

六氟化钨 Tungsten Hexafluoride

1、产品介绍 Product introduction

六氟化钨，分子式为 WF_6 ，分子量为 297.830，沸点为 $17.5^{\circ}C$ ，熔点为 $2.3^{\circ}C$ ，室温下是一种无色气体，有强刺激性，有毒，毒性与氟相似。六氟化钨能溶于多数有机溶剂，遇水分解，在空气中被潮气分解而强烈冒烟。其化学性质活泼，几乎能和所有的金属（除金和铂）反应，对镍、蒙乃尔合金和不锈钢也有腐蚀性。在钨的氟化物中，六氟化钨是唯一稳定并被工业化生产的品种，其主要应用领域是在电子工业中作为金属钨化学气相沉积（CVD）工艺的原材料，特别是用它制成的 WSi_2 可用作大规模集成电路（LSI）中的配线材料。

Tungsten hexafluoride is a kind of colorless gas at room temperature, it is strong pungent, toxic and similar to toxicity of fluorine, its molecular formula is WF_6 and molecular weight is 297.830, boiling point is $17.5^{\circ}C$ and melting point is $2.3^{\circ}C$. Tungsten hexafluoride can be dissolved in organic solvents and decompose in water, it also decomposes by moisture in the air and then smokes strongly. Its chemical property is active, and it can react with almost all of metals (except gold and platinum) and corrode nickel, monel alloys and stainless steel. Tungsten hexafluoride is the only one produced steadily and industrially among the fluoride of tungsten, and it is used as the raw material of chemical vapor deposition (CVD) process of tungsten in the electronic industry, which is its main application field. In particular, WSi_2 made from WF_6 can be used as wiring material in large scale integrated circuit (LSI).

2、产品指标 Quality specification

项目 Items	单位 Units	指标 Index	指标 Index	指标 Index
六氟化钨 Tungsten hexafluoride ≥	Vol.%	99.9	99.999	99.9995
四氟化碳 Carbon tetrafluoride (CF ₄) ≤	Vol.ppm	10	0.5	0.5
氮气 Nitrogen (N ₂) ≤	Vol.ppm	50	1	0.5
(氧+氩) Oxygen+ Argon (O ₂ +Ar) ≤	Vol.ppm	50	0.5	0.5
二氧化碳 Carbon dioxide (CO ₂) ≤	Vol.ppm	-	0.5	0.5
一氧化碳 Carbon monoxide (CO) ≤	Vol.ppm	-	0.5	0.5
六氟化硫 Sulfur hexafluoride (SF ₆) ≤	Vol.ppm	10	0.5	0.5
四氟化硅 Silicon tetrafluoride (SiF ₄) ≤	Vol.ppm	10	0.5	0.5
氟化氢 Hydrogen fluoride (HF) ≤	Vol.ppm	800	1	1

项目 items	单位 units	指标 index
钼 Molybdenum (Mo) ≤	µg/L	10
铁 Iron (Fe) ≤	µg/L	5
钾 Kalium (K) ≤	µg/L	5
钠 Sodium (Na) ≤	µg/L	5
铬 Chromium (Cr) ≤	µg/L	5
钍 Thorium (Th) ≤	µg/L	0.1
铀 Uranium (U) ≤	µg/L	0.05
钴 Cobalt (Co) ≤	µg/L	5
锰 Manganese (Mn) ≤	µg/L	5
铅 Plumbum (Pb) ≤	µg/L	5
锌 Zinc (Zn) ≤	µg/L	5
钙 Calcium (Ca) ≤	µg/L	5
镁 Magnesium (Mg) ≤	µg/L	5
镍 Nickel (Ni) ≤	µg/L	10
铜 Cuprum (Cu) ≤	µg/L	5
铝 Aluminum (Al)	µg/L	5
砷 Arsenic (As)	µg/L	5
硼 Boron (B)	µg/L	5
镉 Cadmium (Cd)	µg/L	2
钛 Titanium (Ti)	µg/L	5

锂 Lithium (Li)	µg/L	5
硅 Silicium (Si)	µg/L	5
磷 Phosphorus (P)	µg/L	2

3、产品用途 Application

六氟化钨在电子工业中可作为金属钨化学气相沉积（CVD）工艺的原材料，还可用作半导体电极和导电浆糊等的原材料。此外，六氟化钨还被广泛用作氟化剂、聚合催化剂及光学材料的原料等。

Tungsten hexafluoride can be used as the raw material of chemical vapor deposition (CVD) process of tungsten in the electronic industry, also can be used as semiconductor electrode and conductive paste. In addition, tungsten hexafluoride is widely used as fluridizer, polymerization catalyst and raw material of optical materials.

4、包装、贮藏 Packaging and storage

六氟化钨充装在钢质无缝气瓶中，钢瓶容积分别为 8L、44L、47L。具体包装规格可根据用户需求定制更改。六氟化钨储存于阴凉、干燥、通风良好的库房中，远离火种、热源。储区应备有泄漏应急处理设备。

Tungsten hexafluoride 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. Tungsten hexafluoride is stored in a shady, dry and ventilated storeroom away from fire and heat source. The storage area shall be equipped with equipment for emergency.