高纯氟化氢 High Pure Hydrogen Fluoride

1、产品介绍 Product introduction

氟化氢（HF），又名氢氟酸，分子量为 20.01，为无色透明液体。在空气中发烟，有刺激性气味，能与一般金属、金属氧化物以及氢氧化物发生反应，生成各种盐类。氟化氢腐蚀性极强，能侵蚀玻璃和硅酸盐而生成气态的四氟化硅。氟化氢在电子工业等领域有着广泛且重要的应用。电子级氟化氢主要作为清洗剂和蚀刻剂，广泛应用于光伏产业、集成电路和玻璃减薄等行业，是关键辅助材料之一。它的纯度和洁净度对集成电路的成品率、电性能及可靠性都有着十分重要的影响。

Hydrogen fluoride (HF) is also known as hydrofluoric acid, it is colorless transparent liquid with molecular weight of 20.01. HF smokes in the air and has pungent smell, it can react with general metal, metallic oxide and hydroxides generating varieties of salt. Hydrogen fluoride is highly corrosive and can corrode glass and silicates to form gaseous silicon tetrafluoride. Hydrogen fluoride has been widely used in electronic industry and other fields. Electronic grade hydrogen fluoride is mainly used as cleaning agent and etching agent and widely used in photovoltaic industry, integrated circuit, glass thinning and other industry, it is one of the key auxiliary materials. Its purity and cleanliness have an important impact on the yield, electrical performance and reliability of integrated circuit.

2、产品指标 Quality specification

项目 items	单位 units	指标 index
氟化氢 Hydrogen fluoride（HF）≥	Vol.%	99.999
氮气 Nitrogen（N_2）≤	Vol.ppm	≤1ppm
（氧+氩）Oxygen+ Argon（O_2+Ar）≤	Vol.ppm	≤1ppm
水份 Moisture content（H_2O）	Vol.ppm	≤1ppm
四氟化硅 Silicon tetrafluoride（SiF_4）≤	Vol.ppm	≤1ppm
二 氧 化 硫 Sulfur dioxide（SO_2）≤	Vol.ppm	≤1ppm
二氧化碳 Carbon dioxide（CO_2）≤	Vol.ppm	≤1ppm
甲烷 Methane（CH_4）≤	Vol.ppm	≤1ppm
砷 Arsenic（As）	μg/L	1
铝 Aluminum（Al）	μg/L	1
铬 Chromium（Cr）≤	μg/L	1
镉 Cadmium（Cd）	μg/L	1
铜 Cuprum（Cu）≤	μg/L	1
铅 Plumbum（Pb）≤	μg/L	1
铁 Iron（Fe）≤	μg/L	1
镍 Nickel（Ni）≤	μg/L	1
钾 Kalium（K）≤	μg/L	1
钠 Sodium（Na）≤	μg/L	1
钙 Calcium（Ca）≤	μg/L	1

3、产品用途 Application

在集成电路和超大规模电路制造中，氟化氢用于晶圆表面清洗、芯片加工过程的清洗和腐蚀等。在玻璃减薄行业中，氟化氢用于液晶显示器玻璃基板的清洗、氮化硅及二氧化硅蚀刻等。超净高纯氢氟酸为强酸性清洗、腐蚀剂，可与硝酸、冰醋酸、双氧水及氢氧化铵、氟化铵等配置使用，还可用作分析试剂和制备高纯度的含氟化学品。

In manufacture of IC and VLSI, hydrogen fluoride is used for wafer surface cleaning, cleaning and corrosion of chip processing. In the glass thinning industry, hydrogen fluoride is used for liquid crystal display glass substrate cleaning, etch of silicon nitride and silicon dioxide, etc. Ultra-clean and high-pure hydrofluoric acid is a strong acid cleaning agent and corrosive agent, which can be used with nitric acid, glacial acetic acid, hydrogen peroxide, ammonium hydroxide, ammonium fluoride, etc., and can also be used as an analytical reagent and preparation of high-pure fluorine-containing chemicals.

4、包装、贮藏 Packaging and storage

电子级氟化氢充装在钢质无缝气瓶中，钢瓶容积分别为 44L、47L 和 440L 等。具体包装规格可根据用户要求定制更改。钢瓶衬里材料为为高密度聚乙烯(HDPE)、四氟乙烯和氟烷基乙烯基醚共聚物(PFA)、聚四氟乙烯(PTFE)等。氟化氢储存于阴凉、通风的库房中，远离火种、热源，库温不宜超过 30℃。应与易（可）燃物、食用化学品分开存放，切忌混储。储区应备有泄漏应急处理设备。

Electronic grade hydrogen fluoride is filled in seamless steel cylinders with volumes of 44L, 47L and 440L, respectively. Specific packaging specifications can be customized according to user requirements. The packing materials are HDPE, PTFE, PFA and PTFE. Hydrogen fluoride is stored in a shady and ventilated storeroom away from fire and heat source, the temperature of storeroom is lower than 30℃. It should be separately stored with inflammable (combustible), edible chemicals. The storage area shall be equipped with equipment for emergency.