuit (20) through which a refrigerant circulates and which thus performs a refrigeration cycle, the method comprising:

a charging step of charging a refrigerant into the refrigerant circuit (20);

a characteristics determination step of determining whether saturation temperature characteristics of the refrigerant charged in the charging step are identical to saturation temperature characteristics of a previously determined normal refrigerant, the saturation temperature characteristics of the refrigerant being derived from a pressure and a temperature of the refrigerant; and

an alerting step of, when, in the characteristics determination step, a determination is made that the saturation temperature characteristics of the refrigerant charged in the charging step are different from the saturation temperature characteristics of the previously determined normal refrigerant, issuing an alarm indicating that the charged refrigerant is different from the normal refrigerant.

2. The method of claim 1 further comprising:

an inputting step of, when, in the characteristics determination step, a determination is made that the saturation temperature characteristics of the refrigerant charged in the charging step are identical to the saturation temperature characteristics of the previously determined normal refrigerant, manually inputting a type of the charged refrigerant to a data storage (103); and

a forcible prohibition step of, when the type input to the data storage (103) is identical to a type of a predetermined refrigerant different from the previously determined

normal refrigerant, forcibly prohibiting start of operation of the refrigeration apparatus.

3. The method of claim 2 further comprising:

an operation authorization step of, when the type input to the data storage is identical to a type of the previously determined normal refrigerant, recording a signal allowing start of operation of the refrigeration apparatus in the data storage (103).

4. The method of claim 1, wherein

when, in the characteristics determination step, a determination is made that the saturation temperature characteristics of the refrigerant charged in the charging step are identical to the saturation temperature characteristics of the previously determined normal refrigerant, an operator checks whether or not a type of the charged refrigerant is identical to a type of the previously determined normal refrigerant, and the operator starts operation of the refrigeration apparatus when the type of the charged refrigerant is identical to the type of the previously determined normal refrigerant.

5. The method of claim 2, wherein

in the inputting step, not only the type of the charged refrigerant, but also a cylinder number for the charged refrigerant, a name of a company to which an operator having charged the refrigerant belongs, and a name of the operator are manually input to the data storage.

6. The method of claim 1, wherein

the refrigerant circuit (20) adjusts a temperature of inside air.

7. A refrigeration apparatus including a refrigerant circuit (20) which is

connected to a compressor (30), through which a refrigerant circulates, and which thus performs a refrigeration cycle, the apparatus comprising:

a characteristics determiner (101) configured to derive saturation temperature characteristics of a refrigerant charged into the refrigerant circuit (20) from a pressure and a temperature of the refrigerant after an internal pressure of a refrigerant pipe of the refrigerant circuit (20) has reached zero or less, and determine whether the saturation temperature characteristics are identical to saturation temperature characteristics of a previously determined normal refrigerant; and

an alarm (102) configured to, when the characteristics determiner (101) determines that the saturation temperature characteristics are different from the saturation temperature characteristics of the normal refrigerant, issue an alarm indicating that the refrigerant charged into the refrigerant circuit (20) is different from the normal refrigerant.

8. The apparatus of claim 7 further comprising:

a data storage (103) to which, when the characteristics determiner (101) determines that the saturation temperature characteristics of the charged refrigerant are identical to the saturation temperature characteristics of the normal refrigerant, a type of the refrigerant charged into the refrigerant circuit (20) is manually input; and

an actuation prohibition section (105) configured to, when the type input to the data storage (103) is identical to a type of a predetermined refrigerant different from the previously determined normal refrigerant, forcibly prohibit actuation of the compressor (30).

9. The apparatus of claim 8 further comprising:

an actuation authorization section (104) configured to, when the type input to the data storage (103) is identical to a type of the previously determined normal refrigerant,

record a signal allowing actuation of the compressor (30) in the data storage (103).

10. The apparatus of claim 7, wherein

when the characteristics determiner (101) determines that the saturation temperature characteristics of the charged refrigerant are identical to the saturation temperature characteristics of the normal refrigerant, an operator checks whether or not a type of the charged refrigerant is identical to a type of the previously determined normal refrigerant, and

the refrigeration apparatus further includes an operation start control section configured to, when the type of the charged refrigerant is identical to the type of the previously determined normal refrigerant, actuate the compressor (30).

11. The apparatus of claim 8, wherein

not only the type of the charged refrigerant, but also a cylinder number for the charged refrigerant, a name of a company to which an operator having charged the refrigerant belongs, and a name of the operator are manually input to the data storage (103).

12. The apparatus of claim 7, wherein

the refrigerant circuit (20) adjusts a temperature of inside air.

CLAIMS

1. A method for detecting whether a different refrigerant has been charged into a refrigeration apparatus including a refrigerant circuit (20) through which a refrigerant circulates and which thus performs a refrigeration cycle, the method comprising:

a charging step of charging a refrigerant into the refrigerant circuit (20);

a characteristics determination step of determining whether saturation temperature characteristics of the refrigerant charged in the charging step are identical to saturation temperature characteristics of a previously determined normal refrigerant, the saturation temperature characteristics of the refrigerant being derived from a pressure and a temperature of the refrigerant;

an alerting step of, when, in the characteristics determination step, a determination is made that the saturation temperature characteristics of the refrigerant charged in the charging step are different from the saturation temperature characteristics of the previously determined normal refrigerant, issuing an alarm indicating that the charged refrigerant is different from the normal refrigerant;

an inputting step of, when, in the characteristics determination step, a determination is made that the saturation temperature characteristics of the refrigerant charged in the charging step are identical to the saturation temperature characteristics of the previously determined normal refrigerant, manually inputting a type of the charged refrigerant to a data storage (103); and

a forcible prohibition step of, when the type input to the data storage (103) is identical to a type of a predetermined refrigerant different from the previously determined normal refrigerant, forcibly prohibiting start of operation of the refrigeration apparatus.

2. The method of claim 1 further comprising:

an operation authorization step of, when the type input to the data storage is identical to a

type of the previously determined normal refrigerant, recording a signal allowing start of operation of the refrigeration apparatus in the data storage (103).

3. The method of claim 1, wherein

when, in the characteristics determination step, a determination is made that the saturation temperature characteristics of the refrigerant charged in the charging step are identical to the saturation temperature characteristics of the previously determined normal refrigerant, an operator checks whether or not a type of the charged refrigerant is identical to a type of the previously determined normal refrigerant, and the operator starts operation of the refrigeration apparatus when the type of the charged refrigerant is identical to the type of the previously determined normal refrigerant.

4. The method of claim 1, wherein

in the inputting step, not only the type of the charged refrigerant, but also a cylinder number for the charged refrigerant, a name of a company to which an operator having charged the refrigerant belongs, and a name of the operator are manually input to the data storage.

5. The method of claim 1, wherein

the refrigerant circuit (20) adjusts a temperature of inside air.

6. A refrigeration apparatus including a refrigerant circuit (20) which is connected to a compressor (30), through which a refrigerant circulates, and which thus performs a refrigeration cycle, the apparatus comprising:

a characteristics determiner (101) configured to derive saturation temperature characteristics of a refrigerant charged into the refrigerant circuit (20) from a pressure and a temperature of the refrigerant after an internal pressure of a refrigerant pipe of the

refrigerant circuit (20) has reached zero or less, and determine whether the saturation temperature characteristics are identical to saturation temperature characteristics of a previously determined normal refrigerant;

an alarm (102) configured to, when the characteristics determiner (101) determines that the saturation temperature characteristics are different from the saturation temperature characteristics of the normal refrigerant, issue an alarm indicating that the refrigerant charged into the refrigerant circuit (20) is different from the normal refrigerant;

a data storage (103) to which, when the characteristics determiner (101) determines that the saturation temperature characteristics of the charged refrigerant are identical to the saturation temperature characteristics of the normal refrigerant, a type of the refrigerant charged into the refrigerant circuit (20) is manually input; and

an actuation prohibition section (105) configured to, when the type input to the data storage (103) is identical to a type of a predetermined refrigerant different from the previously determined normal refrigerant, forcibly prohibit actuation of the compressor (30).

7. The apparatus of claim 6 further comprising:

an actuation authorization section (104) configured to, when the type input to the data storage (103) is identical to a type of the previously determined normal refrigerant, record a signal allowing actuation of the compressor (30) in the data storage (103).

8. The apparatus of claim 6, wherein

when the characteristics determiner (101) determines that the saturation temperature characteristics of the charged refrigerant are identical to the saturation temperature characteristics of the normal refrigerant, an operator checks whether or not a type of the charged refrigerant is identical to a type of the previously determined normal refrigerant, and

the refrigeration apparatus further includes an operation start control section configured to, when the type of the charged refrigerant is identical to the type of the previously determined normal refrigerant, actuate the compressor (30).

9. The apparatus of claim 6, wherein

not only the type of the charged refrigerant, but also a cylinder number for the charged refrigerant, a name of a company to which an operator having charged the refrigerant belongs, and a name of the operator are manually input to the data storage (103).

10. The apparatus of claim 6, wherein

the refrigerant circuit (20) adjusts a temperature of inside air.