

9.5.2 *Oil Draining*. Refrigerant removed from the oil after draining shall be collected and measured in accordance with 7.4.2.1.

9.5.3 *Clearing Unit*. Refrigerant captured during the clearing process shall be measured in accordance with 7.4.4.1.

9.6 *Final Recovery Vacuum*. The final recovery vacuum shall be the mixing chamber pressure in 7.4.3 expressed in kPa. The accuracy of the measurement shall be within 0.33 kPa.

9.7 *Residual Trapped Refrigerant*. The amount of residual trapped refrigerant shall be the final weight minus the initial weight of the test cylinder in 7.4.4.2, expressed in kg. The accuracy shall be  $\pm 0.02$  kg and reported to the nearest 0.05 kg.

9.8 *Quantity Recycled*. The amount of refrigerant processed before changing filters (see 7.5.3) shall be expressed in kg to an accuracy of  $\pm 1\%$ .

9.9 *Contaminant Levels*. The contaminant levels remaining after testing shall be published as follows:

Moisture content, ppm by weight  
Chloride ions, pass/fail  
Acidity, ppm by weight  
High boiling residue, % (by volume)  
Particulates-solid, pass/fail (visual examination)

Non-condensables, % (by volume)

9.10 *Minimum Data Requirements for Published Ratings*. Published ratings shall include all of the parameters as shown in Tables 2 and 3 for each refrigerant designated by the manufacturer.

#### Section 10. Tolerances

10.1 *Tolerances*. Performance related parameters shall not be less favorable than the published ratings.

#### Section 11. Marking and Nameplate Data

11.1 *Marking and Nameplate Data*. The nameplate shall display the manufacturer's name, model designation, type of equipment, designated refrigerants, capacities and electrical characteristics where applicable.

The nameplate shall also conform to the labeling requirements established for certified recycling and recovery equipment established at 40 CFR 82.158(h).

Recommended nameplate voltages for 60 Hertz systems shall include one or more of the utilization voltages shown in Table 1 of ARI Standard 110-90. Recommended nameplate voltages for 50 Hertz systems shall include one or more of the utilization voltages shown in Table 1 of IEC Standard Publication 38, IEC Standard Voltages.

11.2 *Data for Designated Refrigerants*. For each refrigerant designated, the manufacturer shall include all the following that are applicable per Table 2:

- Liquid Recovery Rate
- Vapor Recovery Rate
- High Temperature Vapor Recovery Rate
- Final Recovery Vacuum
- Recycle Flow Rate
- Residual Trapped Refrigerant
- Quantity Recycled

TABLE 2.—PERFORMANCE

| Parameter/Type of equipment            | Recovery | Recovery/<br>Recycle | Recycle | System<br>dependent<br>equipment |
|--|----------|----------------------|---------|----------------------------------|
| Liquid Refrigerant Recovery Rate ..... | (1)      | (1)                  | N/A     | N/A                              |
| Vapor Refrigerant Recovery Rate .....  | (1)      | (1)                  | N/A     | N/A                              |
| High Temp. Vapor Recovery Rate .....   | (1)      | (1)                  | N/A     | N/A                              |
| Final Recovery Vacuum .....            | (x)      | (x)                  | N/A     | (x)                              |
| Recycle Flow Rate .....                | N/A      | (x)                  | (x)     | N/A                              |
| Refrigerant Loss .....                 | (3)      | (x)                  | (x)     | (3)                              |
| Residual Trapped Refrigerant .....     | (2)      | (2)                  | (2)     | (2)                              |
| Quantity Recycled .....                | N/A      | (x)                  | (x)     | N/A                              |

x Mandatory rating.

<sup>1</sup> For a recovery or recovery/recycle unit, one must rate either liquid refrigerant recovery rate or vapor refrigerant recovery rate or one can rate for both. If rating only the one, the other shall be indicated by N/A, "not applicable."

<sup>2</sup> Mandatory rating for equipment tested for multiple refrigerants.

<sup>3</sup> Mandatory rating if multiple refrigerants, oil separation or non-condensable purge are rated.

NOTE: For recovery equipment, these parameters are optional. If not rated use N/A, "not applicable."

TABLE 3.—CONTAMINANTS

| Contaminant/Type of equipment | Recovery | Recovery/<br>Recycle | Recycle | System<br>dependent<br>equipment |
|-------------------------------|----------|----------------------|---------|----------------------------------|
| Moisture Content .....        | (*)      | (x)                  | (x)     | N/A                              |
| Chloride Ions .....           | (*)      | (x)                  | (x)     | N/A                              |
| Acidity .....                 | (*)      | (x)                  | (x)     | N/A                              |
| High Boiling Residue .....    | (*)      | (x)                  | (x)     | N/A                              |
| Particulates .....            | (*)      | (x)                  | (x)     | N/A                              |
| Non-Condensables .....        | (*)      | (x)                  | (x)     | N/A                              |

\* For recovery equipment, these parameters are optional. If not rated, use N/A, "not applicable."

x Mandatory rating.