

SHINKAI®

*Porous Metal
Filters*

金属膜过滤

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SHINKAI® Filter
雄凯过滤



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金属膜过滤

Porous Metal Filters

雄凯公司经过十多年对过滤、分离领域的探索与研究,借助真空烧结技术、冷等静压成型和模压成型技术、特种焊接技术,自主研发了国际一流的金属膜过滤材料。广泛应用于石油化工、化学、精细化工、煤化工、硅工业、食品饮料、核电、造船、汽车制造等行业。

利用金属膜过滤材料的孔隙结构、材质成分、耐压强度等特点成功为客户开发出最终的过滤产品,以解决各行各业的过滤、分离问题,为客户创造最大价值。

Nanjing Shinkai Filters Co., Ltd has owned world's leading metal membrane materials with hard researching and development independently after more than 10 years effort focusing on the field of filtration and separation with vacuum sintering technology, isostatic pressing molding technology, special welding technology. Our products has been used in petrochemical, chemical, fine chemical, coal chemical, silicon industry, food and beverage, nuclear power, shipbuilding, automobile manufacturing and other industries widely.

Taking the advantage of different metal membrane materials' pore structure, composition and pressure strength characteristics, we developed various final products for customer to solve filtration, separation problem successfully, and created the greatest value and benefit for our customers.

如何选择合适的金属膜材料

How to choose the appropriate metal membrane materials

根据客户所提供的参数, 雄凯基于以下方面对过滤材料进行设计, 为客户提供满足工况使用的金属膜材料。

- ① 工作条件 (温度、压力及流量)
- ② 过滤精度与过滤效率
- ③ 合适的元件材质 (耐腐蚀性及耐高温性能)
- ④ 允许的压差
- ⑤ 适宜的介质强度 (抗拉强度、抗疲劳强度以及承受负载能力)

According to the parameters provided by the customer, Shinkai will design and offer the right metal membrane materials based on customer's operation conditions in accordance with following aspects.

- ① Operating conditions (temperature, pressure and flow rate)
- ② Filtration precision and filtration efficiency
- ③ Appropriate material (corrosion resistance and high temperature resistance)
- ④ Allowable pressure drop
- ⑤ Appropriate medium strength (tensile strength, fatigue strength and load capacity)



凭借十多年的设计及制造经验, 雄凯可以根据客户的使用工况和特殊要求, 设计生产出满足客户使用要求的高精度、高透过量的金属膜过滤材料及过滤系统。雄凯拥有先进的金属膜材料性能检测设备以及模拟实验平台, 定能为客户提供高质量的金属膜材料及过滤系统优异的过滤设备, 也能够为客户分析解决过滤、分离过程中存在的问题, 为客户提供优质的服务。

Shinkai can design and produce high precision, high permeability metal membrane materials and filtration systems to meet customer requirements according to the customer's working conditions and special requirements with 10 years design and manufacturing experience. We owned the advanced metal membrane material properties testing equipments and simulation platform, which can provide customers high quality metal membrane materials and excellent filtration equipments in filtration system as well as analyzing and solving problems in the process of filtration and separation and providing customers high quality services.

雄凯金属膜材料提供以下材质:

- ① 不锈钢 (304L、316L)
- ② 钛及其合金
- ③ 纯镍金属
- ④ 蒙耐尔 (Ni-Cu 合金)
- ⑤ 因康镍 (Ni-Cr-Fe 合金)
- ⑥ 铁铝合金
- ⑦ Hastelloy® B、C、X

Shinkai provides the following materials for metal membrane material:

- ① Stainless steels (304L, 316L)
- ② Titanium and its alloys
- ③ Nickel
- ④ Monel® (Ni-Cu alloy)
- ⑤ Inconel® (Ni-Cr-Fe alloy)
- ⑥ Iron and aluminum alloy
- ⑦ Hastelloy® B, C and X

为何选择雄凯金属膜材料

Why choose metal membrane materials

雄凯金属膜材料拥有XKP元件、XKW元件以及XKF元件。

金属膜XKP元件是通过金属粉末进行成型、烧结、焊接等主要工序过程制备而成的过滤元件; 金属膜XKW元件是通过配网、轧制、烧结、平整、卷焊等主要工序过程制备而成的过滤元件; 金属膜XKF元件是通过金属纤维的无纺铺制、成型、烧结、焊接等主要工序过程而制成的过滤元件。雄凯特有的高温真空烧结技术和氩弧焊接及等离子焊接技术具有行业领先的优势, 为获得性能优良的过滤材料及元件提供了保障。

Shinkai has various metal membrane materials like XKP-IS element, XKW element and XKF element.

Metal membrane XKP element is made by the process of forming, sintering, welding and so on. Metal membrane XKW element is made of the main process of distribution, rolling, sintering, welding and leveling. Metal membrane XKF element is made of the main process of the non-spinning, forming, sintering, welding and so on. Shinkai is professional in high temperature vacuum sintering technology and argon arc welding and plasma welding technology which provides the guarantee of excellent performance of the filter materials and components.

金属膜材料的特性:

- ① 形状稳定, 元件具有较高强度
- ② 耐高温、耐热冲击
- ③ 抗腐蚀性好 (可在一定的酸、碱、盐溶液中使用)
- ④ 孔隙大小可精准调控
- ⑤ 孔隙率大, 透气性佳
- ⑥ 在线反洗效果好, 元件再生容易

Properties of metal membrane materials:

- ① Shape stability, elements with high strength
- ② High temperature resistance and heat shock resistance
- ③ Good corrosion resistance (which can be used in a certain acid, alkali and salt solution)
- ④ Pore size can be precisely controlled
- ⑤ Defined permeability and particle retention
- ⑥ Good back flushing or back flowing performance, and the component is easy to regenerate



产品的可靠性

Reliability



雄凯致力于为客户提供高品质的产品与优质的服务，专业的技术人员在对客户提供的技术参数进行分析、研究后，从而为客户选择并推荐最为适宜的金属膜过滤材料的材质、过滤等级以及满足特殊应用要求的过滤元件类型。专业系统设计人员可根据客户的工况条件及工艺参数设计出结构合理，满足客户需求的过滤分离设备。

Shinkai is committed to providing high quality products and services for customers, who will choose and recommend the most suitable material and filtration grade of filter material, filter element to meet the requirements of special applications after professional technical analyzing and technical parameters researching for customers. Our professional system designer will offer reasonable filtration and separation system reasonably structured and meeting operation requirement according to customer's working conditions and process parameters.



为了获得高品质的烧结金属膜过滤产品，我们对产品的整个生产流程进行监控，首先控制原料性能。粉末原料的性能包括粒度、粒度分布、化学成分、堆积比的分析检测；金属丝网主要控制检查丝网的编制方法、丝网化学成分、丝径、孔径大小及均匀性；金属纤维主要控制丝径均匀性、丝径直径、纤维化学成分等。雄凯不断对各项工艺参数进行优化，得到了制备性能最佳的制备工艺参数，在生产中严格控制工艺参数的准确性和稳定性，确保了不同批次产品性能的稳定性。严格的性能检测及检验为产品出厂把好最后一道关。

In order to obtain high quality metal membrane materials, we monitor the whole production process. Firstly, we control the raw material properties which include analysis and detection of grain size, particle size distribution, chemical composition and accumulation ratio for powder materials; method of preparation of the screen, chemical composition, diameter of wire, the size of the aperture and wire uniformity for metal mesh; uniformity of the wire diameter, wire diameter, fiber chemical composition for metal fiber. Shinkai optimized the process parameters constantly so as to obtain optimal parameters of the preparation process, we controlled accuracy and stability of the process parameters during processing and manufacturing strictly to ensure the stability among batches. We made performance inspection and analysis sternly before final packing and shipping to guarantee quality.

在大部分的化学过程中，316L不锈钢具有良好的抗腐蚀性能及耐高温性，我们选择316L材质作为金属膜过滤器材的首选材质。结合我们先进的真空烧结技术，我们确保材料烧结后的碳含量完全达到316L材质的要求，保证了金属膜过滤材料及元件的抗腐蚀性能。

SUS316L material possesses well corrosion resistance and high temperature resistance nature in most of chemical processing, so that we choose 316L material as preferred material for metal membrane filtration materials. We guarantee that material carbon content is completely up to the requirements of 316L with our advanced vacuum sintering technology, and corrosion resistance is ensured.



金属膜XKP-IS元件

Metal membrane XKP-IS element

雄凯生产的金属膜XKP-IS元件采用金属粉末为原材料,无需添加黏合剂,经冷等静压成型后,通过高温真空烧结制成。通过选配金属粉末颗粒尺寸与工艺参数,调整孔隙大小与分布。

Shinkai metal membrane XKP-IS element use metal powder as raw material without adding adhesive. This material is produced with forming under isostatic cool pressing and sintering with high temperature vacuum. The size and distribution of the pores are adjusted by choosing the size and process parameters of metal powder particles.

产品规格

金属膜 XKP-IS 元件可以提供管状产品，根据需要可以通过焊接或烧结配以各式接口。常用规格外径有Φ20、25、30、40、50、60、70、80、90、100、140mm，长度可从 100~1500mm，大于 1500mm 可以焊接，特殊规格可定做。

Product specification

We can provide metal membrane XKP-IS element with tubular shape and can be matched with a variety of interfaces by welding or sintering based on demanding. Common specifications of outer diameter haveφ20,25,30, 40, 50, 60, 70, 80, 90, 100, 140mm, length from 100 mm to1500mm, more than 1500mm can be welded, special specifications can be customized.

性能特点:

- ① 形状稳定, 元件具有较高强度
- ② 耐高温 (最高可在900°C环境下工作)
- ③ 抗腐蚀性能强
- ④ 耐冲击、交变负载高
- ⑤ 透气性、分离效果佳
- ⑥ 反冲洗效果好, 元件易再生等

Properties:

- ① Shape stability, components with high strength
- ② Sufficient thermal strength up to 900°C
- ③ Corrosion resistance
- ④ Good mechanical properties
- ⑤ Defined permeability and particle retention
- ⑥ Good back flushing performance and the element is easy to regenerate, etc.

应用场合:

- ① 催化剂过滤
- ② 过滤液体、气体
- ③ PTA生产中母液回收过滤
- ④ 食品饮料中的过滤
- ⑤ 沸腾汽化床
- ⑥ 液体冲灌气泡等

Applications:

- ① Catalyst Filtration
- ② Liquid and Gas Filtration
- ③ Mother liquor recovery in PTA process
- ④ Food and beverage industry filtration
- ⑤ Fluidization
- ⑥ Sparging

合金材料:

- ① 不锈钢 (304L, 316L)
- ② 钛及其合金
- ③ 纯镍金属
- ④ 蒙耐尔 (Ni-Cu合金)
- ⑤ 因康镍 (Ni-Cr-Fe合金)
- ⑥ 铁铝合金
- ⑦ Hastelloy®B、C、X

Alloy materials:

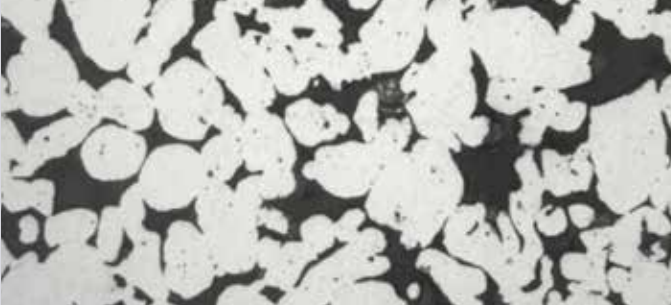
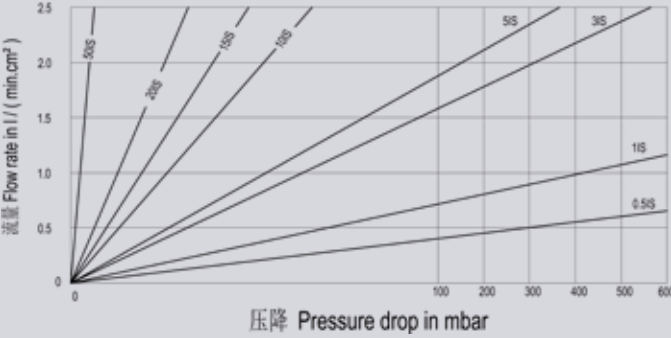
- ① Stainless steels (304L, 316L)
- ② Titanium and its alloys
- ③ Nickel
- ④ Monel® (Ni-Cu alloy)
- ⑤ Inconel® (Ni-Cr-Fe alloy)
- ⑥ Iron and aluminum alloy
- ⑦ Hastelloy®B,C and X

XKP-IS元件参数表

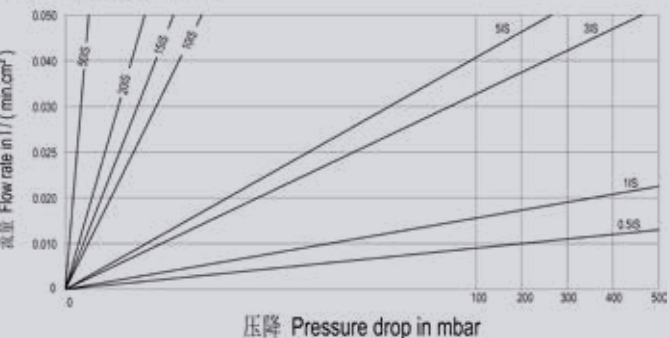
Technical parameter

规格 Fiter grade	孔隙率 Porosity (%)	起泡压强 Bubble-point pressure (Pa)	过滤效率 Grade efficiency (98%µm)	透气性 Permeability coefficients m³/(m²·h· KPa)	耐压强度 Compressive strength (MPa)
XKP-0.5IS	18	12800	1	20	5
XKP-1IS	22	10500	3	25	5
XKP-3IS	30	6000	5	40	5
XKP-5IS	30	4750	6.5	60	4.8
XKP-8IS	30	4200	8.5	80	4.5
XKP-10IS	32	4000	10	90	4.5
XKP-15IS	35	2000	15	170	4
XKP-20IS	45	1600	25	400	3
XKP-30IS	46	1200	36	650	2
XKP-50IS	46	800	50	750	2
检测标准 Applied standard	GB/T 6886-2008	ISO4003	ISO/TR13353:2002	GB/T 6886-2008	GB/T 6886-2008

透气性 Air permeability



透水性 Water permeability



金属膜XKP-AX元件

Metal membrane XKP-AX element

雄凯生产的金属膜XKP-AX元件采用金属粉末为原材料, 无需添加黏合剂。经轴向压制成型后, 通过高温真空烧结制成。通过选配金属粉末颗粒尺寸与工艺参数, 调整孔隙大小与分布。

Shinkai metal membrane XKP-AX element use metal powder as raw material without adhesive adding. This material is produced with forming under axial pressing and sintering with high temperature vacuum. The size and distribution of the pores are adjusted by choos-ing the size and process parameters of metal powder particles.

产品规格

金属膜 XKP-AX 元件可以提供板状、片状、管状产品, 根据需要可以通过焊接或烧结配以各式接口。

Product specification

XKP-AX element can be various shape of sheet, tubular plate, and provid-ed a variety of interfaces by welding or sintering according to demanding.



性能特点:

- ① 形状稳定, 元件具有较高强度
- ② 耐高温 (最高可在900°C环境下工作)
- ③ 抗腐蚀性能强
- ④ 耐冲击、交变负载高
- ⑤ 透气性、分离效果佳
- ⑥ 反冲洗效果好, 元件易再生

应用场合:

- ① 阻火隔爆
- ② 平衡、阻尼气流
- ③ 传感器的探头保护
- ④ 烟气检测保护、传热
- ⑤ 气动设备上的过滤、消声
- ⑥ 高压氮气过滤
- ⑦ 粉煤灰处理等

合金材料:

- ① 不锈钢 (304L、316L)
- ② 钛及其合金
- ③ 纯镍金属
- ④ 蒙耐尔 (Ni-Cu合金)
- ⑤ 因康镍 (Ni-Cr-Fe合金)
- ⑥ 铁铝合金
- ⑦ Hastelloy® B、C、X

Properties:

- ① Shape stability, components with high strength
- ② Sufficient thermal strength up to 900°C
- ③ Corrosion resistance
- ④ Good mechanical properties
- ⑤ Defined permeability and particle retention
- ⑥ Good back flushing performance and the element are easy to regenerate, etc.

Applications:

- ① Explosion protection
- ② Fluidization
- ③ Probe protection of sensor
- ④ Fume detection protect and heat transfer
- ⑤ Filtration and soundproof on the pneumatic equipment
- ⑥ High pressure nitrogen filtration
- ⑦ Powder Handling & Processing

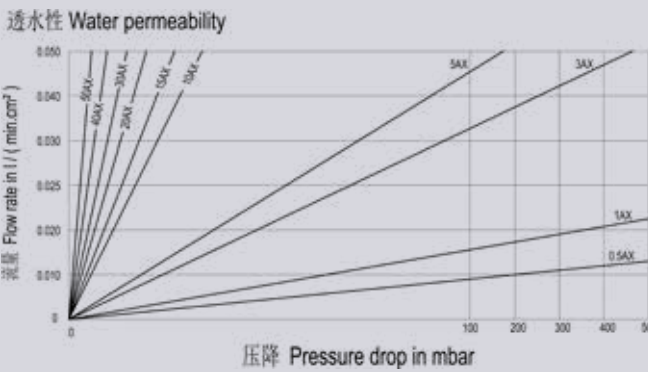
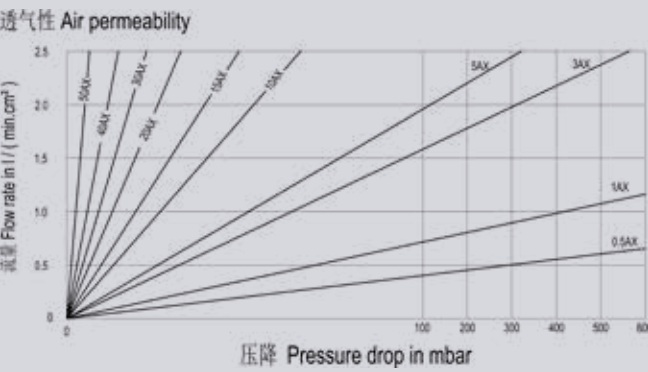
Alloy materials:

- ① Stainless steels (304L, 316L)
- ② Titanium and its alloys
- ③ Nickel
- ④ Monel® (Ni-Cu alloy)
- ⑤ Inconel ®(Ni-Cr-Fe alloy)
- ⑥ Iron and aluminum alloy
- ⑦ Hastelloy® B、C and X

XKP-AX元件参数表

Technical parameter

规格 Fiter grade	孔隙率 Porosity (%)	起泡压强 Bubble-point pressure (Pa)	过滤效率 Grade efficiency (98%µm)	透气性 Permeability coefficients m³/(m²·h· KPa)	耐压强度 Compressive strength (MPa)
XKP-0.5AX	21	8300	3	22	5
XKP-1AX	21	8000	4	27	5
XKP-3AX	31	5300	7	40	5
XKP-5AX	31	3600	9	45	5
XKP-10AX	43	2400	11	83	4
XKP-15AX	40	1600	17	160	4
XKP-20AX	43	1100	20	390	3
XKP-30AX	46	950	44	480	3
XKP-40AX	47	600	54	600	2
XKP-50AX	50	500	61	750	2
检测标准 Applied standard	GB/T 6886-2008	ISO4003	ISO/TR13353:2002	GB/T 6886-2008	GB/T 6886-2008



非对称金属膜XKP-AS元件

Asymmetric metal membrane XKP-AS element

雄凯生产的非对称金属膜滤芯XKP-AS元件为非对称金属膜层结构。其表面过滤机理从根本上改善了金属膜XKP-IS元件的许多性能。其特点在于将约0.3mm厚的金属膜过滤介质依附在孔隙较粗的金属膜XKP-IS外表面构成。这种结构能分别优化金属膜滤芯的强度和透气性,并提高了过滤精度。

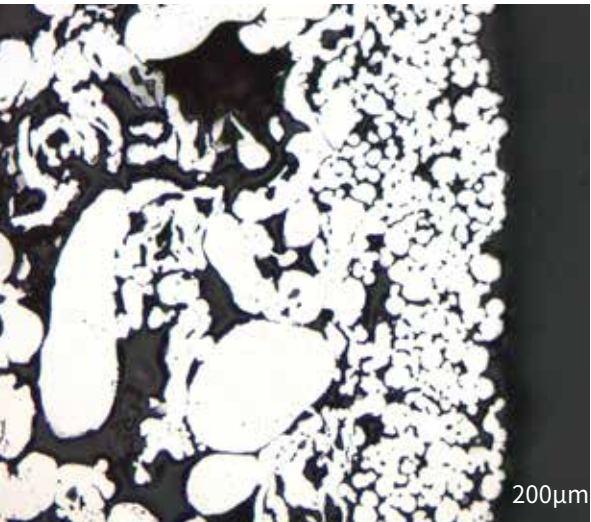
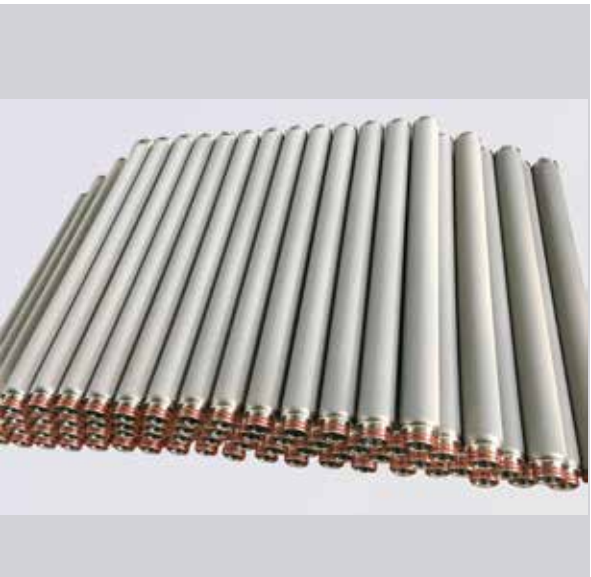
Shinkai XKP-AS element describes a high porous asymmetric designed metallic membrane which improves the performance of XKP-IS element, especially in life time and permeability, cause of the surface filter characteristic and the possibility to decrease the filtration retention in the lower micron range.

产品规格

非对称金属膜XKP-AS元件可以提供管状产品, 根据需
要可以通过焊接或烧结配以各式接口。常用规格外径有
Φ20、25、30、40、50、60、70、80、90、100、140mm, 长度
可从50~1500mm, 大于1500mm可以焊接, 特殊规格
可定做。

Product specification

XKP-AS can be produced as tube shape. Fittings can be bonded to the
porous parts by welding or directly during sintering process. Common
specifications of outer diameter have Φ20, 25, 30, 40, 50, 60, 70, 80, 90, 100,
140mm, length from 100 mm to1500mm, more than 1500mm can be
welded, special specifications can be customized.



性能特点:

- ① 形状稳定, 强度高(耐压50bar)
- ② 过滤精度高(亚微米级0.1μm)
- ③ 非对称结构带来更高的透气性
- ④ 真正意义上的表面过滤
- ⑤ 滤芯使用周期长
- ⑥ 金属膜层不会脱落
- ⑦ 耐冲击、交变负载高
- ⑧ 耐高温(最高可在900°C环境下工作)
- ⑨ 反冲洗效果好, 元件易再生等

应用场合:

- ① 催化剂过滤
- ② 高温气体过滤
- ③ PTA生产中母液回收过滤
- ④ 食品饮料中的过滤
- ⑤ 沸腾汽化床
- ⑥ 液体冲灌气泡等
- ⑦ 新能源行业的细颗粒过滤

合金材料:

- ① 不锈钢(304L、316L)
- ② 钛及其合金
- ③ 纯镍金属
- ④ 蒙耐尔(Ni-Cu合金)
- ⑤ 因康镍(Ni-Cr-Fe合金)
- ⑥ 铁铝合金
- ⑦ Hastelloy® B、C、X

Properties:

- ① Shape stability, components with high strength (sufficient pressure strength up to 50bar)
- ② Good filtration precision (0.1μm)
- ③ High permeability because of asymmetric design
- ④ Surface filter
- ⑤ Longer service life in process
- ⑥ The metal membrane layer is not to fall off
- ⑦ Good mechanical properties
- ⑧ Sufficient thermal strength up to 900°C
- ⑨ Good back flushing performance

Applications:

- ① Catalyst Filtration
- ② Hot gas filtration
- ③ Mother liquor recovery in PTA process
- ④ Filtration in food and beverage industry
- ⑤ Fluidization
- ⑥ Sparging
- ⑦ Fine particle filtration in new energy industry

Alloy materials:

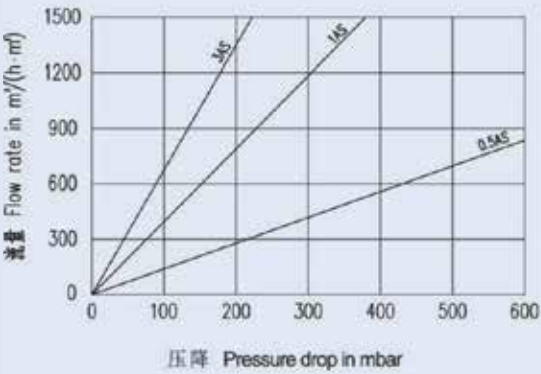
- ① Stainless steels (304L, 316L)
- ② Titanium and its alloys
- ③ Nickel
- ④ Monel® (Ni-Cu alloy)
- ⑤ Inconel® (Ni-Cr-Fe alloy)
- ⑥ Iron and aluminum alloy
- ⑦ Hastelloy® B, C and X

XKP-AS元件参数表

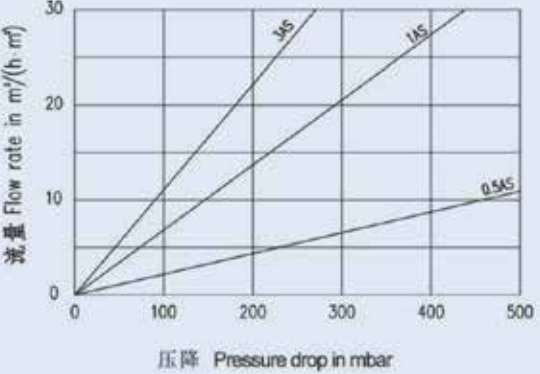
Technical parameter

规格 Fiter grade	孔隙率 Porosity (%)	起泡压强 Bubble-point pressure (Pa)	过滤效率 Grade efficiency (98%μm)	透气性 Permeability coefficients m³/(m²·h· KPa)	耐压强度 Compressive strength (MPa)
XKP-0.1AS	37	45000	1	10	4.5
XKP-0.5AS	37	12800	2	60	4.5
XKP-1AS	37	10500	3.2	75	4.5
XKP-3AS	37	6000	8.3	120	4.5
检测标准 Applied standard	GB/T 6886-2008	ISO4003	ISO/TR13353:2002	GB/T 6886-2008	GB/T 6886-2008

透气性 Air permeability



透水性 Water permeability



金属膜XKP-TIS超细元件

Ultrafine metal membrane XKP-TIS element

雄凯生产的金属膜XKP-TIS超细元件采用金属粉末为原材料，无需添加黏合剂，采用与XKP-IS元件、XKP-AS元件及XKP-AX元件不同的成型工艺，经冷等静压制后，通过高温真空烧结制成。通过选配金属粉末颗粒尺寸与工艺参数，调整孔隙大小与分布。由于XKP-TIS元件的直径比更小，所以在同等大小的过滤器筒体中，可以装配更多的XKP-TIS金属膜过滤元件，非常适用于中试产品装置中的应用。

Shinkai XKP-TIS element uses metal powder as raw material without adding adhesive. This material is produced with forming under isostatic cool pressing and sintering with high temperature vacuum. The size and distribution of the pores are adjusted by choosing the size and process parameters of metal powder particles. As the diameter of XKP-TIS is smaller, more XKP-TIS filter elements can be assembled in the same size filter cartridges. XKP-TIS is very suitable for the application in the pilot plant.

产品规格

金属膜XKP-TIS超细元件可以提供管状产品，根据需要可以通过焊接或烧结配以各式接口。常用规格外径有Φ8、10、13、19、25mm；过滤精度有：0.1、0.2、0.4、0.8、1、2、5μm；长度可从50~1000mm，大于1000mm可以焊接，特殊规格可定做。

Product specification

XKP-TIS can be produced as tube shape. Fittings can be bonded to the porous parts by welding or directly during sintering process. The defined pore sizes of XKP-TIS have 0.1, 0.2, 0.4, 0.8, 1, 2, 5μm. Common specifications of outer diameter have Φ8, 10, 13, 19, 25mm, length from 50 mm to 1000mm, more than 1000mm can be welded, special specifications can be customized.



金属膜XKW元件

Metal membrane XKW element

雄凯生产的金属膜XKW元件由多层（常规为五层）304L或316L不锈钢丝网轧制成型后，经高温真空烧结和氩弧焊或等离子焊接而成。通过对丝径、丝网目数、丝网编织方式的控制调整孔隙大小。

Shinkai metal membrane XKW element is rolling of the 316L or 304L stainless steel wire by a multi - layer (five layers) stainless steel, which is made by high temperature vacuum sintering and argon arc or plasma welding. The pore size is controlled by adjusting the wire diameter, mesh size, weaving method of wire mesh.

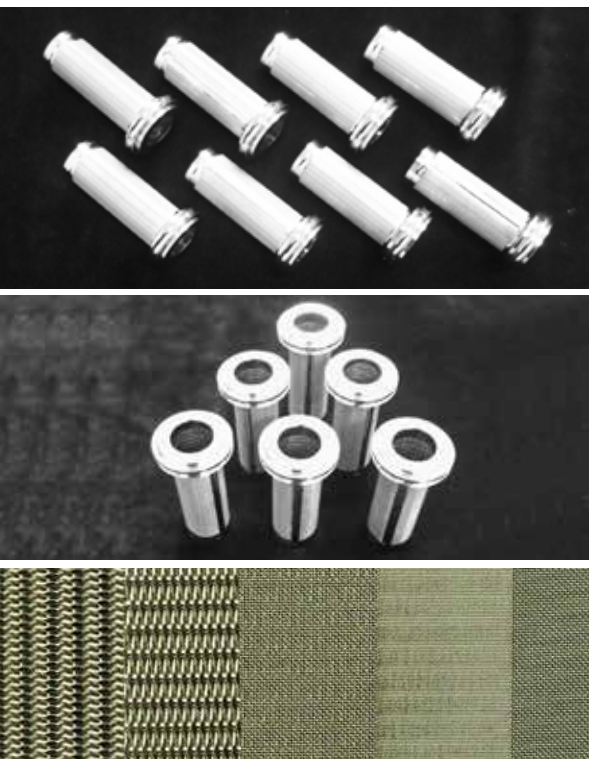
产品规格

金属膜XKW元件可提供管状和片状产品。通过焊接可配以各式接口，其过滤精度为2~200μm，外形尺寸可根据客户要求加工。

Product specification

The XKW element may be provided with tubular shape, sheet shape, it can be matched with a variety of interfaces by welding. Its filtering precision is 2~200um, dimension can be processed according to customer request.

性能特点：	Properties：
① 渗透性好	① Defined permeability
② 强度高	② Good mechanical properties
③ 抗腐蚀性强	③ Corrosion resistance
④ 耐高温	④ High temperature resistance
⑤ 易于清洗和反清洗	⑤ Easy cleaning and back flushing
⑥ 无材料脱落，使用寿命长等	⑥ No material shedding, longer service life in process, etc.
应用场合：	Applications：
① 聚酯过滤	① Polyester Filtration
② 油品过滤	② Oil Filtration
③ 制药脱色	③ Pharmaceutical bleaching
④ 食品饮料过滤	④ Food and beverage filtration
⑤ 化工产品的过滤	⑤ Chemical products Filtration
⑥ 水及空气等介质的过滤	⑥ Water and air filtration
合金材料：	Alloy materials：
① 不锈钢（304L、316L）	① Stainless steels (304L, 316L)



金属膜XKW元件

Metal membrane XKW element

过滤盘是过滤、洗涤、干燥(简称三合一)的理想过滤元件。其结构有整体型和分体型,它是将多层金属丝网通过特殊的叠层压制后经高温真空烧结而成,是一种具有高强度的过滤材料。各层丝网的网孔相互交错,形成一种均一而理想的过滤结构,并且能够对材料的孔隙大小、渗透性能和强度特性进行合理的匹配与设计。

Metal membrane plate is an ideal element for filtering, washing and drying together (so-called “three-in-one”). This element is laid multi-layers metal wire mesh together through special lamination press and the high temperature vacuum sintering with two structures of monolithic devices and split device, and it is one kind of filtration material with the high strength. Each layer of screen mesh cross each other, forming a uniform and ideal filter structure, and it is capable of matching reasonably and design of porosity, permeability and strength properties of materials.

产品规格

过滤盘的主滤材采用多层不锈钢烧结网(SUS316L)制作,其过滤精度为2~200μm,直径200~3000mm,特殊规格可定做。

Product specification

Metal membrane plate is made by sintering multi-layer stainless steel net (SUS316L), filtering precision is 2~200μm, the diameter is 200-3000mm, special specifications can be customized.



性能特点:

- ① 孔隙分布均匀
- ② 流量、阻力控制稳定
- ③ 强度高、刚性大, 安装维护简便
- ④ 耐高温、耐腐蚀性能强
- ⑤ 物料不易泄露, 无堵塞、短路现象
- ⑥ 过滤精度准确
- ⑦ 可反复冲洗, 使用寿命长等

Properties:

- ① Particle retention
- ② Stable flow and drag control
- ③ High strength, good mechanical properties, easy installation and maintenance
- ④ High temperature and corrosion resistance
- ⑤ Material is not easy to leak, no blockage, no short-circuit
- ⑥ Filter fitness accuracy
- ⑦ Good back flushing, longer service life in process, etc.

应用场合:

- ① 粉体行业中的气体均匀化
- ② 钢铁行业中的流化板
- ③ 气体分布流化床的孔板材料
- ④ 催化剂支撑格栅
- ⑤ 极高温环境中做分散冷却材料
- ⑥ 制药行业中的过滤、洗涤、干燥等

Applications:

- ① Powder Handling & Processing
- ② Fluidizing panel in steel industry
- ③ Pore plate material for fluidized bed of gas distribution
- ④ Support grid for catalyst
- ⑤ Dispersing cooling material in a high temperature environment
- ⑥ Filtration, washing and drying in the pharmaceutical industry

合金材料:

- ① 不锈钢(304L、316L)

Alloy materials:

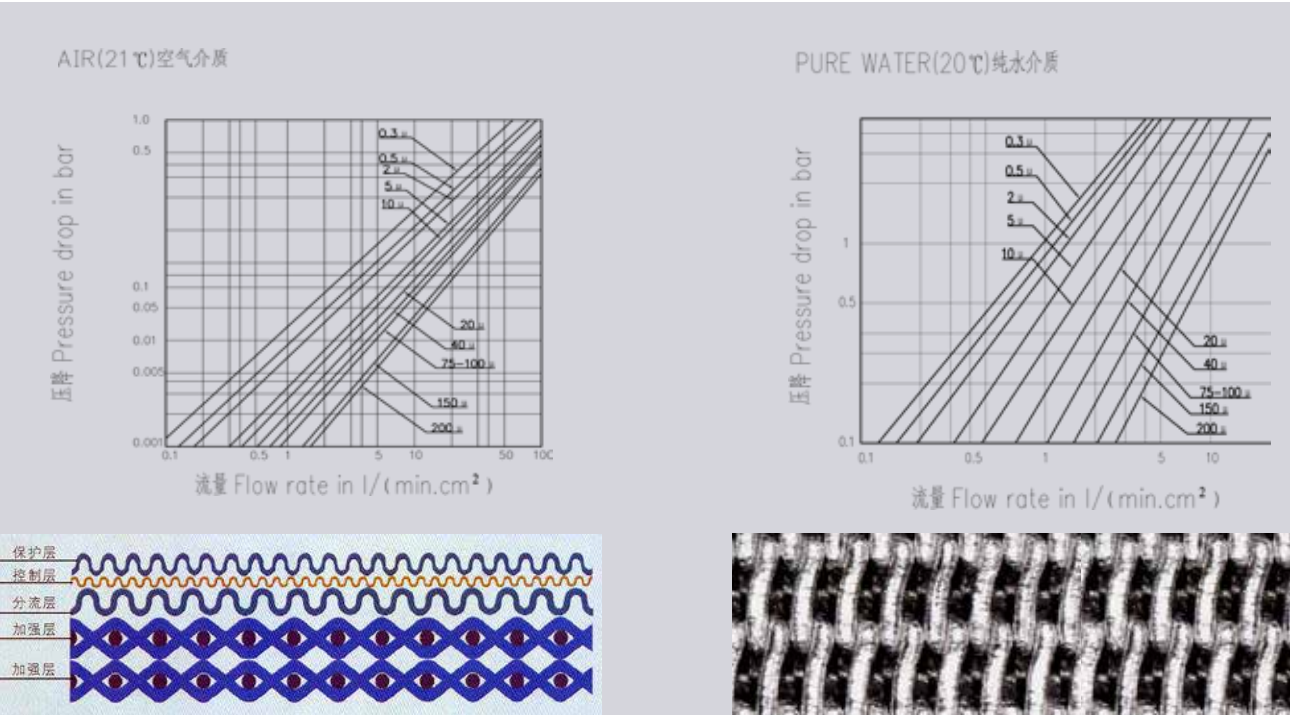
- ① Stainless steels (304L, 316L)

XKW元件参数表

Technical parameter

名义过滤精度 Nominal filtration accuracy (μm)	绝对过滤精度 Absolute filtration accuracy 98 % (μm)	孔隙率 Porosity %	阻力系数 Drag Coefficient	冒泡压力 Bubble-Point Pressure (mmH2O)	拉伸强度 Tensile strength (kgf/mm2)	厚度 Thickness (mm)	重量 Weight (kg/m2)
2	8-9	五层网	14 X 105	280-640	五层网	五层网	五层网
5	12-14	5-LAYERS	12 X 105	250-600	5-LAYERS	5-LAYERS	5-LAYERS
10	16-18	38	7 X 105	220-550	12	1.7	8.4
20	28-32	六层网	4 X 105	180-450	六层网	六层网	六层网
40	58-63	6-LAYERS	4 X 105	150-400	6-LAYERS	6-LAYERS	6-LAYERS
75	—	48	2 X 105	70-130	7	3.5	14.4
100	—		2 X 105	60-110			

以上参照标准 GB/T 25863-2010



金属膜XKF元件

Metal membrane XKF element

雄凯生产的金属膜XKF元件采用进口不锈钢纤维为原材料, 经过对金属纤维的无纺铺制、叠配后, 通过高温真空烧结制成的多孔深度型过滤材料, 具有很高的孔隙率是其最为突出的特点。由于金属纤维的直径十分统一, 其孔隙尺寸分布也就限制在一个很窄的环境内, 因而, 金属纤维毡在确保精准的过滤精度时, 还可提供很好的透气性能。金属纤维毡还可通过折波从而增大滤芯的过滤面积, 因而增大了纳污量。

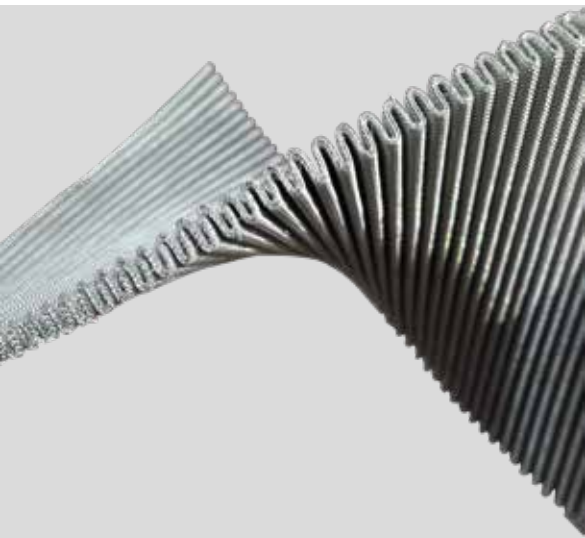
Shinkai sintered metal fiber felt XKF element is made of overseas stainless steel fiber as raw material, and it is a high porosity porous deep filtration material with process of non-spinning, folding of the metal fiber, porous filter material as well as high temperature vacuum sintering. Because the diameter of the metal fiber is very uniform, the distribution of pore size is also limited in a very narrow environment, therefore, the metal fiber felt can guarantee the filtration accuracy; also provided good air permeability. The metal fiber felt can also increase filter area by means of folding, thus increasing the quantity of pollutant received.

产品规格

雄凯金属膜XKF元件的厚度可在0.7~1.2mm内选择, 并配有单面支撑金属丝网。液体的绝对过滤精度为3~200μm, 气体最高达0.1μm。尺寸可根据客户要求提供, 根据需要, XKF元件可加工成圆管状、折波管状和片状。

Product specification

Shinkai metal membrane XKF element thickness can be various from 0.7mm to 1.2mm, which is equipped with wire mesh by single side support. Absolute filtration precision for liquid is 3~200μm, gas is up to 0.1μm. Size can be provided according to customer requirement, XKF components can be manufactured to different shape of circular tube, folded wave tube and plate based on demand.



性能特点:

- ① 孔隙率高(最高达90%)、透气性能佳
- ② 过滤面积大、纳污性能强(使用周期长)
- ③ 耐高温、耐高压
- ④ 抗腐蚀性能强
- ⑤ 压强损失小
- ⑥ 耐受绝大部分溶剂
- ⑦ 过滤精度高等

Properties:

- ① High porosity (up to 90%) and defined permeability
- ② Filtration surface is large and the quantity of pollutant received is strong (longer service life in process).
- ③ High temperature and pressure resistance
- ④ Corrosion resistance
- ⑤ Low pressure drop
- ⑥ Most of the solvent is tolerated
- ⑦ High filtration precision

应用场合:

- ① 粘胶过滤
- ② 特殊油过滤(航空煤油、变压器油等)
- ③ 蒸汽及高温气体过滤
- ④ 高粘度的化学溶液过滤
- ⑤ 分离雾体(气液分离)
- ⑥ 高分子聚合物过滤(尼龙、工程塑料、碳纤维、PET、PTMEG等)

Applications:

- ① Viscose filtration
- ② Special oil filtration (aviation kerosene, transformer oil, etc.)
- ③ Steam and hot gas filtration
- ④ High viscosity chemical filtration
- ⑤ Aerosol separation (gas-liquid separation)
- ⑥ Polymer filtration (nylon, engineering plastics, carbon fiber, PET, PTMEG, etc.)

合金材料:

- ① 不锈钢(304L、316L)

Alloy materials:

- ① Stainless steels (304L, 316L)

金属膜XKF元件

Metal membrane XKF element

随着人们对环境要求越来越高, 众多的气体需要处理才能排往大气中。雄凯生产的金属膜XKF元件采用高精度的金属纤维毡经卷制或折波后焊接而成。由于金属膜XKF元件具有很高的孔隙度, 使得元件的透气性能极佳, 远大于同等精度的XKP元件和XKW元件。

Numerous gas shall be disposed before discharging with people more sensitive to environment. Shinkai metal membrane XKF element is made by high precision metal fiber felt with folding and welding which performance is much better than same precision accuracy XKP element and XKW element.

产品规格

气体过滤专用金属膜XKF元件的绝对过滤精度为0.1~200μm, 其外形尺寸可按客户要求加工。常见规格为Φ120~180mm×2000~8000mm。

Product specification

Absolute filtration precision of XKF element for gas filtration is 0.1~200μm, special boundary dimension can be processed according to customer requirement. Common specification is Φ120~180mm x 2000~8000mm.

性能特点:

- ① 元件自身强度高
- ② 抗腐蚀性能强
- ③ 表面光滑, 无材料脱落
- ④ 元件再生性能好
- ⑤ 透气性高(最高达90%), 压阻小
- ⑥ 耐高温
- ⑦ 可反复清洗, 使用寿命长等

Properties:

- ① Good mechanical properties
- ② Good corrosion resistance
- ③ Surface is smooth, no material loss
- ④ Elements are easy to regenerate
- ⑤ Defined permeability (up to 90%), low pressure drop
- ⑥ High temperature resistance
- ⑦ Good back washing properties, longer service life in process, etc.

应用场合:

- ① 乙烯工程中的高温气体过滤
- ② 高温粉尘过滤
- ③ 煤化工中的气体过滤
- ④ 双氧水中的空分过滤

Applications:

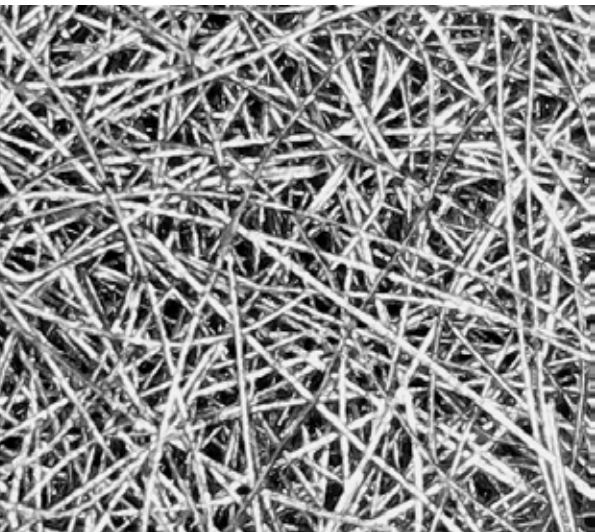
- ① Hot gas filtration in ethylene project
- ② Hot dust filtration
- ③ Gas filtration in the coal chemical industry
- ④ Air separation filtration in hydrogen peroxide production

合金材料:

- ① 不锈钢(304L、316L)

Alloy materials:

- ① Stainless steels (304L, 316L)



XKF元件参数表

Technical parameter

绝对过滤精度 Absolute filtration accuracy (μm)	冒泡压力 Bubble-Point Pressure (Pa)	平均透气度 Air permeability (l/dm2/min)	厚度 Thickness (mm)	重量 Weight (g/m2)	孔隙率 Porosity %	纳污量 Dirt holding capacity (mg/cm2)
3	12300	9	0.35	975	65	6.4
5	7600	34	0.34	600	78	5.47
7	5045	57	0.27	600	72	6.47
10	3700	100	0.32	600	77	7.56
15	2470	175	0.37	600	80	7.92
20	1850	255	0.49	750	81	12.44
25	1480	320	0.61	1050	79	19.38
30	1235	455	0.63	1050	79	23.07
40	925	580	0.66	1200	77	25.96
60	630	1000	0.7	750	87	33.97

以上为我司供应商Bekipor®标准



市场与应用

Markets and Applications

雄凯过滤拥有专业的研发与生产团队，具有多种多样的新型产品，满足绝大部分的应用要求。可提供、柱状、片状、锥状、板状的金属膜产品，并且还可以根据用户提供的需求和参数设计成套的过滤系统。雄凯在复杂的液固分离、气固分离、气力输送、气体分布等领域积累了丰富的工程经验，整个过程中雄凯可以为客户提供优质的服务。

Shinkai has a professional research and production team and provides filtration systems which can meet users’ need. We have accumulated a wealth of engineering experience in the fields of liquid-solid separation, gas-solid separation, powder handling & processing, sparging, etc.

主要应用领域及市场

Applications and Markets

精细化工

- ① 医药、农药中间体催化加氢
- ② 活性炭脱色
- ③ 产品提纯过滤
- ④ 工业用水及气体的过滤

石油化工

- ① 催化剂过滤
- ② 高温气体过滤
- ③ 母液回收过滤
- ④ 高分子聚合物过滤

硅工业

- ① 工业硅
- ② 多晶硅
- ③ 有机硅
- ④ 硅烷气体
- ⑤ 气相二氧化硅

煤化工

- ① 充气锥
- ② 充气笛管
- ③ 管道吹扫器
- ④ 高温气体过滤器

锂电池新能源

- ① 氟化物过滤
- ② 超细固体过滤
- ③ 产品提纯过滤
- ④ 锂盐过滤

仪器仪表

- ① 消音
- ② 阻火隔爆
- ③ 平衡、阻尼气流
- ④ 传感器探头保护
- ⑤ 烟气检测保护、传热

食品饮料

- ① 饮用水处理
- ② 发酵过滤
- ③ 气体分布

军事工业

- ① 核电
- ② 船舶
- ③ 雷达
- ④ 航空航天
- ⑤ 放射性废物处理

Fine chemical industry

- ① Catalytic hydrogenation of pharmaceutical and pesticide intermediates
- ② Activated Carbon decoloration
- ③ Product purification and filtration
- ④ Industrial water and gas filtration

Petroleum chemical industry

- ① Catalyst filtration
- ② Hot gas filtration
- ③ Mother liquor recovery filtration
- ④ Polymer filtration

Silicon industry

- ① Industrial silicon
- ② Polysilicon
- ③ Organic silicon
- ④ Silane gas
- ⑤ Gaseous silicon dioxide

Coal chemical industry

- ① Porous aeration cone
- ② Aeration pipe
- ③ Processing bulk devices
- ④ Hot gas filter

Lithium battery new energy industry

- ① Fluoride filtration
- ② Ultra-fine solid filtration
- ③ Product purification and filtration
- ④ Lithium filtration

Instrument industry

- ① Silencing
- ② Explosion protection
- ③ Fluidization
- ④ Probe protection of sensor
- ⑤ Smoke detection protection and heat transfer

Food and beverage industry

- ① Drinking water filtration
- ② Biofermentation filtration
- ③ Sparging

Military industry

- ① Nuclear power
- ② Ship
- ③ Radar
- ④ Aeronautics
- ⑤ Radioactive waste disposal



资质证书 Qualification

南京雄凯过滤设备有限公司非常注重产品的质量，已通过ISO9001质量体系，ISO14001环境体系，ISO45001职业健康安全体系的认证，经过十几年的努力已经为全球数千家知名企业提供性能优良、质量过硬的优质产品。

Shinkai attach great importance to product quality. We have passed ISO9001 quality system, ISO14001 environmental system, and ISO45001 occupational health and safety system certification. After more than ten years of hard work, it has provided thousands of well-known companies around the world with excellent performance and quality. Excellent quality products.





专利 Patents

南京雄凯通过自主研发已取得多项国家实用新型专利和发明专利, 为客户进行过滤设备和过滤方案的设计提供了有力支撑。

Nanjing Shinkai has obtained several national utility model patents and invention patents through independent research and development, providing strong support for customers to design filter equipment and filtration solutions.

专利名称	专利号	专利类型
一种化工液体原料的过滤装置	201811550283.1	发明
一种无余液干法排渣过滤器	201920618271.1	实用新型
一种多晶硅冷氢化流化床反应装置	201920616889.4	实用新型
一种用于有机硅单体合成流化床反应器的气固分离装置	201920616895.X	实用新型
一种粉末加压气力输送充气锥	202021064964.X	实用新型
一种适用于生物发酵的气体分布器	202021069402.4	实用新型
一种金属过滤元件	202021076232.2	实用新型
一种双层不锈钢金属滤膜	2020210762356	实用新型

Patent	No.	Type
A Filter for Chemical Liquid Raw Materials	201811550283.1	Invention
Dry Slag Removal Filter without Remaining Liquor	201920618271.1	Utility Model
Polysilicon cold hydrogenation fluidized bed reaction device	201920616889.4	Utility Model
Gas-solid separation device for fluidized bed reactor of silicone synthesizing	201920616895.X	Utility Model
Powder pressurized pneumatic conveying inflatable cone	202021064964.X	Utility Model
A gas sparger suitable for biological fermentation	202021069402.4	Utility Model
A metal filter element	202021076232.2	Utility Model
A double-layer stainless steel metal filter membrane	2020210762356	Utility Model

检验检测 Inspection and Testing

南京雄凯的检测机构合作单位有江苏大学、南京工业大学及航空航天116厂, 采用标准的检测方法获得元件相关的技术参数。主要的检测项目: 起泡压强, 通量, 孔隙率, 环拉强度及疲劳分析检测等。

Nanjing Shinkai's testing institutions include Jiangsu University, Nanjing University of Technology, and Aerospace 116 Factory, which use standard testing methods to obtain component-related technical parameters. Main testing items include bubbling pressure, gas/liquid flux, porosity, ring tensile strength and fatigue analysis and testing, etc.



检验检测

Inspection and Testing



Fatigue Test
疲劳测试



Permeability Test
透气性测试

Pilot Filter
实验过滤器



01

金属膜过滤
Porous Metal Filters

02

过滤设备
Filter Equipment

03

过滤系统
Filter System

04

过滤解决方案
Filter Solution

01

液固分离
Liquid-Solid
Separation

02

气固分离
Gas-Solid Separation

03

气力输送
Powder Handling
& Processing

04

气体分布
Sparging