ICS 71.080.20
CCS G 17

# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 33064-2016

## Fluorinated olefins for refrigerant use - General method for the determination of chloride (Cl-)

制冷剂用氟代烯烃 氯化物（Cl-）测定通用方法

**Issued on: October 13, 2016** **Implemented on: May 1, 2017**

**Issued by: General Administration of Quality Supervision, Inspection and Quarantine;**
**Standardization Administration of the PRC**

# Table of Contents





## 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 participated in the drafting unit. Zhejiang blue sky environmental high-tech Co., Ltd., Shandong Huaan New Material Co., Ltd., Shandong Dongyue Co., Ltd., Honeywell (China) Co., Ltd., Zhejiang Quhua Fluorine Chemical Co., Ltd., Linhai Limin Chemical Co., Ltd. The main drafters of this standard. Fang Lu, Shi Wanjun, Sun Hai, Liu Hongjian, Huang Yu, Qian Xiaofeng, Pang Yinjuan, Hui Yue, Chenzhou state, Hu Yanfeng. Refrigerants for fluorinated olefins Chloride (Cl-) Determination of common methods

## 1 Scope

China's national test method for the chloride content of the fluorinated olefins used as refrigerants - the residue of the chlorinated feedstocks and of the hydrogen chloride released in their manufacture, which in a charged system attacks the copper and the steel of the circuit and degrades the lubricant. The standard specifies the general method for determining chloride by the turbidimetric method, covering the sampling of the specimen, the principle of the method, the reagents, the test procedure and the expression of the results. It applies to the determination of chloride in fluorinated olefins for refrigerant use, and the sensitivity of the method is 0.0003 %. The determination works by absorbing the sample into water, acidifying it and adding silver nitrate, so that any chloride present forms a suspension of silver chloride; the turbidity of that suspension is then compared with that of a standard series prepared from a chloride solution of known concentration and treated in the same way, which is what allows so small a quantity to be measured without

instrumentation beyond a comparison tube. It is one of a family of general methods issued together for this class of refrigerant, alongside the determination of non-condensable gas, 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 sampling method of the general test method for the determination of chloride (Cl-) in fluorinated olefins for refrigerants by turbidity method. The principle of the method, Test methods, results, etc. This standard is applicable to the determination of chlorides in fluorinated olefins for refrigerants. The sensitivity of this test method is 0.0003%.

## 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 liquid chemical products

GB/T 6680-2003 General rules for sampling of gas chemical products GB/T 6681-2003

GB/T 6682 Analytical laboratory water specifications and test methods

## 3 Principle of the method

Under acidic conditions, the chloride (Cl-) in the fluorinated olefin of the refrigerant reacts with the saturated silver nitrate isopropanol solution to form silver chloride precipitate. Visual inspection of silver chloride was not observed.

### 4.1 Instruments and equipment

4.1.1 Sampling cylinders. 1000mL or 500mL single or double valve small cylinders, working pressure should be greater than 4.0MPa Working pressure should be Greater than the pressure of the same product.

4.1.2 Sampling bottle. 1000mL or 250mL mill glass bottle.

4.1.3 sampling catheter. copper or iron joints, copper (medium and high pressure), glass tube (low pressure) and so on.

### 4.2 Operational requirements

4.2.1 The sampling of fluorinated olefins for medium and high pressure refrigerants shall be carried out in accordance with

7.10 of GB/T 6681-2003. Sampling cylinders and Sampling ducts (copper or iron joints, copper conduits) should be vacuum dried, the sample should be liquid into the sampling

cylinder, the total amount of sampling should be guaranteed The need for inspection.

4.2.2 Sampling of fluorinated olefins for low pressure refrigerants shall be carried out in accordance with

7.1 of GB/T 6680-2003. Sampling vials and sampling ducts (Glass conduit) should be dry. The total amount of sampling should ensure the inspection needs.

4.2.3 affixed with the label and specify. product name, batch number, sampling date and sample name, etc., for inspection purposes.