

四氟化硅 Silicon Tetrafluoride

1、产品介绍 Product introduction

四氟化硅（SiF₄），又称氟化硅，分子式为 SiF₄，分子量为 104.06，是一种无色、有毒、有刺激性臭味的气体。四氟化硅易潮解，在潮湿空气中可产生浓烟雾。四氟化硅溶于乙醇、醚、硝酸、氢氟酸，吸湿性非常强，加压下变成液体，在电子行业中，四氟化硅有着广泛的应用。

Silicon tetrafluoride (SiF₄) is a kind of colorless, toxic, pungent and smelly gas with a molecular weight of 104.06. Silicon tetrafluoride is easily deliquescent and can produce thick smoke in damp air. Silicon tetrafluoride is soluble in ethanol, ether, nitric acid, hydrofluoric acid, its hygroscopicity is very strong and SiF₄ changes into a liquid under pressure, silicon tetrafluoride has a wide range of applications in the electronic industry.

2、产品指标 Quality specification

项目 Items	单位 Units	指标 Index
四氟化硅 Silicon tetrafluoride (SiF ₄) ≥	Vol.%	99.999
氢 Hydrogen (H ₂) ≤	Vol.ppm	1
氧+氩 Oxygen + Argon (O ₂ +Ar) ≤	Vol.ppm	0.5
氮 Nitrogen (N ₂) ≤	Vol.ppm	4
一氧化碳 Carbon monoxide (CO) ≤	Vol.ppm	0.1
二氧化碳 Carbon dioxide (CO ₂) ≤	Vol.ppm	0.3
甲烷 Methane (CH ₄) ≤	Vol.ppm	1
硫化氢 Hydrogen sulfide (SH ₂) ≤	Vol.ppm	0.1
氧气 Oxygen (O ₂) ≤	Vol.ppm	0.1
二氧化硫 Sulfur dioxide (SO ₂) ≤	Vol.ppm	10
总杂质含量 Total impurity content ≤	Vol.ppm	1
六氟二甲基硅醚 Hexafluorodimethyl silicone ether	供需双方商定 Supply and demand agreement	供需双方商定 Supply and demand agreement
As、B、P	供需双方商定 Supply and demand agreement	供需双方商定 Supply and demand agreement
颗粒 Particle	供需双方商定 Supply and demand agreement	供需双方商定 Supply and demand agreement

3、产品用途 Application

四氟化硅在电子行业中主要用作氮化硅、硅化钽等的 P 型掺杂剂、蚀刻剂及外延沉积扩散硅源等，还可用于制备电子级硅烷或硅。此外，四氟化硅可用于制备太阳能电池、氟硅酸和氟化硅、水泥和人造大理石的硬化剂。

Silicon tetrafluoride is mainly used as p-type dopant, etching agent and epitaxial deposition diffusion silicon source of silicon nitride and tantalum silicide in the electronic industry, and SiF₄ can also be used to prepare electronic silane or silicon. In addition, silicon tetrafluoride can be used to produce solar cells, fluorosilicic acid and silicon fluoride, cement and hardener of artificial marble.

4、包装、贮藏 Packaging and storage

四氟化硅充装在钢质无缝气瓶中，钢瓶容积分别为 8 L、44 L、47 L。具体包装规格可根据用户需求定制更改。四氟化硅储存于阴凉、干燥、通风良好的库房中，远离火种、热源。库温不宜超过 30℃，储区应备有泄漏应急处理设备。

Silicon tetrafluoride is stored in standard seamless cylinders, the packing specifications include 8L, 44L and 47L respectively. Specific packaging specifications can be customized according to user requirements. Silicon tetrafluoride is stored in a shady, dry and ventilated storeroom away from fire and heat source. Temperature of storeroom is lower than 30 °C, the storage area shall be equipped with equipment for emergency.