Performance of refrigerant recovery and/or recycling equipment

Foreword

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International Standard ISO 11650 was prepared by Technical Committee ISO/TC 86, Refrigeration and airconditioning, Subcommittee SC 8, Refrigerants and refrigeration lubricants.

Annexes A and B form a normative part of this International Standard.

1 Scope

This International Standard specifies the test apparatus, test gas mixtures, sampling procedures and analytical techniques used to determine the performance of refrigerant recovery and/or recycling equipment (hereinafter, "equipment").

This International Standard also specifies the refrigerants to be used for the evaluation of equipment, i.e. halogenated hydrocarbon refrigerants and blends containing halogenated hydrocarbons.

This International Standard is not intended for use as a guide in defining the maximum levels of contaminants in recycled refrigerants used in various applications.

This International Standard is not intended to define safety requirements. It is strongly recommended that the product be designed, constructed, assembled, and installed in accordance with recognized safety requirements.
2 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

2.1 recover
to remove refrigerant in any condition from a system and store it in an external container

2.2 recycle
to reduce contaminants in used refrigerants by separating oil, removing non-condensables, and using devices such as filter-driers to reduce moisture, acidity, and particulate matter

2.3 reclaim
to process used refrigerant to new product specifications, and to verify by chemical analysis of the refrigerant that new product specifications have been met

Note 1 to entry: The identification of contaminants and required chemical analyses are specified by reference to national or International Standards for new product specifications.

2.4 standard contaminated refrigerant sample
mixture of new or reclaimed refrigerant and specified quantities of identified contaminants which constitute the mixture to be processed by the equipment under test

Note 1 to entry: These contaminant levels are expected only from severe service conditions.

2.5 recycle flow rate
amount of refrigerant processed divided by the time elapsed in the recycling mode

Note 1 to entry: For equipment which uses a separate recycling sequence, the recycle rate does not include the recovery rate (or elapsed time). For equipment which does not use a separate recycling sequence, the recycle rate is a
rate based solely on the higher recovery rate, of liquid or of vapour, by which the contaminant levels would have been measured.

2.6 **compression-suction method**

recovery method of transferring liquid refrigerant from a system to a recovery cylinder by lowering the pressure in the cylinder and raising the pressure in the system, and by connecting a separate line between the system liquid port and the cylinder

2.7 **equipment**

a refrigerant recovery or recycling system, including a compressor or pump or equivalent means, which is capable of recovering refrigerant to a final recovery vacuum of 100 kPa (absolute) or less without the assistance of components contained within an air-conditioning or refrigeration system

2.8 **blends**

refrigerants consisting of mixtures of two or more chemical compounds, often used individually as refrigerants for other applications

2.9 **vapour recovery rate**

the average rate that refrigerant is withdrawn from the mixing chamber between two pressures as vapour recovery rate is changing depending on the pressure

Note 1 to entry: The initial condition is vapour only at saturation pressure and a temperature at either 24 °C or at boiling point (100 kPa absolute), whichever is higher. The final-pressure condition is 15 % of the initial pressure, but not lower than the equipment final recovery vacuum and not higher than 100 kPa (absolute).
2.10 clearing equipment

the process of removing refrigerant from internal equipment volume before recovering or recycling a different refrigerant in order to minimize cross-contamination

Bibliography


1) A suitable source for the coarse air cleaner dust is: AC Spark Plug Division, General Motors Corporation, Flint MI, U.S.A.

2) To be published. (Replaces ISO 817:1974)

3) To be published.

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