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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 33063-2016

**Fluorinated olefins for refrigerant use - General method for the
determination of non-condensable gas (NCG)**

制冷剂用氟代烯烃 不凝性气体 (NCG) 测定通用方法

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by the China Petroleum and Chemical Industry Association. This standard is under the jurisdiction of the National Committee for Standardization of Refrigerants (SAC/TC63/SC9). The drafting of this standard. Zhejiang Chemical Industry Research Institute Co., Ltd., China Petroleum & Chemical Corporation Beijing Chemical Industry Research Institute, Changshu Three love rich in the new chemical materials Co., Ltd. This standard participates in the drafting unit. Zhejiang Blue Sky Environmental Protection High Technology Co., Ltd., Honeywell (China) Co., Ltd., Zhejiang Chemical Co., Ltd., Shandong Huaan New Material Co., Ltd., Shandong Dongyue Chemical Co., Ltd., Jiangsu Meilan Chemical Co., Ltd., Linhai Limin Chemical Co., Ltd. The main drafters of this standard. Shi Wanjun, Fang Lu, Ge Chunli, Liu Jun, Sheng Nan, Li Youzhen, Yang Jian, Wang Chenqian, Hu Yanfeng, Liu Hongjian. Refrigerants for fluorinated olefins Non-condensable gases (NCG) Determination of common methods

1 Scope

China's national test method for the non-condensable gas content of the fluorinated olefins used as refrigerants - the HFO fluids that have replaced the older HFCs in air conditioning and in the cold chain, where air trapped in the charge raises the head pressure, cuts the capacity and can push the compressor discharge into the range in which the fluid itself starts to break down. The standard specifies the general method for determining non-condensable gas by gas chromatography, covering the sampling of the specimen, the principle of the method, the apparatus and the test procedure, and the expression of the results. It applies to the determination of non-condensable gas in medium and high pressure fluorinated olefin refrigerants, and the sensitivity of the method is 0.02 % by

volume fraction. The determination is made on the vapour phase drawn from the container under controlled conditions, so that the sampling does not itself admit or lose the very air that is being measured; the chromatographic separation is then made on a column able to resolve the permanent gases from the olefin, and the result is calculated as a volume fraction of the whole. It is one of a family of general methods issued together for this class of refrigerant, alongside the determination of chloride, of water, of acidity and of the evaporation residue. Issued on 13 October 2016 and in force since 1 May 2017.

This standard specifies the use of gas chromatography for the determination of fluorinated olefin non-condensable gas refrigerant common test methods of the sample, test methods, Results and so on. This standard is applicable to the determination of fluorinated olefin noncondensable gases for medium and high pressure refrigerants. The sensitivity of this test method is 0.02% (Volume fraction).

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document. General rules for sampling of gas chemical products GB/T 6681-2003

GB/T 9722 General principles of chemical reagents for gas chromatography

GB/T 10248 Gas analysis - Preparation of mixed gases for calibration - Static volume method

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Fluoroolefin non-condensable gas non-condensable gas (NCG) in the fluorinated olefins
Fluorinated olefin sample gas and liquid phase equilibrium, the gas phase is difficult to compress the gas, the air.

4.1 Instruments and equipment

4.1.1 Sampling cylinders. 1000 mL or 500 mL double valve type small cylinder, the working pressure should be greater than the same product pressure.

4.1.2 syringe. 1mL or 2mL, good air tightness.

4.1.3 gasket. rubber cap or the same effect of sealed silicone and so on.

4.1.4 Sampler. Six-way valve with 1 mL or

0.5 mL dosing tube and connecting line.

4.2 sampling preparation Place the product packaging container to be taken for a period of time so that when the gas-liquid equilibrium is reached, measure the ambient temperature of the location, To 1 ° C, the ambient temperature of the sample.

4.3.1 Sampling according to the provisions of

7.10 in GB/T 6681-2003. Will be vacuum-dried sampling cylinders with sample packaging containers