

蜂窝陶瓷 Ceramic Honeycomb



辉宏牌蜂窝陶瓷系江西省萍乡市湘东石油化工填料厂2007年以来自主研发生产的蓄热材料转型升级产品，主要分为RTO蜂窝陶瓷蓄热体、HTAC蜂窝陶瓷蓄热体、蜂窝陶瓷催化剂载体3大系列产品。

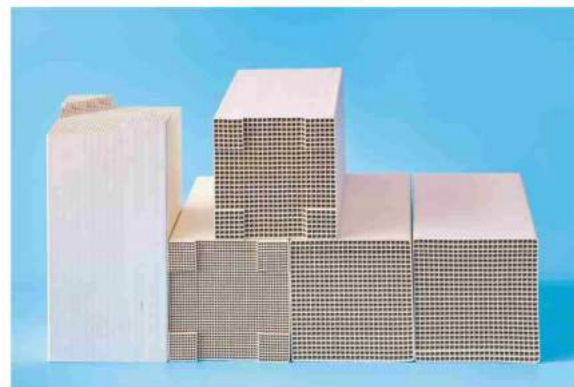
Huihong brand honeycomb ceramic is a heat storage material transformation and upgrading product independently developed and produced by Xiangdong Petrochemical Filler Plant of Pingxiang City, Jiangxi Province since 2007. It is mainly divided into three series of products: RTO honeycomb ceramic heat storage, HTAC honeycomb ceramic heat storage and honeycomb ceramic catalyst carrier.

RTO 蜂窝陶瓷蓄热体

The RTO Cellular Ceramic heat Accumulator

蜂窝陶瓷蓄热体是RTO技术的核心部件，其实质是起蓄热式换热器作用兼具高温净化VOCs功能，是热量储存与交换的功能材料，是环保净化VOCs功能材料，具有节能环保的双重功能。（VOCs：有机废气）

RTO honeycomb ceramic thermal accumulator is the core component of RTO technology. Its essence is a heat exchanger that has the function of high temperature purification VOCs, is a functional material of heat storage and exchange, is a functional material of environmental protection purification VOCs, and has the dual function of energy saving and environmental protection. (VOCs: Organic waste gas)



HTAC蜂窝陶瓷蓄热体

HTAC Honeycomb Ceramic Regenerator

HTAC 蜂窝陶瓷蓄热体是 HTAC 技术的核心部件，其实质是起蓄热式换热器作用，一般由耐火材料制成，周期储存和释放热量，实现冷热介质热量的传递，是热量储存与交换的功能材料；同时又可以抑制并减少NOx的排放及降低燃烧噪音达到环保的功效。

HTAC honeycomb ceramic heat storage is the core component of HTAC technology, its essence is regenerative heat exchanger. It is generally made of refractory materials, periodic storage and release of heat scene, realize the transfer of heat transfer, is a functional material for heat storage and exchange, and at the same time, it can inhibit and reduce the emission of NOx and reduce the combustion noise to achieve environmental protection.

蜂窝陶瓷催化剂载体

Honeycomb Ceramic Catalyst Carrier

载体是负载型催化剂重要的组成部分，是活性组分的分散剂和支撑体，是负载活性组分等物质的骨架材料。蜂窝陶瓷催化剂载体又称为催化剂第二载体（ γ - Al_2O_3 、分子筛、TiO₂ 粉体以涂层形式负载于蜂窝陶瓷常称为第一载体），也称为催化剂基体。蜂窝陶瓷催化剂载体是流体流动低阻力器件，兼具表面积大的多孔陶瓷特点，是对第一载体及活性组分起负载、支撑、固定作用的功能材料。

The carrier is an important part of the loading catalyst a dispersion adhesive or an active component The support is a skeleton material bearing active components. Cellular ceramic catalyst carrier is also known as the second catalyst carrier (γ - Al_2O_3 , molecular sieve, TiO₂ powder loaded in the form of coating, honeycomb ceramic is often known as the first carrier), also known as the catalyst matrix. The honeycomb ceramic catalyst carrier is low in fluid flow Resistance devices, both porous ceramics with large surface area, are functional materials that load, support and fix the first carrier and active components.

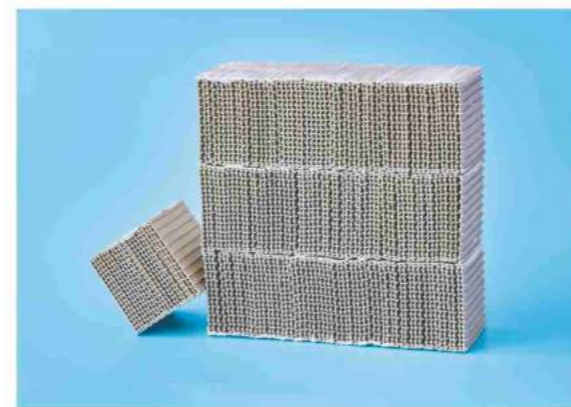


组合式板片蜂窝陶瓷蓄热体

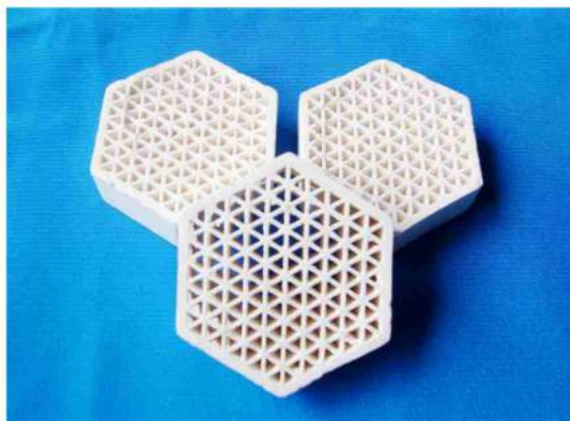
Combined plate honeycomb ceramic regenerator for metallurgical machinery

组合式板片蜂窝陶瓷蓄热体由一片片长100×宽100×厚6.8-11.6带齿陶瓷薄片层层叠加，再用高温陶瓷胶粘结成305×305×101的大块蜂窝陶瓷，材质一般为硅铝瓷。它具有蓄热量大、耐酸碱侵蚀、不易沾染粉尘油污、价格低廉等优点，广泛应用于废气净化及瓦斯氧化的RTO和RCO装置。

The combined plate honeycomb ceramic regenerator for metallurgical machinery consists of a piece of length 100×wide 100×thick 6.8-11.6 toothed ceramic slices layered on top of each other, and then the 305×305×101 large honeycomb ceramics are bonded by high temperature ceramic glue. The material is usually silicon aluminum ceramic. It has the advantages of large heat storage, acid and alkali corrosion resistance, not easy to be contaminated with dust oil, low price, etc. widely used in waste gas purification and gas oxidation RTO and RCO devices.



瓷球系列 Ceramic Ball



BL 微孔载体

BL Micropore Ceramic Ball

BL 微孔载体的中文名为菠萝微孔载体，是新型的介孔材料，具备对催化剂活性组分起分散和承载作用，具有对流体吸附过滤净化提纯功能，产品外表呈菠萝球形状，是集负载、过滤、吸附、截污、支撑、保护等为一体的多功能环保过滤吸附材料。

BL 微孔载体产品按孔径分布分为HH-BL-1（酶固定化用载体）、HH-BL-2（催化剂制备用载体及催化剂保护剂）、HH-BL-3（环保吸附过滤载体）等3种型号。

BL Microporous Carrier of Chinese name weak microporous carrier, is a new type of mesoporous material, with the catalyst active components dispersion and bearing effect, with fluid adsorption filter purification function, product appearance is weak ball shape, is set load, filtration, adsorption, sewage, support, protection for the integration of multi-functional environmental protection filter adsorption materials.

蜂窝支撑剂

Honeycomb proppant

蜂窝支撑剂作为各种反应器内催化剂的保护材料及塔填料，广泛应用于石油、化工、化肥、天然气及环保等工业的固定床反应器中。蜂窝支撑剂采用独特的网巢结构和制造工艺，产品具有极高的空隙率和比表面积，可大大降低反应器床层的压降、增加汽液分离切割点，改善流体的分散性，并能够吸附捕捉物料中的杂质颗粒及换热器和加热炉等设备中产生的污垢，从而提高催化剂和装置的使用效率。

Honeycomb nest proppant, as the protective material and tower filler of catalysts in various reactors, is widely used in the fixed bed reactor of petroleum, chemical industry, chemical fertilizer, natural gas and environmental protection industry. Nest nest proppant, using unique netnest structure and manufacturing process, with thousands of extremely high void and surface area, can greatly reduce the reactor bed pressure drop, increase steam separation cutting point, improve fluid dispersion, and adsorption capture material impurity particles and heat exchanger and furnace equipment, dirt, so as to improve the efficiency of catalyst and device.

惰性氧化铝瓷球

Inert Alumina Ceramic Balls

惰性瓷球是以工业氧化铝和高岭土为主要原料，经配料、成型、高温煅烧制成的，具有足够化学稳定性和热稳定性及机械强度且可以起支撑、覆盖、过滤、改善流体分布等组合作用的球状陶瓷体；惰性瓷球作为传统产品，广泛应用于石油、化工、化肥、天然气及环保等行业。作为反应器内催化剂的支撑和覆盖材料，可缓冲进入反应器内液体和气体对催化剂的冲击，保护催化剂，并改善反应器内液体和气体的分布。

Inert porcelain ball is composed of industrial alumina and kaolin, forming and hot satin, with sufficient chemical stability, thermal stability, mechanical strength, and can support, covering, filtering and improving fluid distribution. As a traditional product, it is widely used in petroleum, chemical, fertilizer, natural gas and environmental protection industries. As a supporting and covering material for the catalyst in the reactor, it can buffer the impact of the liquid and gas entering the reactor on the catalyst, protect the catalyst, and improve the distribution of the liquid and gas in the reactor.

菠萝球

Pineapple ball

菠萝球填料简称BL球，是由江西省萍乡市湘东石油化工填料厂自主发明的瓷球填料新一代产品，产品以工业氧化铝和高岭土为主要原料，在传统瓷球基础上实施外观和性能改进，经科学配方、成型和致密高温烧结制成，是具有足够化学稳定性和热稳定性及机械强度且可以起支撑、覆盖、过滤、改善流体分布等功能的菠萝球状陶瓷体。

Pineapple ball filler, also known as BL ball, is a new generation product of ceramic ball filler independently invented by Xiangdong Petrochemical Filler Factory in Pingxiang City, Jiangxi Province. The product mainly uses industrial alumina and kaolin as raw materials, and improves the appearance and performance of traditional ceramic balls. After scientific formulation, shaping, and dense high-temperature sintering, it is made with sufficient chemical stability, thermal stability, and mechanical strength, and can support, cover, filter Pineapple spherical ceramic body with improved fluid distribution and other functions.

开孔瓷球

Perforated Ceramic Ball

开孔瓷球是在惰性瓷球基础上改进的产品，它以球体直径为轴心进行开孔，具有惰性瓷球同等的机械强度、化学稳定性和热稳定性，又增加了比表面积和空隙率，从而增强了物料的分散性和通量，降低了系统的阻力，广泛应用于石油、化工、化肥、天然气及环保等行业作为塔器的支撑和覆盖材料。

Open porcelain ball is improved on the basis of inert porcelain ball products, it with sphere diameter for axial opening, with the same mechanical strength, chemical stability and thermal stability, and increase the specific surface area and void ratio, thus enhancing the material dispersion and throughput, reduce the resistance of the system, widely used thousands of oil, chemical industry, fertilizer, natural gas and environmental protection industry as a tower support and cover material.

瓷球系列 Ceramic Ball

活性瓷球

Activated Ceramic Ball

活性瓷球是以工业氧化铝和高岭土为主要原料，添加镁、钴、镍等过渡金属氧化物活性组分，经成型、高温煅烧、浸渍和活化等工艺过程制成的，具有足够机械强度和一定催化活性的球状陶瓷体。活性瓷球通常填充安装于反应器作为催化剂的覆盖支撑材料。并具有一定的催化或助催化活性功能，使用活性瓷球，不仅可有效地提高反应器的空间利用率，而且在一定程度上起保护催化剂不被中毒和烧结的作用，从而延长催化剂的使用寿命。

辉宏牌活性瓷球产品类型按材质活性组分分为镍钼型（Ni-Mo）、镍钨型（Ni-W）、钴钼型（Co-Mo）3种。

Active porcelain ball is a spherical ceramic body with sufficient mechanical strength and certain catalytic activity made from industrial alumina and kaolin as the main raw materials, adding transition metal oxide active components such as magnesium, cobalt, nickel, and molybdenum, and made through molding, high temperature sintering, leaching and activation. Active porcelain ball usually fill installation thousands of reactor as catalyst covering support material and has certain catalytic or fuel, active function, using active porcelain ball, not only can effectively improve the space utilization of the reactor, and to a certain extent, protect the catalyst from poisoning and sintering, so as to extend the service life of the catalyst.

Huihong brand According to the active components of active porcelain ball products, there are three types: nickel-molybdenum (Ni-Mo), nickel-tungsten (Ni-W) and cobalt-molybdenum (Co-Mo).

氧化锆球

Zirconia Ceramic Ball

氧化锆瓷球具有密度大，强度高，耐磨、耐腐蚀性能好，热膨胀系数小，研磨效率高、噪音低、使用寿命长、不沾污物料等优点。是适用于各种研磨机械的优质研磨介质。同时氧化锆瓷球又是一种新型轴承材料，可应用于精密机床，高速电机、汽车、空调机中的传统轴承，亦可用于石油、化工、航天、航海等高科技领域；还可根据用户要求，生产制成阀芯、阀体、环套、管板、轴等各种产品。

Zirconia porcelain ball has the advantages of high density, high strength, wear resistance, good corrosion resistance, small thermal expansion coefficient, high grinding efficiency, low noise, long service life, and no contaminated materials. It is a high-quality grinding medium suitable for all kinds of grinding machinery. At the same time, zirconia porcelain ball is a new bearing material, can be used in precision machine tools, high-speed motor, automobile, air conditioning in the traditional bearings, can also be used in petroleum, chemical, aerospace, navigation and other high-tech fields; but also according to the user requirements, the production of valve core, valve body, ring, sleeve, tube, plate, shaft and other products.

研磨球

Grinding Ceramic Ball

研磨瓷球是以等静压成型或滚制成型制备的高强度瓷球，适用于各种球磨机作为研磨介质的耐磨氧化铝瓷球。广泛应用于陶瓷、建材、化工、油墨等行业。

Grinding porcelain ball is a high strength porcelain ball made by isostatic pressure molding or rolling. It is a wear-resistant aluminum oxide porcelain ball suitable for various ball mills as grinding medium. Widely used in thousand ceramics, building materials, chemical industry, ink and other industries.

蓄热瓷球

Heat Storage Ceramic Ball

蓄热瓷球具有强度高、耐磨损、导热率和热容量大、蓄热效率高、热稳定性好、温度剧变时不易破裂等优点。特别适用于空气分离设备蓄热器和钢铁厂高炉煤气加热炉作蓄热填料，通过对煤气和空气进行双预热，使燃烧温度快速达到轧钢对钢坯加热的要求。江西省萍乡市湘东石油化工填料厂是《蓄热瓷球》JC/T2348-2015行业标准的第一起草单位。

The heat storage porcelain ball has the advantages of high strength, wear resistance, large thermal conductivity and heat capacity, high heat storage efficiency, good thermal stability, and not easy to rupture during the temperature dramatic change. It is especially suitable for heat accumulator of air separation equipment and blast furnace gas heating furnace. Through double preheating of gas and air, the combustion temperature quickly meets the requirements of rolling steel and steel heating. Jiangxi Pingxiang Xiangdong petrochemical packing plant is The drafting unit of JC/T2348-2015 industry standard, and the product quality reaches the international advanced level.

耐火球

Refractory Ball

耐火球是以工业氧化铝和耐火高岭土为主要原料，经科学配方、成形和高温煅烧制成，它具有：

- 机械强度高，使用周期长；
- 化学稳定性好，不与物料发生化学反应；
- 耐高温性能好，最高耐热温度可达1900度。特别适用于化肥厂高低温变换炉、转化炉、加氢转化器、脱硫槽及甲烷化炉中，起分散气液、并支撑、覆盖和保护催化剂的作用。也可以用于钢铁行业热风炉和加热变换设备中。

Fireproof ball is made of industrial alumina and refractory kaolin as the main raw materials, by scientific formula, forming and high temperature sintering, it has:

- High mechanical strength, and long service cycle
- Good chemical stability, no chemical reaction with the material
- Good high temperature resistance the highest heat resistance temperature up to 1900 degrees. It is especially suitable for high and low temperature converter, converter, hydrogenation converter, desulfurization tank and a-Anhui chemical furnace, which plays the role of dispersing gas and liquid, and supporting, covering and protecting catalyst. It can also be used in the iron and steel industry in the hot blast furnace and heating conversion equipment



耐酸瓷砖、耐酸瓷板

Acid Resistant Bricks & Tiles

该产品适用于化工厂、化肥厂、硫酸厂等厂家，干燥塔、吸收塔反应器的内衬，防腐池，沟槽通道设施的内衬及耐酸地面铺设。

Acid-proof bricks and tiles can be widely used in the construction of acid-proof and corrosion-proof liner of the dryer absorption tower, tanks, pools and floors found in chemical, fertilisers and metallurgical industries.

全瓷球拱

Ceramic Dome Arch

全瓷球拱支承结构是根据传统的瓷砖砌拱成型和花岗岩拱型的基础上改进的。其优点是在原来的开孔率只有20-27%基础上，上增加50%左右，解决了传统的因净截面积小，而使塔的操作性能受到影响的问题，它的设计先进，使用寿命长，是八十年代开发的一种较先进的支承结构。

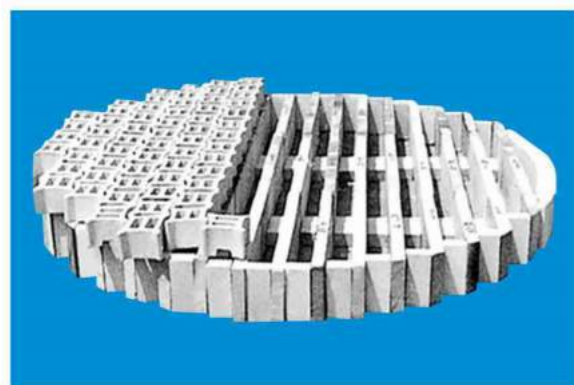
Ceramic support system was a high efficient product on basis of traditional ceramic bricks and granites and bricks. Its large opening rate (>50%) is higher than previous lower 20-27% opening rate, and so solve the problem of small free section area of tower, in addition, it has long service life and improve the operation capacity of tower.

全瓷条梁与格栅组合

All-Ceramic Beam And Grating Combination

该支承结构由条梁、格栅组合而成，它的主要特点是：综合开孔率可达58%以上，能适应1.5-2m/s的高气速要求，产品制作容易，造价低，对于老厂改造只要稍作改动，就能满足设计要求，对支承结构进行维修，更换非常容易，我公司可生产 Al_2O_3 含量 $\leq 75\%$ ，宽度 $\geq 40mm$ ，高度 $\leq 260mm$ ，长度 $\leq 2000mm$ 的各种条梁，也可根据用户要求，生产宽度和长度 $\leq 220mm$ 的各种规格格栅。

The structure is composed of beams and gratings, its main features are: more than 58% general opening rate, can adapt to 1.5-2m/s high velocity, easy production, low cost, just make a minor amendment for transformation of old plant will meet the design requirements, easy maintenance and replacement. Our company can produce various beam as Al_2O_3 content $\leq 75\%$, width $\geq 40mm$, height $\leq 260mm$, length $\leq 2000mm$, also can produce various specifications grille as width and the length = 220mm based on user's requirements.



化工填料 Chemical Packing

化工填料指的是安装于吸收、解吸、蒸馏、干燥、汽提、萃取、化学交换、洗涤和热交换等传质传热操作设备（又称填料塔或器），能在化工生产中起到为气液两相提供充分的接触面，为提高其湍动程度创造条件并利于传质的元件。化工填料属于惰性固体物料，是重要的传质传热介质，兼具过滤、改善流体分布等功能。

化工填料按照材质分有陶瓷塔填料、塑料塔填料、金属塔填料3类，依据装填方式的不同可分为散装填料和规整填料。

Chemical packing refers to the installed in absorption, desorption, steam room, drying, extraction, chemical exchange, washing and heat exchange mass heat transfer operation equipment (also known as packing tower or device), in the chemical production for gas liquid phase provide sufficient contact surface, to improve the degree of turbulence to create conditions and conducive to mass transfer components. Chemical filler is an inert solid material, which is an important mass transfer and heat transfer medium, with the functions of filtration and improvement of fluid distribution. Chemical packing has three types according to its materials: ceramic tower packing, plastic tower packing and metal tower packing, which can be divided into bulk packing and regular packing, according to the different packing methods.



CHEMICAL PACKING

陶瓷填料 Ceramic Packing

● 鲍尔环 Pal Ring



陶瓷鲍尔环填料是一种高径相等的开孔环型填料，形状为表面均布开有带内弯片窗孔的圆筒体，是对拉西环的改良，在拉西环的侧壁上开出两排长方形的窗孔（直径 < 38mm的鲍尔环开单层3个窗孔，直径 > 50mm的鲍尔环依高度上下开双层6个交错排布的窗孔），被切开的环壁的一侧仍与壁面相连，另一侧向环内弯曲，构成内伸的舌叶，每层窗孔有5个舌叶，每个舌叶内弯指向环心，上下两层窗孔的位置相反错开，一般开孔面积约占环壁总面积的30%左右。鲍尔环结构改善了环内空间及环内外表的应用率，有助于环的内外充分相通，提高了汽液分布。

Ceramic Bauer ring packing is a high diameter equal open ring packing. The shape is a cylinder with inner curved window holes, is an improvement of the Lassie ring. Open two rows of rectangular window holes on the side wall of the ring (3 single layer bower ring window holes with a diameter of 50mm diameter up and down double 6 staggered window holes). One side of the cut ring wall still connected to the wall, The other side bends the ring, Conup the extended lobe of the tongue, There are 5 lingual leaves in each window hole, The inner bend of each lingual lobe points to the center of the ring, The window holes of the upper and lower layers are located in opposite staggered positions, The general opening area accounts for about 30% of the total area of the ring wall. The Bauer ring structure improves the application rate of the inner space and the inner exterior, which helps to fully connect the inner and outer ring, and improves the steam and liquid distribution.

拉西环 Raschig Ring



拉西环填料是工业填料的开启，于1914年由拉西(F. Rashching)创造，因而以其名字命名，属散堆填料，形状简单呈圆筒状，是外径与高度相等的圆环。大尺寸的拉西环（100mm以上）一般采用整砌方式填充，80mm尺寸以下的拉西环一般采用乱堆方式装填。

Raschig ring packing is the opening of industrial packing, created by Raschig (F. Rashching) in 1914, so it is named after it. It is a bulk packing, simple and cylindrical in shape, and is a ring of equal to outer diameter and height. Large size Raschig ring (more than 100mm) – the whole masonry filling, 80mm size below the ring – the stacking filling.

● 矩鞍环 Intalox Saddle Ring



矩鞍形填料的外形为通过中间带有一道环筋的双曲线圆筒体作其轴向对切的一半，又称矩鞍环，规格尺寸按颈部外环直径确定。

陶瓷矩鞍形填料属于陶瓷塔填料，堆积时不会套叠，液体散布较平均，具有通量大、阻力小、液体分布均匀、分离效率高及操作弹性大等优点，还具备优异的耐酸耐热性能，能耐除氟酸以外的各种无机酸、有机酸及有机溶剂腐蚀，并能耐高温，抗老化，适合在各种高温、低温场合使用。

The shape of the rectangular saddle packing is the axial cutting half of the hyperbolic cylinder with a ring bar in the middle, also known as the rectangular saddle ring. The size is determined according to the diameter of the outer ring of the neck.

Ceramic moment saddle packing belongs to the ceramic tower packing, accumulation will not stack, liquid spread is average, has large flux, small resistance, liquid distribution, high separation efficiency and elastic advantages, also has excellent acid heat resistance, resistance besides fluorine acid, organic acid and organic solvent corrosion, and can be high temperature resistance, aging, suitable for use in all kinds of high temperature, low temperature occasions.

十字隔板环 Corss Partition Ring



十字隔板环填料是在拉西环基础上为增加填料的比表面积，达到强化传质效率目的，在拉西环中间增设十字隔板的填料。十字隔板环由于尺寸较大，仅适用于整体堆砌装填，常作为乱堆填料的塔底支撑分布层使用。

The cross partition ring packing is to increase the material of the specific surface area of the filler to achieve the purpose of strengthening the mass transfer efficiency in the middle of the cross partition ring. The cross partition ring is large in size, which is only suitable for overall stacking and filling, and is often used as the supporting distribution layer of the bottom of the tower.

陶瓷填料 Ceramic Packing



异鞍环

SuperIntalox Saddle Ring

异鞍形填料的外形为中部带有两道环筋，中间有开孔，外沿为锯齿形的双曲线圆筒体作其轴向对切的一半，又称异鞍环，规格尺寸按颈部外环直径确定。异鞍形填料是在矩鞍环填料的基础上加以改进的新型填料，将矩鞍填料的平滑弧形侧面改为锯齿形或纹纹凸起的侧面，使得在填料床层内增加了填料间接触的空隙，使之更有利于气体和液体在填料层中的流动和扩散。

陶瓷异鞍形填料属于陶瓷塔填料，堆积时不会套叠，液体散布较平均，具有通量大、阻力小、液体分布均匀、分离效率高及操作弹性大等优点，还具备优异的耐酸耐热性能，能耐除氟酸以外的各种无机酸、有机酸及有机溶剂腐蚀，并能耐高温、抗老化，适合在各种高温、低温场合使用，是代替拉西环使用的填料之一。

The shape of the different saddle-shaped packing is central with two ring bars and holes in the middle, and the zigzag hyperbola cylinder is cut into half, also known as the different saddle ring. The size is determined according to the diameter of the outer ring of the neck. The different saddle packing is a new type of filler improved on the basis of the moment saddle ring packing. The smooth arc side of the moment saddle packing is changed to a serrated or raised side, which increases the gap between the packing bed layer, which is more conducive to the flow and diffusion of gas and liquid in the packing layer.

Ceramic different saddle filler belongs to the ceramic tower packing, accumulation will not stack, liquid spread is average, has large flux, small resistance, liquid distribution, high separation efficiency and elastic advantages, also has excellent acid heat resistance, acid resistance to inorganic acid, organic acid and organic solvent corrosion, and can be high temperature resistance, anti-aging, suitable for use in all kinds of high temperature, low temperature, is one of the use of packing.

三丫环

Y-shaped ring

陶瓷三丫环是一种经外观独特设计加工成的一种新型高效散堆填料，产品高径比约为2:1，内部设有一个或三个“Y”型隔板，这样增大比表面积，提高汽液分散性能，使汽液接触更充分。陶瓷三丫环适用于各种高、低温及强腐蚀性的场合，可用于化工、冶金、煤气、制氧等行业的干燥塔，吸收塔，冷却塔，洗涤塔，再生塔等。

Ceramic Y-shaped ring is a new type of high-efficiency bulk filler designed and processed with a unique appearance. The product has a height to diameter ratio of about 2:1 and is equipped with one or three "Y" shaped partitions inside, which increases the specific surface area, improves the vapor liquid dispersion performance, and makes the vapor liquid contact more sufficient. Ceramic triple ring is suitable for various high, low temperature, and highly corrosive occasions, and can be used in drying towers, absorption towers, cooling towers, washing towers, regeneration towers, etc. in industries such as chemical, metallurgical, gas, and oxygen production.



阶梯环

Cascade Ring

阶梯环填料的外形为表面开有若干窗口，内有米字筋的圆筒体，并在圆筒的一端增加一个喇叭形扩大口；规格尺寸按环外径确定，其高径比指环总高与喇叭口外径之比，为1:2。由于高径比缩小，填料重心下移，随机堆放时，填料纵向取向几率增大，可使填料层填料密度均匀，气体分布合理，处理量增加，有利于传质。

陶瓷阶梯环填料属于陶瓷塔填料，它改变了填料的环高与直径相等的习惯，降低了环的高度，减薄了材质的厚度，并在环的侧端增加了翻边。增加的翻边使得填料环的机械强度增大，并破坏了填料结构的对称性，从而增加了填料投放时的定向几率；在堆积时翻边还使得填料环隙之间的接触由线性接触为主转变为以点接触为主，增加了填料之间的空隙，减少了气体穿过填料层的阻力，而且这些接触点还可以成为液体沿填料表面流动的汇聚分散点，从而促进了液膜的表面更新，有利于填料传质效率的提高；在低阻力运行领域可以取代鲍尔环。

The shape of the step ring packing has several windows on the surface, and adds a bell expansion mouth at one end of the cylinder; the high diameter ratio of the total height of the ring to the outer diameter of the horn is 1:2. Due to the reduction of high diameter ratio, the center of gravity of the packing is moved down, and the longitudinal orientation probability of the packing is increased, which can make the packing layer uniform density, reasonable gas distribution, and increase the processing capacity, which is conducive to mass transfer.

The ceramic step ring packing is a thousand ceramic tower packing, which changes the habit of the ring height and diameter of the packing, reduces the height of the ring, reduces the thickness of the material, and increases the edge at the side end of the ring. The increased turning increases the mechanical strength of the packing ring and destroys the symmetry of the packing structure, thus increasing the orientation of the contact between the packing ring along the surface of the packing to promote the surface renewal of the liquid film to improve the mass transfer efficiency of the packing and replace the Ball ring in the field of low-resistance operation.

一字环

Straight line Ring

陶瓷一字环填料又称陶瓷勒辛环填料，是基于增加填料的比表面以强化传质效率的想法之，上而开发出来的，是在拉西环中增设了一字隔板。一般来讲，尺寸较大的陶瓷一字环填料，仅适用于整齐堆砌，目前一般只作为乱堆填料的塔底支撑分布层用。<1>80-200mm规格的陶瓷一字环填料可作支承材料，空隙率大于60%，个数为整聚数。

Ceramic one-word ring packing, also known as ceramic Lecine ring packing, is developed based on the idea of increasing the specific surface of the packing to enhance the quality transfer efficiency. It is a word partit on added to the Laxi ring. Generally speaking, the large ceramic one-wording filler is only suitable for neat stacking, and is



陶瓷填料 Ceramic Packing

车轮环

Wheel Ring

车轮环系吸取多种惯用产品（鲍尔环、异鞍环、阶梯环等）的优点经多次实验研制的新型填料，它是由多条均匀排列的曲径及两圆筒构成的一个整体，在外圆筒上大开孔，两圆筒上下底开缺。

The wheel ring absorbs the advantages of a variety of conventional products (Bauer ring, different saddle ring, step ring, etc.) of the new packing developed by many experiments, it is composed of a number of evenly arranged winding diameter and two cylinders, the outer cylinder on the large hole, two cylinder up and down the bottom open.

陶瓷波纹填料

Ceramic Corrugated Packing

陶瓷波纹填料是由若干陶瓷波纹板片，按塔的直径要求垂直叠合组装成盘状的规整填料，分X型和Y型2种。波纹的齿形角P约为 $79^{\circ}\sim 80^{\circ}$ ，波纹通道与塔中心轴方向的倾角成 45° 为Y型， 30° 为X型。组装时同一盘内相邻波纹板片的波纹倾斜方向相反靠叠，上下相邻填料盘的波纹片成 90° 交叉排列。陶瓷波纹填料具有耐酸、耐碱特点，广泛应用于石油、化工、医药、冶金、印染等生产过程的反应器、吸收塔。陶瓷波纹填料与散堆填料相比，具有以下优异的性能：流通量大，新塔设计可缩小直径，老塔改造可大幅度增加处理量；分离效率高，较散堆填料有大得多的比表面积；压降低可节约大量能源；操作弹性大，持液量小，放大效应不明显；适用于对阻力降和理论板数有严格要求的腐蚀性混合物的精准分离，真空至加压体系的操作均可使用。

Ceramic corrugated packing is composed of a number of ceramic corrugated plate, according to the diameter of the tower, divided into X and Y types. The corrugated tooth Angle P is about $79\sim 80$, and the inclination between the corrugated channel and the central axis of the tower is 45 is Y and 30 is X. During assembly, the corrugated slopes of the adjacent corrugated plates in the same plate are stacked in opposite directions, and the corrugated sheets of the upper and lower adjacent packing plates are arranged in good cross. Ceramic corrugated packing has the characteristics of acid resistance, alkali resistance, widely used in the thousand petroleum, chemical industry, medicine, metallurgy, printing and dyeing and other production process of the reactor, absorption tower.

轻瓷组合填料

Light Porcelain Combination Filler

轻瓷组合填料是我厂根据用户要求开发的一种新型高效填料，现广泛应用于焦化脱硫、甲醇、洗苯、洗萘、洗氨塔、化肥热水饱和塔。该系列填料具有比表面积大、空隙率高、传质系数大、抗堵塞、抗腐蚀、耐急冷急热、使用寿命长、易安装等优点，是一种理想的塔填料。

Light porcelain composite filler is a new type of efficient filler developed by our factory according to user requirements. It is widely used in coking desulfurization, methanol, benzene washing, CAI washing, ammonia washing tower and hot water saturation tower of chemical fertilizer. This series of fillers has the advantages of large specific surface area, high void ratio, large gap ratio, large mass transfer coefficient, corrosion resistance, corrosion resistance, long service life, easy installation and so on, which is an ideal tower filler.

全瓷组合填料

Full Porcelain Combination Filler

全瓷组合填料是一种新型高效填料。克服了以往木格填料易腐蚀、散装填料安装麻烦、轻瓷填料（采用石英砂等原料低温烧结而成）吸水率大引起的吸水后重量过高及抗压强度差等弊端。该产品是当前煤气、化工、化肥等行业洗氨塔内中较为理想的填料，安装在塔内上、下层之间，由其身的支承脚隔开，使气流均布，克服了散堆填料所造成的毛病，大大减少了阻力，在传质过程中，填料表面始终保持一层液膜，形成良好的气液接触。

All-porcelain composite filler is a new type of efficient filler developed by our factory. It overcomes the disadvantages of easy corrosion, troublesome installation of bulk filler, and high weight after water absorption and poor compressive strength. The product is the current gas, chemical, chemical fertilizer and other industries in the ideal packing, installed in the tower, between the lower, by the air cloth, overcome the problems caused by the bulk packing, greatly reduce the resistance, in the process of mass, the packing surface always keep a layer of liquid film, form a good air-liquid contact.

塑料塔填料 Plastic Packing

塑料塔填料系指以塑料原料（聚乙烯PP、聚丙烯PE、增强聚丙烯RPP、聚氯乙烯PVC、氯化聚氯乙烯CPVC、聚偏氯乙烯PVDF等）为主材，经注射、挤压、压制、吹塑等成型方法制成的各种专门设计的环形、鞍形、球形、板形及其组合形状的塑料件；用于塔内提供相接触的表面积，以促进液体与液体之间、气体与液体之间及气体与气体之间的能量传递、质量传递或化学反应。塑料塔填料常安装于吸收、解吸、萃取、除尘等填料塔装置中，广泛应用于石油、化工、氯碱、煤气、环保等行业。塑料塔填料分为塑料散堆填料（多面空心球、花环、海尔环、阶梯环、鲍尔环、矩鞍环、异鞍环、共轭环、扁环、拉西环、雪花环、六棱形环、旋转环、五角环、锥形环、网环、十字球形环、浮球、液面覆盖球、菱形覆盖球等）和塑料规整填料。

辉宏品牌主要有塑料阶梯环、塑料花环、车轮环、矩鞍环、共扼环、海尔环、扁环、多面空心球、空心浮球等散装填料，其余几何形状的散装填料、规整填料（格栅等）可按客户要求定做。

Plastic tower packing refers to various plastic parts specially designed for ring, saddle, spherical, plate, and composite materials (Injection, extrusion, pressing, and blowing molding, etc.) to provide the surface area of contact in the tower to promote energy transfer, mass transfer or chemical reaction between liquid and liquid and between gas and gas.

Plastic tower filler is often installed in absorption, desorption, extraction, dust removal and other packing tower loading tank, widely used in petroleum, chemical, chlor-alkali, gas, environmental protection and other industries. Plastic tower packing is divided into plastic bulk packing (hollow ball, wreath, haier ring, ladderring, bauer ring, saddle ring, ring, ring, flat ring, ring west ring, Snow ring, six prism ring, rotating ring, pentring, conical ring, net ring, cross spherical ring, floating ball, liquid surface covering ball, diamond cover ball, etc.) and plastic neat packing.

Huihong brand mainly includes plastic step ring, plastic wreath, wheel ring, moment saddle ring, common ring, Haier ring, flat ring, multi-sided hollow ball, hollow floating ball and other bulk packing, the rest of the geometric shape of bulk packing, regular packing (grille, etc.) can be customized according to customer requirements.



花环
Rosette Ring

塑料花环填料的外形为两个大小不同的平面圆环间有若干个直立的等径小圆环环绕相连的构件。等径小圆环个数在5-20范围（规格越大，小圆环越多），按径向排列而组成的一个大扁环体，类似于一个螺旋形弹簧首尾相绕的圆球体；由美国的A.J.Teller于1954年研制开发出来，故又称为泰勒花环填料(Teller Rosette)；由于填料的空隙处能有较高的持液量，可使塔内液体的停留时间较长，从而增加了气液两相的接触时间，提高了填料的传质效率，塑料花环填料属于塑料塔填料，材质有聚丙烯PP、增强聚丙烯RPP、聚偏氯乙烯PVDF、聚氯乙烯PVC等，常用材质为聚丙烯PP。聚丙烯泰勒花环填料具有空隙率大，不易被堵塞，压降和传质单元高度低，泛点高，汽液接触充分，比重小，通量大，传质效率高等特点；材料耐化学腐蚀性能优良，机械性能、耐蠕变性和尺寸稳定性高，产品耐温达127℃，热变形温度达160℃，具有强度高、耐化学腐蚀、电绝缘性好、耐冲击、耐韧性等特点。

The shape of the plastic wreath filler is between two flat rings of different sizes with several upright small equal diameter rings around the connected components. The number of small rings is in the range of 5 to 20 (the larger the size, the more small rings), a large flat ring, similar to a circular sphere around the head and tail of a spiral spring; developed by A.J.Teller in 1954, so it is also called Taylor wreath packing (Teller Rosette); Due to the high amount of liquid holding in the gap of the packing, the residence time of the liquid in the tower can be longer, thus increasing the contact time of the gas-liquid phases and improving the mass transfer efficiency of the packing. Plastic wreath packing belongs to the plastic tower packing, the material has polypropylene PP, enhanced polypropylene RPP, poly partial atmosphere ethylene PVDF, polyvinyl chloride PVC, etc., common materials for polypropylene PP. Polypropylene Taylor wreath packing has large gap rate, not easy to be blocked, low height, high pressure drop and mass transfer unit, sufficient vapor contact, small proportion, high throughput, high mass transfer efficiency, excellent chemical corrosion resistance, mechanical properties, creep resistance and dimensional stability, temperature resistance, thermal deformation temperature of 160 houses, high strength, chemical corrosion resistance, impact resistance, toughness resistance and other characteristics.

车轮环
Wheel Ring



车轮环外形与鲍尔环相似，但环壁的开口方式不同。它伸向环内的肋片，使窗口形成的两个方向相反的开口锥体，由于锥体导液流与气流在环内聚集和分散，产生强烈地扰动。因此，该环具有传质效率高液体分布性好的优点，特别在相当大的气速范围内分离效率仍能保持恒定。本填料表面经特殊处理，具有润湿性好，气液接触更充分等优点。

The wheel ring shape is similar to the Ball ring, but the opening of the ring wall is different. It extends to the ribs inside the ring, allowing the window to form two open cones in opposite directions, which are strongly disturbed as the cone guide flow accumulates and disperse within the ring. Therefore, this ring has the advantage of high mass transfer efficiency and good liquid distribution, especially the separation efficiency remains constant in a considerable gas velocity fan circle.

塑料塔填料 Chemical Packing

● 阶梯环

Cascade Ring

阶梯环填料的外形为表面开有若干窗口，内有井字内筋的圆筒体，并在圆筒的一端增加一个喇叭形扩大口，规格尺寸按环外径确定，其高径比（环总高与喇叭口外径之比）为1:2。由于高径比缩小，填料重心下移，随机堆放时，填料纵向取向几率增大，可使填料层填料密度均匀，气体分布合理，处理量增加，有利于传质。

The shape of the step ring packing is several windows on the surface of the cylinder, and then a bell expansion mouth is added to one end of the cylinder. The size is determined according to the outer diameter of the ring, and the high diameter ratio (the total height of the ring to the outer diameter of the horn) is 1:2. Due to the reduction of high diameter ratio the center of gravity of the packing is moved down, and the longitudinal orientation probability of the packing is increased, which can make the packing layer uniform density, reasonable gas distribution, and increase the processing capacity, which is conducive to mass transfer.

● 共轭环

Conjugate Ring

聚丙烯共轭环由于其结构独特，在塔内装填时，填料间及其与塔壁间均为点接触，空隙均匀，具有流体阻力小（压降小），流量大的优点，流体通过填料层时，汽液接触良好，沟流和壁流趋势小，从而达到传质性能优良的效果。

Because of its unique structure, in the tower filling, the packing room and between the tower wall are point contact, uniform gap has the advantages of small fluid resistance (small pressure drop), large flow, fluid through the packing layer, the liquid contact is good, groove flow and wall flow trend is small, so as to achieve the effect of excellent mass transfer performance.

● 海尔环

Heilex Ring

聚丙烯海尔环的独特造型，使它不仅具有通量大，压降低，耐腐蚀及抗撞击性能好等优点以外，还具有填料间不会嵌套，壁流效应小和气液分布均匀等优点。这种填料适用于气体吸收、冷却及气体净化等过程。

The unique shape of polypropylene Haier ring makes it not only have the advantages of large flux, reduced pressure, corrosion resistance and impact resistance, but also has the advantages of no nesting between fillings, small wall flow effect and uniform air and liquid distribution. This filler is suitable for gas absorption, cooling and gas purification processes.

● 矩鞍环

Intalox Saddle Ring

聚丙烯矩鞍填料的平滑弧形侧面在填料床层内，增加了填料间接触的空隙，使之更有利于气体和液体在填料层中的流动和扩散，具有压降低，传质效率高等特点。

The smooth arc side of the polypropylene moment saddle is in the packing bed layer, which increases the contact gap between the packing, which is more conducive to the flow and diffusion of gas and liquid in the packing layer, and has the characteristics of reduced pressure reduction and high mass transfer efficiency.

● 扁环

Flat Ring

扁环具有空隙率大，压降和传质单元高度低，泛点高、气液接触充分、比重小、传质效率高等特点。广泛应用于石油、化工、氯碱、煤气、环保等行业的填料塔中。

Flat ring is characterized by large void rate, low pressure drop and mass transfer unit height, high general point, sufficient gas-liquid contact, small specific gravity, and high mass transfer efficiency. Widely used in petroleum, chemical, chlorine, gas, environmental protection and other industries in the packing tower.

塑料塔填料 Chemical Packing

多面空心球

Multifaceted Hollow Ball

聚丙烯多面空心球是由二个半球合成一个球形，每个半球由若干个半扇形叶片组成，由两个半球的扇形叶片又相互错开。这种填料的优点是比表面积较大，因此被较多地用于洗涤塔器以及电厂水处理脱CO₂设备中。

Polypropylene multifaceted hollow ball is composed of two hemispheres, each hemisphere is composed of several semi-sector blades, and the sector blades of the two hemispheres are staggered from each other. The advantage of this filler is that the specific surface area is larger, so it is more used in water and power plant water treatment CO₂ equipment.

空心浮球

Hollow Floating Ball

塑料空心浮球填料具有空隙率大、耐热、耐化学腐蚀、压降和传质单元高度低、泛点高、汽液接触充分、比重小、传质效率高等特点。在各种介质的使用温度为60-150摄氏度，广泛应用于石油、化工、氯碱、煤气、环保等行业的填料塔器中。

Plastic hollow floating ball packing has the characteristics of large void rate, heat resistance, chemical corrosion resistance, low pressure drop and mass transfer unit height, high general point, full vapor and liquid contact small specific gravity, and high mass transfer efficiency. In the use of a variety of media temperature is 60-150°C degrees, widely used in the oil, chemical, chlor-alkali, gas, environmental protection and other industries of the packing tower.

覆盖球

Covering Ball

液面覆盖球以聚丙烯PP为原料，经发泡、收缩生产的圆形塑料填料，分为带边液面覆盖球与不带边液面覆盖球两种型号，带边液面覆盖球具有重心稳定，边与边重叠，覆盖效果好等特点，其作用是抑制酸雾挥发，保护操作人员健康，减少大气污染和空气对水质的污染，有效提高凝结水质量，有利于发电机组、供热机组的安全运行。

The liquid surface covering ball is made of polypropylene PP as raw material, and is a circular plastic filler produced through foaming and shrinkage. It is divided into two types: the edge liquid surface covering ball and the non edge liquid surface covering ball. The edge liquid surface covering ball has the characteristics of stable center of gravity, overlapping edges, and good covering effect. Its function is to inhibit the evaporation of acid mist, protect the health of operators, reduce atmospheric pollution and air pollution on water quality, and effectively improve the quality of condensed water. It is beneficial for the safe operation of generator units and heating units.

规整波纹填料

Corrugated Packing

塑料规整填料有蜂窝斜管、斜板。主要特点是使沉淀池结构紧凑、占地少、耗药低、表面负荷率高、水处理净化好等特点，是目前优良的净水填料。该产品广泛用于城乡自来水、化工、矿山、造纸、油田等领域，目前我国在饮用水净化及水处理上均采用该产品。塑料蜂窝斜管材质主要有：聚丙烯、乙丙共聚、聚氯乙烯。其特点是优良的化学性能，稳定性能好，无毒、比重小，工作状况温度可在≤80℃，表面光滑，滑泥效果好等。

Plastic regular packing has honeycomb inclined pipe, inclined plate. The main characteristics of the sedimentation tank are its compact structure, less footprint, low drug consumption, high surface load rate, good water treatment and purification, and other characteristics, which is an excellent water purification filler at present. The product is widely used in urban and rural tap water, chemical industry, mining, paper making, oil field and other fields. At present, China in drinking water purification and water treatment are used in this product. Plastic honeycomb inclined pipe material is mainly: polypropylene, ethylene propylene copolymerization, polyvinylchloride. It is characterized by excellent chemical properties, good stability, non-toxic, small specific gravity, working condition temperature can be in 80°C, smooth surface, sliding mud effect is good.

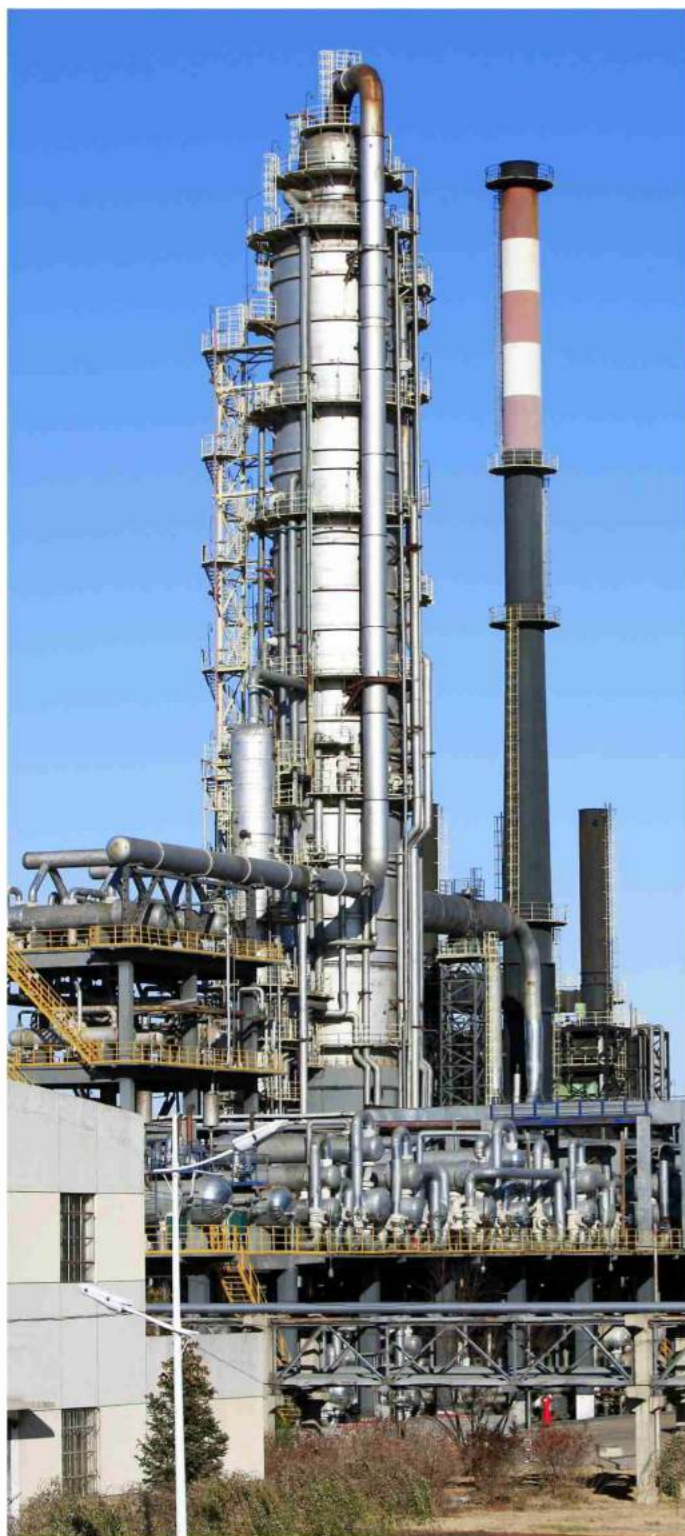
格栅

Grating

格栅是以条状单元体经一定规则组合而成的，具有多种结构形式。工业上应用最早的格栅填料为木格栅填料。目前应用较为普遍的有格里奇格栅填料、网孔格栅填料、蜂窝格栅填料等。格栅填料的比表面积较大，主要用于要求压降小、负荷大及防堵等场合。塑料格栅填料的特点，在易淤积的塔器中使用塑料格栅填料，可提高传质效率，降低运行阻力。塑料格栅填料是一种高效、低阻力、大通量的规整填料。

Grating is composed of strip unit body by certain rules, with a variety of structural forms. The earliest grille filler used in industry is wood grille filler. At present, the application of grrich grille packing, mesh grille packing, honeycomb grille packing and so on. The specific surface area of the grille filling is large, mainly used for small pressure drop, large load and blocking occasions. The characteristics of plastic grille packing, the use of plastic grille packing in the tower easy to deposit, can improve the mass transfer efficiency and reduce the operation resistance. Plastic grille packing is a regular packing material with high efficiency, low resistance and large throughput.

金属塔填料 Metal Tower Packing



金属塔填料系指以金属原料（一般为碳钢或不锈钢）为主材，经冲压、切割以及滚花、压纹、冲孔、焊接等工艺制成的各种专门设计的环形、鞍形、球形、板形、波纹形及其组合形状的金属件；用于塔内提供相接触的表面积，以促进液体与液体之间、气体与液体之间及气体与气体之间的能量传递、质量传递或化学反应。

金属塔填料分为金属散堆填料（拉西环、鲍尔环、矩鞍环、阶梯环、共扼环、扁环、八四内弧环等7种）和金属规整填料（孔板波纹填料、网孔板波纹填料、丝网波纹填料等3种）。

辉宏品牌生产金属散堆填料、金属孔板波纹填料、丝网除沫器，材质可依据客户要求选择在304、304L、316、316L、双相钢、钛材中选取，其余几何形状的散装填料以及规整填料可按客户要求定做。

The metal tower packing means the ring, saddle, spherical, plate, corrugated, and combined metal parts made of metal raw material (generally carbon steel or stainless steel), stamping, cutting, roller, punching, welding, specially designed to provide contact surface area in the tower, to promote energy transfer between liquid and liquid, between gas and gas and gas. Metal tower packing is divided into 7 kinds of metal packing west ring, west ring, Bauer ring, moment saddle ring, step ring, total chokering, flat ring, eight ring inner arc ring) and metal regular packing (hole plate corrugated packing, mesh plate corrugated packing, screen corrugated packing).

Huihong brand produces metal bulk packing, metal hole plate corrugated packing, wire mesh foam remover, material can be selected in 304, 304L, 316, 316L, double phase steel, qin material according to customer requirements, other geometric shape of bulk packing and regular packing can be customized according to customer requirements.



鲍尔环

Metal Pal Ring

金属鲍尔环填料是一种高径相等的开孔环型填料，形状为表面均布开有带内弯片窗孔的圆筒体，是对拉西环的改良，在圆筒体的侧壁开出上下两排长方形的窗孔（5个窗孔），每个窗孔均有内弯的窗叶，窗叶指向环心，各窗叶在环心交汇。鲍尔环结构改善了环内空间及环内外表的应用率，有助于环的内外充分相通，提高了汽液分布，充分利用了环的内表面，从而使得填料塔内的气体和液体能够从窗体自由通过，消除了流体的滞留状况。金属鲍尔环广泛应用于石化、化工、冶金、煤气、环保等行业的干燥塔、吸收塔、精馏塔、萃取塔、洗涤塔、冷却塔、再生塔、反应塔。

metal bauer ring packing is a kind of high diametere qual hole ring packing, shape for the surface are open with curved window cylinder, is the improvement of ring, in the side wall of the cylinder up and down two rows of rectangular window hole (five window hole), each window hole inside window, window pointing to the ring, the window in the ring. The Bauer ring structure improves the application rate of the inner space and the inner appearance of the ring, helps to fully connect the inside and outside of the thousand ring, improves the distribution of steam and liquid, and makes full use of the inner surface of the ring, so that the gas and liquid in the packing tower can be removed from the window Free passage, eliminating the retention of the fluid condition.

Metal Bauer ring is widely used in petrochemical chemical, metallurgy, gas environmental protection and other industries of drying tower, absorption tower, fine center tower, extraction tower, washing tower, cooling tower, regeneration tower and reaction tower.

拉西环

Metal Raschig Ring

金属拉西环填料是工业应用最久的典型的散堆型填料，其结构简单，制造方便，造价低廉，至今仍被广泛应用着。应用举例：甲醇精馏塔、辛醇和辛酮分离，还可用作催化剂支撑。

Metal Lax ring packing is the typical bulk packing with the longest industrial application. It has simple structure, easy to manufacture and low .cost, and is stil widely used today. Application example: methanol refined feed tower, octanol and octanone are separated, and can also be used as catalyst support.



金属塔填料 Metal Tower Packing

矩鞍环

Metal Intalox Saddle Ring

金属矩鞍环填料的形状介于环形与鞍形之间，因而兼有两者之优点，这种结构有利于液体分布和增加了气体通道，比鲍尔环阻力小、通量大、效率高。填料强度和刚性较好，是目前应用最广的一种散装填料。具有低压降、通量大、传质效率高、易操作等特点，广泛应用于蒸馏、气体吸收、再生及脱吸系统。

Metal Laxi ring packing is the typical bulk packing with the longest industrial application. It has simple structure, easy to manufacture and low cost, and is still widely used today. Application example: methanol refined feed tower, octanol and octanone are separated, and can also be used as catalyst support.

阶梯环

Metal Cascade Ring

金属阶梯环吸取了拉西环的优点并对鲍尔环改进，环的高径比为1:2，并在一端增加了锥形翻边，减少了气体通过床层的阻力，增大了通量，填料强度较高，其结构特点使得气液分布均匀，增加了气液接触面积而提高了传质效率。常应用于合成氨脱硫、脱碳系统，以及原油分离、常减压装置以及吸收及脱吸塔等。

Metal ladder ring absorb the advantages of west ring and improvement of Bauer ring, ring high diameter ratio of 1:2, and increase the cone edge, at one end reduces the gas through the bed resistance, increase the flux, packing strength is higher, the structure characteristics makes the air-liquid distribution is uniform, increase the air-liquid contact area and improve the mass transfer efficiency. It is often used in synthetic ammonia desulfurization, decarbonization system, as well as crude oil separation, atmospheric and vacuum device and absorption and desorption tower.

共轭环

Metal Conjugate Ring

金属共轭环填料揉合了环形和鞍形填料的优点，采用共轭曲线肋片结构，两端外卷边及合适的长径比。填料间或填料与塔壁间均为点接触，不会产生叠套，孔隙均匀，阻力小，乱堆时取定向排列，故有规整填料的特点并有较好的流体力学和传质性能。广泛应用于蒸馏、气体吸收及脱吸系统。

The metal co-ring filler combines the advantages of ring and saddle filler, with the outer winding edge and appropriate aspect ratio. The packing room or between the packing and the tower wall are point contact, will not produce overlapping sleeve, uniform pores, small resistance, disorderly heap take directional arrangement, so it has the characteristics of regular packing and good fluid mechanics and mass transfer performance. It is widely used in steaming center, gas absorption and desorption system.

扁环

Metal Flat Ring

金属扁环取消了阶梯环的翻边，采用内弯弧形筋片来提高填料强度，在乱堆时有序排列，流道结构合理，压降低，在处理能力和传质能上均有所改善。由于其壁薄、空隙率大，通量大，阻力小，分离效果好，特别适用于真空精馏塔，用于处理热敏性、易分解、易聚合、易结碳的物料。

The metal flat ring cancels the turning edge of the step ring, and the inner curved arc bar is used to improve the strength of the packing, which is arranged orderly the flow channel structure is reasonable, the pressure is reduced, and the processing capacity and mass transfer energy are improved. Because of its thin wall, large void ratio, large flux, small resistance, good separation effect, it is especially suitable for vacuum distillation tower, for the treatment of heat sensitivity, easy decomposition, easy polymerization, easy carbon materials.

金属塔填料 Metal Tower Packing

金属八四内弧环

Metal inner arc ring



金属八四内弧环填料有合理的几何对称性，构造均匀性好及高的空隙率，八弧圈与四弧圈顺轴向交替安排，各弧段沿径向环内折进，从而使填料表面连续而不断开，且在空间均匀分布与鲍尔环相比，通量可提高15-30%，压降减少20-30%。具有低压降、填料层气液分布好、抗污性好等特点。常用于气体吸收及酸性气体脱吸、洗涤以及化肥生产等实际场合。

The metal eight-four inner arc ring packing has reasonable geometric symmetry, good structural uniformity and high void ratio. The eight arc ring and the four arc ring are arranged alternately axially, and each arc section is folded along the radial ring, so that the packing surface is continuously and continuously. Compared with the Bauer ring, the flux can be increased by 15-30%, and the pressure drop can be reduced by 20-30%. It has the characteristics of low pressure drop, good gas and liquid distribution of packing layer, and good pollution resistance. Often used in gas absorption and acid gas desorption, washing and chemical fertilizer production and other practical occasions.

孔板波纹

Metal Plate Corrugated



金属孔板波纹填料是由金属钢带经滚花冲孔后压制成的若干波纹板片，按一定的直径要求垂直叠合组装成盘状的规整填料。波纹的齿形角约为79°-80°，波纹通道与垂直方向的倾角成45°为Y型，成30°为X型。相邻波纹板片的波纹倾斜方向相反，上下相邻填料盘的波纹片成90°交叉排列。金属孔板波纹填料在精馏、吸收、萃取等单元操作中广泛应用，主要安装于石化、化工、冶金、煤气、环保等行业的精馏塔、吸收塔、萃取塔、洗涤塔、干燥塔、冷却塔、再生塔、反应塔。

Metal hole plate corrugated packing is a number of corrugated plate made of metal steel strip pressed through blank punching, assembled into a disc according to a certain diameter requirements. The tooth angle of corrugated is about 79°-80°, and the inclination of corrugated channel and vertical direction is 45° Y and 30° X. The corrugated sheets of the adjacent corrugated sheets tilt in opposite directions, and the corrugated sheets of the upper and lower adjacent packing plates are arranged in 90° crosses.

Metal hole plate corrugated packing is widely used in the operation of distillation, absorption, extraction and other units, mainly installed in petrochemical, chemical, metallurgy, gas, environmental protection and other industries, absorption tower, extraction tower, washing tower, drying tower, cooling tower, regeneration tower and reaction tower.

吸附剂 Adsorbent

分子筛

Molecular Sieve



分子筛是一种微孔型具有立方晶格的硅铝酸盐的多水化合物，拥有大量微孔，微孔孔径分布单一、均匀，流体中分子直径大于微孔尺寸的组分都不能进入微孔，吸附发生在孔穴内部，能把直径小于孔穴尺寸的分子吸入孔内，把直径大于微孔尺寸的分子挡在孔外，实现选择性吸附起到筛分的功能，故称为分子筛。江西省萍乡市湘东石油化工填料厂生产的分子筛主要分为3A、4A、5A、13X等4种系列产品，

Molecular sieve is a kind of microporous type with cubic lattice of silica aluminate water compounds, has a large number of micropores, micropore aperture distribution is single, uniform, fluid diameter of components can not enter the microhole, adsorption occurs inside the hole, can the small diameter of the hole size, the diameter of the hole, realize the function of selective adsorption to sieve, it is called molecular sieve. The molecular sieve produced by Xiangdong Petrochemical Filler Plant of Pingxiang City, Jiangxi Province is mainly divided into four series of products, including 3A, 4A, 5A and 13X.

3A 分子筛

3A Molecular Sieve

3A分子筛是一种经过钾离子交换工艺处理后形成的具有立方晶格和均匀孔径的硅铝酸钠钾。

其硅铝比 ($\text{SiO}_2/\text{Al}_2\text{O}_3$) 约为2;

有效孔径约为3Å;

化学式为: $n\text{K}_2\text{O} \cdot (1-n)\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 4.5\text{H}_2\text{O}$,

3A molecular sieve is a sodium potassium silicate with cubic lattice and uniform pore size formed after potassium ion exchange process. Its silicon-aluminum ratio ($\text{SiO}_2/\text{Al}_2\text{O}_3$) is about 2. The effective pore size is about 3Å. The chemical formula is $n\text{K}_2\text{O} \cdot (1-n)\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 4.5\text{H}_2\text{O}$.



吸附剂 Adsorbent

4A 分子筛

4A Molecular Sieve

4A分子筛是一种具有立方晶格和均匀孔径的硅铝酸钠。

其硅铝比 ($\text{SiO}_2/\text{Al}_2\text{O}_3$) 约为2;

有效孔径约为4Å;

化学式为: $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 4.5\text{H}_2\text{O}$ 。

The 4A molecular sieve is sodium siluminate with a cubic lattice and a uniform aperture.

Its silicon-aluminum ratio ($\text{SiO}_2/\text{Al}_2\text{O}_3$) is about 2.

The effective pore size is about 4Å.

The chemical formula is $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 4.5\text{H}_2\text{O}$.

5A 分子筛

5A Molecular Sieve

5A分子筛是一种经过钙离子交换工艺处理后形成的具有立方晶格和均匀孔径的硅铝酸钠钙,

其硅铝比 ($\text{SiO}_2/\text{Al}_2\text{O}_3$) 约为2;

有效孔径约为5Å;

化学式为: $0.75\text{CaO} \cdot 0.25\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 4.5\text{H}_2\text{O}$ 。

5A molecular sieve is a sodium calcium silicate aluminate with cubic lattice and uniform pore size formed after the calcium ion exchange process.

Its silicon-aluminum ratio ($\text{SiO}_2/\text{Al}_2\text{O}_3$) is about 2.

The effective pore size is about 5Å.

The chemical formula is $0.75\text{CaO} \cdot 0.25\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 4.5\text{H}_2\text{O}$.

防潮纸桶包装 (25kg/桶)

防潮铁桶包装 (250kg/桶)

防潮吨袋包装 (1000kg/包)



13X 分子筛

13X Molecular Sieve

13X分子筛是一种具有立方晶格和均匀孔径的硅铝酸钠, 晶体结构为X型, 又称为钠X型分子筛,

其硅铝比 ($\text{SiO}_2/\text{Al}_2\text{O}_3$) 范围为2.6~3.0;

有效孔径为: 9-10Å;

化学式为: $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot (2.8 \pm 0.2) \text{SiO}_2 \cdot (6-7) \text{H}_2\text{O}$ 。

The 13X molecular sieve is a kind of sodium silica aluminate with cubic lattice and uniform pore size. The crystal structure is X type, also known as sodium X type molecular sieve.

The ratio of silicon to aluminum ($\text{SiO}_2/\text{Al}_2\text{O}_3$) ranges from 2.6 to 3.0.

The effective pore size is 9-10Å.

The chemical formula is $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot (2.8 \pm 0.2) \text{SiO}_2 \cdot (6-7) \text{H}_2\text{O}$.

脱硫剂

Desulfurizer

脱硫剂是以13X分子筛进行改性研制成功的一种新型高效脱硫剂。该产品具有均一的孔径、极高的比表面积和极性吸附性能。

Desulfurizer is a new type of high efficiency desulfurizer modified with 13X molecular sieve. The product has a uniform pore size, extremely high specific surface area, and polar adsorption properties.

HH-脱硫剂的优点

Advantages of the HH-Desulfurizer

- 对 (H_2S 和硫醇) 等极性分子具有强烈的吸附作用, 哪怕在较高的温度、较大的空速下, 仍有较高的吸附容量, 且可反复再生使用, 克服了氧化锌等脱硫剂不能再生使用的缺点, 大大地降低了脱硫成本,

- 对水也有较高的吸附作用, 在脱硫的同时, 也能将工艺气中的水脱除掉, 是一种双功能的吸附剂。可广泛应用于芳构化、异构化等装置中对循环气体进行脱硫、脱水。

- To (H_2S and thiol) and other polar molecules have a strong adsorption, even at a high temperature, large air speed, still has a high adsorption capacity, and can be used repeatedly recycled, overcome the shortcomings of zinc oxide and other desulfurizers can not be recycled, greatly reduce the cost of desulfurization.

- It also has a high adsorption effect on water. While desulfurization, it can also remove the water in the process gas. It is a dual-function adsorbent. It can be widely used in aromatization, isomerization and other devices for desulfurization and dehydration of circulating gas.

吸附剂 Adsorbent



活性氧化铝

Activated Alumina

活性氧化铝，又称为活性氧化铝球，是一种具有高效吸附性、热稳定性和化学稳定性的材料。它是由铝酸盐或氢氧化铝为原料，在高温条件下制成的微小球形颗粒，其中孔隙率高达40%以上。活性氧化铝在环保、能源、化学工业等领域有着广泛的应用前景。

活性氧化铝具有较高的比表面积和孔隙率，表面上存在着大量的氧空位，具有较强的吸附性和催化性。同时，活性氧化铝还具有优异的耐高温性和化学稳定性，不易被水、酸、碱等化学物质侵蚀。因此，活性氧化铝在吸附、催化、分离等方面有着广泛的应用前景。

Activated alumina, also known as activated alumina balls, is a material with high adsorption efficiency, thermal stability, and chemical stability. It is a small spherical particle made from aluminate or aluminum hydroxide under high temperature conditions, with a porosity of over 40%. Activated alumina has broad application prospects in fields such as environmental protection, energy, and chemical industry.

Activated alumina has a high specific surface area and porosity, and there is a large amount of oxygen vacancies have strong adsorption and catalytic properties. At the same time, activated alumina also has excellent high-temperature resistance and chemical stability. Easily corroded by chemicals such as water, acid, and alkali. Therefore, activated alumina has a wide range of applications in adsorption, catalysis, separation, and other aspects. Using Foreground.

活性炭

Activated Carbon



活性炭是由煤质、木质或石油焦等含碳的原料经热解、活化加工制备而成，是具备特异性强吸附能力炭材料的统称。辉宏牌活性炭是江西省萍乡市湘东石油化工填料厂生产的品牌产品，共有环保行业领域煤质净水专用活性炭、石油化工行业领域气相用煤质活性炭、医药（针剂）专用活性炭、食品专用活性炭等系列。

Activated carbon is made of coal, wood or petroleum coke and other carbon-containing raw materials through pyrolysis and activation processing. It is a general term for carbon materials with specific and strong adsorption capacity. Huihong brand activated carbon is a brand product produced by Xiangdong Petrochemical Filler Plant in Pingxiang City Jiangxi Province. It has a series of activated carbon for coal water purification in environmental protection industry, coal activated carbon for gas phase in petrochemical industry, activated carbon for medicine (injection), activated carbon for food and so on.



备注：煤质净水专用活性炭见过滤材料

Note: Special activated carbon for coal based water purification can be found in the filter material



气相用煤质活性炭

Coal Activated Carbon

气相用煤质活性炭系选用优质煤为材质，以先进的工艺设备热解并采用水蒸汽物理活化法精制而成，具有很大的比表面积和发达的孔隙结构，外观为暗黑色柱状颗粒或不定型颗粒状，属于应用于气相吸附分离的功能材料。

气相用煤质活性炭分为脱硫用煤质活性炭、溶剂回收用煤质活性炭、空气净化用煤质活性炭3种产品。

gas phase coal activated carbon system selection of high quality coal as material, with advanced process equipment pyrolysis and using water steam physical activation method refined, has a large specific surface area and developed pore structure, the appearance of dark black columnar particles or unshaped particles, belongs to the application of the gas phase adsorption and separation of functional materials.

Huihong brand gas phase coal activated carbon is divided in to desulfurization coal activated carbon, solvent recovery coal activated carbon, air purification coal activated carbon 3 products.

医药专用活性炭

Pharmaceutical Specific Activated carbon

医药专用活性炭系以优质的天然木屑或其他天然木质材料为原料，采用先进设备和科学工艺，经物理法活化、漂洗等工序精制而成的黑色固体粉末，是具有发达孔结构、大比表面等性质且适用于各种注射药剂、维生素C及其他原料药生产起脱色精制、除味提纯、除去“热原”（pyrogen）等效用的功能材料。

medicine (injection) special activated carbon system with high quality natural wood or other natural wood materials as raw material, using advanced equipment and scientific technology, the physical activation, rinsing and other process refined black solid powder, is a developed hole structure, large than surface properties and suitable for thousands of all kinds of injection, vitamin C and other API production decolorization refining, except taste purification, remove "hot source" (pyrogen) utility of functional materials.

食品专用活性炭 Food Specific Activated Carbon

食品专用活性炭

Activated Carbon is used for food use

辉宏牌食品专用活性炭系以天然木屑、竹子、椰壳或果壳等植物材料为原料，采用先进设备和科学工艺，经物理法活化、漂洗等工序精制而成黑色固体粉末，是具有发达孔结构、大比表面等性质且适用于各种食品添加剂、食物原料生产起脱色精制、去味、除杂、提纯等效用的功能材料。

food special activated carbon with natural wood, bamboo, coconut shell or fruit shell plant materials as raw materials, using advanced equipment and scientific technology, the physical activation, rinsing process refined, and black solid powder, is a developed hole structure, large than surface properties and suitable for all kinds of food additives, food raw material production color refining, taste, except miscellaneous, purification utility of functional materials.

吸附剂 Adsorbent

硅胶

Silica Gel



硅胶是一种高活性吸附材料，属非晶态物质，其化学分子式为 $m\text{SiO}_2 \cdot n\text{H}_2\text{O}$ ；除强碱、氢氟酸外不与任何物质发生反应，不溶于水和任何溶剂，无苦无味，化学性质稳定。硅胶的化学组份和物理结构使其具有吸附性能高、热稳定性好、化学性质稳定、机械强度高特点。主要应用于气体干燥，气体吸收，液体脱水，色层分析等，也可用做催化剂。硅胶根据其孔径的大小依次分为：大孔硅胶、粗孔硅胶、B型（介孔）硅胶、A型（细孔）硅胶，

Silicone is a highly active adsorption material, an amorphous substance, its chemical molecular formula is $m\text{SiO}_2 \cdot n\text{H}_2\text{O}$; it does not react with any substance except for strong alkali and hydrofluoric acid, insoluble in water and any solvent, tasteless and stable chemical properties. The chemical composition and physical structure of silica gel make it have the characteristics of high adsorption performance, good thermal stability, stable chemical properties and high mechanical strength. Mainly used in gas drying, gas absorption, liquid dehydration, color layer analysis, etc, can also be used as a catalyst. According to the size of its aperture, silica gel is divided into large hole silica gel, coarse hole silica gel, type B (mesopore) silica gel, type A (fine pore) silica gel.

A型硅胶

Type B silicone

细孔硅胶又称A型硅胶，平均孔径2.0–3.0mm，细孔硅胶包括细孔球形硅胶和细孔块状硅胶，外观呈透明或半透明玻璃状。

Fine hole silica gel, also known as A type of silica gel, the average aperture of 2.0–3.0mm, fine holes spherical silica gel and fine hole block silica gel, the appearance is transparent or translucent glass

| | |
|-------------------------------|---|
| 比表面可达650–800m ² /g | The specific surface is upto 650–800m ² /g |
| 孔容0.35–0.45ml/g | ole volume of 0.35–0.45ml/g |
| 比热0.92kJ/kg·℃ | Specific heat was 0.92 kJ/kg℃ |

B型硅胶

Type A silicone

B型硅胶为乳白色透明或半透明球状或块状颗粒，B型胶孔结构介于粗孔、细孔硅胶之间。

Type B silica gel is milky transparent or translucent spherical or massive particles, and B type silica hole structure between thousand thick hole and fine hole silica gel

| | |
|------------------------------|--|
| 平均孔径为4.5–7.0mm | The mean pore size is calculated at 4.5–7.0mm |
| 孔容为0.60–0.65ml/g, | The hole volume is the 0.60–0.65ml/g |
| 比表面为450–650m ² /g | The specific surface is 450–650m ² /g |



催化剂 Catalytic Agent

催化剂种类繁多，按状态可分为液体催化剂和固体催化剂；按反应体系的相态分为均相催化剂和多相催化剂，均相催化剂有酸、碱、可溶性过渡金属化合物和过氧化物催化剂。多相催化剂有固体酸催化剂、有机碱催化剂、金属催化剂、金属氧化物催化剂、络合物催化剂、稀土催化剂、分子筛催化剂、生物催化剂、纳米催化剂等；按照反应类型又分为聚合、缩聚、酯化、缩醛化、加氢、脱氢、氧化、还原、烷基化、异构化等催化剂；按照作用大小还分为主催化剂和助催化剂，

There are many kinds of catalysts, which can be divided into liquid catalysts and solid catalysts by state; homogeneous catalysts and heterogeneous catalysts by the phase of the reaction system, including acid, alkali, soluble transition metal compounds and peroxide catalysts. Polyphase catalysts include solid acid catalyst, organic catalyst, metal catalyst, metal oxide catalyst, complex catalyst, rare earth catalyst, molecular sieve catalyst, biological catalyst, nano catalyst, etc; according to the reaction type, aggregation, condensation, condensation, shrinkage, hydrogenation, dehydrogenation, oxidation, reduction, reduction, base, isomerization and other catalysts and auxiliary catalyst according to their size.

臭氧氧化催化剂

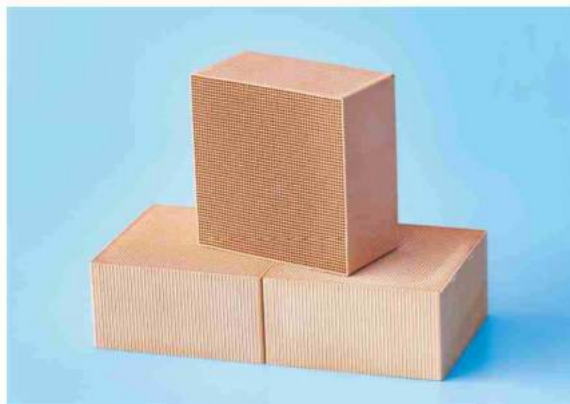
Ozone Oxidation Catalyst



臭氧氧化催化剂是以稀土改性活性氧化铝为载体，以过渡金属复合氧化物为活性组分的降解有机废水净化用臭氧氧化催化剂；具有降解能力强、臭氧消耗低、无二次污染、使用寿命长等技术特点。广泛应用于印染纺织、制药、煤化工、石油化工、农药、垃圾渗滤液、反渗透浓水等难降解水的深度处理，以及工业园区污水厂、市政污水厂的提标改造。通常在水处理中采取组合工艺连用达到提标排放效果，常用的组合工艺有：A/O+臭氧氧化、生物处理+MBR+臭氧氧化、臭氧氧化+BAF、臭氧氧化+CASS、臭氧氧化+BAC等。采用催化臭氧氧化，可加速分解水中的有机大分子物质，因此臭氧氧化可作为生化处理的预处理手段，脱除部分COD并提高BOD/COD比例，从而明显提高二级出水的可生化性；采用催化臭氧氧化，可以作为提标改造的三级水处理手段，经催化臭氧氧化深度处理，COD排放指标可达低于30mg/L以下；此外，采用催化臭氧氧化，还能使废水处理起到氨氮降解、消毒杀菌、除臭脱色的功效。

ozone oxidation catalyst is an ozone oxidation catalyst for organic wastewater purification with transition metal composite oxide as active component. It has strong degradation capacity, low ozone consumption no secondary pollution and long service life. It is widely used in printing and dyeing textile, pharmaceutical, coal chemical industry, petroleum chemical industry, pesticide, landfill leachate, reverse osmosis concentrated water and other refractory water depth treatment, as well as the upgrading of industrial district sewage plant, municipal sewage plant. Usually in water treatment, the combined process is adopted to achieve the effect of upgrading the emission. The common combined process is: A/O+ozone oxidation, biological treatment + MBR + ozone oxidation, ozone oxidation+BAF, ozone oxidation+CASS, ozone oxidation+BAC, etc. Catalytic ozone oxidation can accelerate the decomposition of organic macromolecular substances in water, so ozone oxidation can be used as a pretreatment method for biochemical treatment remove some COD and increase BOD/COD ratio, so as to significantly improve the biochemistry of secondary effluent; catalyzing ozone oxidation can be used as a tertiary water treatment means, after the catalytic ozone oxidation depth treatment, COD emission index can reach less than 30 mg/L; in addition, the wastewater treatment for ammonia nitrogen degradation sterilization, deodorization and discoloration.

催化剂 Catalytic Agent

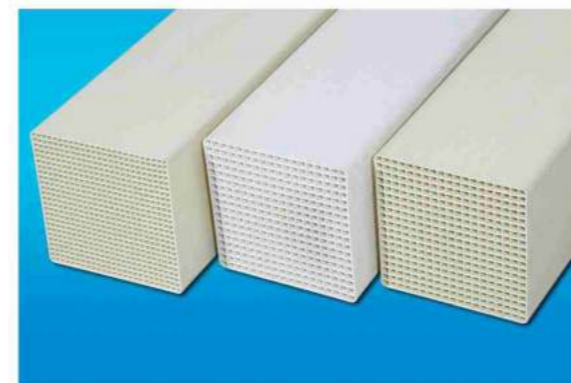


贵金属低温燃烧催化剂

Precious metal low-temperature combustion catalyst

贵金属低温燃烧催化剂以堇青石蜂窝陶瓷或者γ活性氧化铝为载体，采用独特的稀土助剂及贵金属PT配方；具有催化活性高、热稳定性好、使用寿命长、气流阻力小、机械强度优等技术特点。贵金属低温燃烧催化剂安装于VOCs低温催化燃烧装置(催化焚烧炉)使用，能有效净化丙烯腈、丙烯酸、顺丁橡胶等化工尾气使之达标排放，还适合用于铸造行业消失模有机废气环保治理，对彩钢、彩铝、漆包线、集装箱等彩涂印刷尾气的节能减排效果最佳，广泛应用于石油、化工、油漆涂覆、印刷、烤炉等行业的各类有机废气催化净化处理。

Platinum rare earth low temperature combustion catalyst with corundum honeycomb ceramic or γ activated alumina as the carrier, using unique rare earth additives and precious metal Pt formula; with high catalytic activity, good thermal stability, long service life, low airflow resistance and excellent mechanical strength, Lead gold rare earth low temperature combustion catalyst is installed in shoes low temperature catalytic combustion device (catalytic incinerator), which can effectively purify acrylic metal, acrylic acid, butadiene rubber and other chemical exhaust gas to meet the standard emission, but also suitable for the environmental treatment of organic waste gas, color steel color aluminum, enameled wire, Container and other color coating printing exhaust gas has the best energy saving and emission reduction effect, widely used in petroleum, chemical, paint coating printing, oven and other industries of various organic waste gas catalytic purification treatment.



SCR 脱硝催化剂

The SCR Denitration Catalyst

SCR 脱硝催化剂采用独特的稀土助剂及过渡金属配方制备；使用时以氨为还原剂选择还原消除NO_x，具有催化活性高、操作温区宽、使用寿命长等技术特点；兼具气流阻力小机械强度优的特性及启动快、脱硝效率高等特点。产品主要作为硝酸硝酸盐尾气高效脱硝使用，颗粒型及蜂窝型催化剂均适用于中压法、综合法及加压法硝酸系统的脱硝装置使用，还适用于硝酸盐行业及钢铁行业酸洗车间等氮氧化物的脱硝装置使用。蜂窝型脱硝催化剂也适用于窑炉烟气SC脱硝，广泛应用于钢铁、化工、建材、石油、火电等行业的窑炉烟气脱硝装置。



SCR denitration catalyst is prepared with unique rare earth additives and transition metal formula; using ammonia as reducing agent, NO_x is reduced by high catalytic activity, wide operating temperature zone, and long service life; small airflow resistance, excellent mechanical strength and fast start and high denitration efficiency.

The products are mainly used as nitrate nitrate exhaust efficient denitration, granular and honeycomb catalysts are suitable for medium pressure method, comprehensive method and pressure nitric acid system denitration device, but also suitable for thousand nitrate industry and steel industry pickling workshop and other nitrogen oxide denitration device.

Cellular denitration catalyst is also suitable for kiln flue gas SC surrounding denitrification, widely used in thousand iron and steel, chemical, sui material, petroleum, thermal power and other industries of furnace flue gas denitration device

DSA-1脱硫醇剂

DSA-1 Dethiol Agent

DSA-1脱硫醇剂是由中国石油大学(北京)研制，由江西省萍乡市湘东石油化工填料厂生产的用于新型液化石油气精制工艺的核心原材料。DSA-1脱硫醇剂是以有机胺类物质为原料，通过特殊的合成方法生产，产品可以有效催化脱除液化石油气中的硫醇，使液化石油气中的总硫降至10ppm以下。

DSA-1 dethanol is the core raw material for the new LPG refining process developed by China University of Petroleum (Beijing) and produced by Xiangdong Petrochemical Filler Plant in Pingxiang City, Jiangxi Province. DSA-1 dethiol agent is produced from organic amines as raw materials through special synthesis methods. The product can effectively catalyze the removal of thiols in liquefied petroleum gas, and reduce the total sulfur in liquefied petroleum gas to less than 10ppm.



催化剂 Catalytic Agent

液化气脱硫催化剂

The LPG Desulfurization Catalyst

石油炼制过程中、焦化、常减压、催化裂化等装置产生的液化石油气含有大量的硫化物，硫化物会造成后续加工过程中催化剂的中毒和失活，二元素硫和硫化氢对管路及储存容器腐蚀大，作为民用燃料时，会生成SOX污染环境，形成酸雨等。目前国内外对LPG作为燃料时，其总硫含量有所要求，如果作为化工原料，则要求更严。我国的液化气标准（GB1174.1997）规定，LPG中总硫质量分数小于343mg/m³，因此深度脱除LPG中的硫化物具有重要的经济和环保意义。现在国内外工业脱硫主要分干法脱硫、湿法脱硫以及分子筛脱硫等运用比较普遍，且工艺比较成熟。但是湿法脱硫催化剂成本相当高，同时使生产力受到一定影响，在生产过程退减时，易造成液化气跑损事故，造成生产的不安全性。由于使用了液体苛性碱又增加了环保压力。分子筛吸附法脱硫具有无需预碱洗，无污染，能在常温吸附等优点，但是需在300℃左右高温再生，因而增加了操作成本，且资金投入较大。因此分子筛用于LPG脱硫受到限制。

开发不使用固定床脱硫剂的无碱催化氧化脱臭工艺是未来LPG脱硫工艺的发展方向。为顺应工业的高速发展以及脱硫技术工艺的不断改进，我厂开发的液化气脱硫催化剂充分体现了无碱催化氧化在脱硫工艺中的运用。通过多方论证和实验，总硫质量分数小于我国的液化气标准（GB1174.1997）的规定值343mg/m³。

Petroleum refining process, coking, atmospheric, pressure, catalytic cracking produce liquefied petroleum gas contains a lot of sulfide, sulfide will cause subsequent processing catalyst poisoning and inactivation, two elements of sulfur and hydrogen sulfide corrosion of pipeline and storage containers, as a civil fuel, will generate SOX pollution environment, the formation of acid rain, etc. At present, the total sulfur content of LPG is required as a fuel at home and abroad. If it is used as a chemical raw material, it is even stricter. China's liquefied gas standard (GB1174.1997) stipulates that the total sulfur mass fraction in LPG is less than 343mg/m³, So the deep removal of sulfide in LPG has important economic and environmental significance.

At present, domestic and foreign industrial desulfurization is mainly divided into dry desulfurization, wet stripping and molecular sieve desulfurization is relatively common, and the process is relatively mature. However, the cost of wet desulfurization catalyst is quite high, and the productivity is affected to a certain extent. In the production process, it is easy to cause the accident of running loss of liquefied gas, resulting in the insecurity of production. Due to the use of liquid caustic alkali increases the environmental pressure.

Molecular sieve adsorption desulfurization has the advantages of no pre-alkali washing, no pollution, and adsorption at room temperature, but it needs to be regenerated at about 300℃ at high temperature thus increasing the operating cost, and the capital investment is large. Therefore, the desulfurization of thousand LPG for molecular sieve is limited.



脱铁催化剂

Deferrite Catalyst

脱铁催化剂由氧化铝和少量助剂，经高温发泡成型制作而成，产品具有大孔径、高孔容、强度大、耐磨损、堆比重小和适宜的比表面积，以及孔洞多且为海绵状的蜂窝孔等特点，在加氢裂化、加氢精制反应器内的顶部和底部装填脱铁催化剂，可把原料油中的环烷酸铁加氢转化为硫化铁，再将硫化铁吸附在催化剂孔道中，其吸铁量可达催化剂自重的20-25%，同时还具有一定的脱硫性能，避免了催化剂顶部床层硫化铁产生板结，造成装置压力大，而撇头处理，使装置能长周期运转。

Iron removal catalyst made of alumina and small amounts of auxiliaries, Made by high-temperature foam forming, The product has large aperture, high pore capacity, large strength, wear resistance, small specific gravity and suitable specific surface area, And many holes and sponge honeycomb holes, Facking the iron catalyst at the top and bottom of the derefining reactor, The cyclic acid iron in the raw oil can be converted into iron sulfide, Then adsorbed iron sulfide into the catalyst pore, Its iron absorption amount can reach 20-25% of the dead weight of the catalyst, At the same time, it also has a certain desulfurization performance, Avoid the hardening of iron sulfide from the top bed of the catalyst, Causing high device pressure, While head treatment, Enable the device to operate for a long period of time.



加氢保护剂

Hydrogenation Protector

加氢保护剂以Al₂O₃为载体，附载一定的活性组份制备而成，它具有：

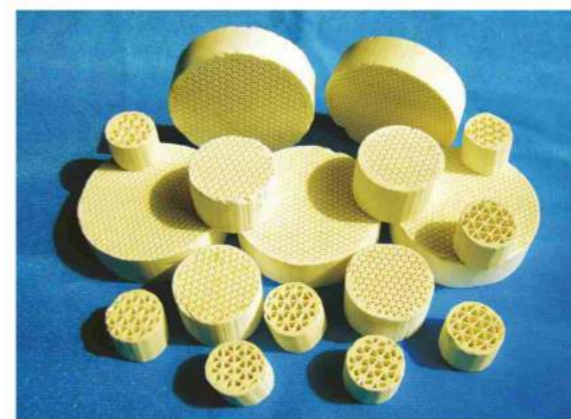
- 堆积空隙率大、内扩散阻力小、有很高的容金属沉积能力；
- 适中的比表面积和大孔容、大孔径，具有高脱金属活性和适中的脱硫活性等特点。

系列加氢保护剂可有效地脱除油品中各种金属杂质及其它固体颗粒物，并使原料油中易结焦物质适度加氢以减缓主催化剂的中毒和结焦，避免各种金属及固体颗粒沉积在反应器顶部。

Hydrogenation protection agent is prepared with Al₂O₃ as the carrier and carrying certain active components, which has:

- Large accumulation void rate, small internal diffusion resistance, and high bulk metal deposition capacity;
- Moderate specific surface area and large pore capacity, large pore size, With high demetal activity and moderate desulfurization activity and other characteristics.

The series of hydrogenation protective agents can effectively remove various metal impurities and other solid particles in the oil, and moderate the coking substances in the raw oil to slow down the poisoning and coking of the main catalyst, and avoid the deposition of various metals and solid particles on the top of the reactor.



水处理材料 Water treatment materials

陶粒滤料

Ceramic Grain Filters

陶粒滤料是以优质黏土、粉煤灰等为主要生产原料，经配料、制粉、成球、蒸压养护（或高温烧制）、筛分等一系列工艺加工而成的粒状功能材料，主要应用于水处理领域的BAF等生物滤池（作为生物膜载体）以及过滤装置（作为过滤介质）。

Ceramsite filter material is high quality clay, fly ash as the main production raw materials, the ingredients, powder, ball, autoclaved curing (or high temperature firing), screening and a series of processing and granular functional materials, mainly used in the field of water treatment BAF biological filter (as a biofilm carrier) and filter (as a filter medium)

稀土瓷砂

Rare Earth Ceramic Sand

稀土瓷砂是以优质稀土、高岭土为原料，掺合一定量的成孔剂、粘结剂，经过炼泥、成型、干燥、烧成等一系列工艺加工而成的粒状功能材料，主要应用于水处理领域的过滤装置作为过滤介质，还适用于离子交换、反渗透处理装置的预处理滤料或作为树脂、活性炭的承托层。

Rare earth porcelain sand is high quality rare earth, kaolin as raw material, with a certain amount of pore agent, binder, after mud, molding, drying, burning and a series of granular functional materials, mainly used in the field of water treatment filter device as a filter medium, also suitable for thousand ion exchange, reverse osmosis treatment device pretreatment filter material or as the bearing layer of resin, activated carbon.



煤质净水专用活性炭

Coal Specific Activated Carbon For Water Purification

煤质净水专用活性炭有HH-J-1.5、HH-J-3.0、HH-J-3.5等3种型号，HH-J-1.5主要应用于废水净化处理，HH-J-3.0主要应用于工业水处理，HH-J-3.5主要应用于生活饮用水、纯净水和超纯水生产。

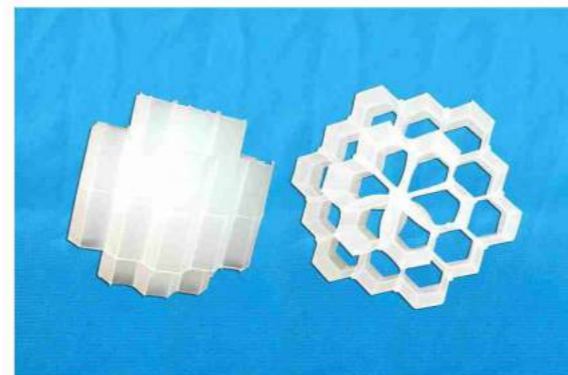
Special activated carbon for coal water purification is HH-J-1.5, HH-J-3.0 and HH-J-3.5. HH-J-1.5 is mainly used in wastewater purification treatment, HH-J-3.0 is mainly used in industrial water treatment, and HH-J-3.5 is mainly used in the production of drinking water, pure water and ultra-pure water.



新型高活性水处理用生物悬浮填料

New type of highly active biological suspended filler for water treatment

新型高活性水处理用生物悬浮填料安装于移动床生物膜反应器MBBR水处理装置，亦可安装于生物接触氧化池BCO装置，起到去除有机物和脱氮功效，广泛应用于工业污水（石油、印染、化工、医药、造纸、农药等行业）、市政污水、养殖污水处理，既适用于高浓度有机废水、垃圾渗滤液、肉类加工废水等高负荷污水处理，同时也适用于低浓度有机废水、生活污水、养殖污水等低负荷污水处理。适用于采用MBBR或采用BCO对水处理提标改造，如应用于A/O、A²/O、SBR以及氧化沟等传统活性污泥法工艺的提标改造，或采用增加前篮MBBR脱硝或后篮MBBR脱硝等强化工艺改造，改造工艺对污泥减量化与内循环、脱碳除氮、辅助除磷起到重要作用，改造工艺具备无需支架、易流化、剩余污泥产量低、节省能耗和占地面积、无需新增构筑物、缩短工艺流程、提升系统的功能和效率等特点。



water treatment with new high activity biological suspension filler installed in mobile bed biofilm reactor MBBR water treatment device, can also be installed in biological contact oxidation tank BCO device, to remove organic matter and nitrogen removal effect, widely used in industrial sewage (petroleum, printing and dyeing, chemical industry, pharmaceutical, paper, pesticide, municipal industries), municipal sewage treatment is suitable for high concentration of organic wastewater, landfill wastewater, meat processing wastewater and high load sewage treatment, but also suitable for low concentration of organic wastewater, sewage, aquaculture sewage, low load sewage treatment. Applicable for using MBBR or BCO water treatment DiBiao transformation, such as applied to A/O, A²/O, SBR and oxidation ditch and other traditional activated sludge process DiBiao transformation or increase front basket MBBR denitration or MBBR denitration, strengthening process transformation, transformation process of sludge reduction and internal circulation, decarbonization and nitrogen, auxiliary phosphorus removal, transformation process with no support, easy fluidized, low residual sludge yield, save energy consumption and footprint, no new structures, shorten the process, improve the function and efficiency of the system.

水处理滤料 Water treatment filter material

水处理用斜管填料 Inclined Tube Packing



塑料蜂窝斜管填料主要用于给排水工程中水口除砂、工业和生活用水沉淀、污水沉淀、隔油及尾矿浓缩处理，也可用于旧池改造，工艺特点是沉淀池结构紧凑、占地少、耗药低、表面负荷率高、水处理净化好等优势，是目前优良的净水填料。塑料蜂窝斜管材质主要有：聚丙烯、乙丙共聚、聚氯乙烯，产品具有优良的化学性能、稳定性能、无毒、比重小、表面光滑、滑泥效果好，以及具有工作状况温度可在 $\leq 80^{\circ}\text{C}$ 、湿周大、水力半径小、层流状态好、颗粒沉淀不受絮凝水流干扰等特点。

Plastic honeycomb inclined pipe filling mainly use thousands of water supply and drainage engineering water sand, industrial and living water precipitation, sewage precipitation, oil and tailings concentration treatment, and can also be used in the old pool, process characteristic is compact structure, covers an area of less, low drug consumption, high surface load rate, water treatment purification advantages, is currently excellent water packing. Plastic honeycomb inclined pipe material mainly include: polypropylene, ethylene propylene copolymerization, PVC, products have excellent chemical properties, stability, non-toxic, small proportion, smooth surface, mud effect is good, and has the working condition temperature in 80°C , wet circumference, small hydraulic radius, laminar state, particle precipitation is not disturbed by flocculation water.

冷却塔淋水填料 Cooling Tower Fills



冷却塔淋水填料在冷却塔中的作用就是增加换热面积、增加换热量、均匀布水，达到增加散热量、延长冷却水停留时间的目的。冷却塔就是使热流体（包括水）冷却到合理温度的一种设备，工业生产或制冷工艺过程中产生的废热，一般要用冷却水来带走；冷却塔的作用就是将挟带废热的冷却水在塔内与空气进行热交换，使废热传输给空气并散入大气中。冷却塔淋水填料主要有S波填料、斜交错填料、台阶式梯形斜波填料、差位式正弦波填料、点波填料、六角蜂窝填料、双向波填料、斜折波填料等规格。

The role of the cooling tower shower water filler in the cooling tower is to increase the heat transfer area, increase the heat exchange, and distribute the water evenly, so as to increase the heat dissipation amount and extend the residence time of the cooling water. Cooling tower is a kind of equipment to cooling heat fluid (including water) to a reasonable temperature. For waste heat produced in industrial production or cooling process, the cooling water is to exchange the heat between the cooling water and the air in the tower, so that the waste heat is transmitted to the air and scattered into the atmosphere. The cooling tower water filling mainly includes S-wave packing, oblique staggered packing, step type, trapezoidal oblique wave packing, differential sine wave packing, point wave packing, hexagonal honeycomb packing, bidirectional wave packing, oblique folded wave packing and so on.

塔内件系列 Towers Internals

塔内件和填料及塔体共同构成了一个完整的填料塔，塔内件是填料塔的组成部分。塔内件的作用是为了使气液在塔内有更好地接触，以便于发挥填料塔的最大生产能力和最大效率，所以说塔内件设计的好坏直接影响到整个填料塔的操作运行和填料性能的发挥。此外，填料塔的“放大效应”除了填料本身固有的因素之外，塔内件对它的影响也很大。

Tower internal and tower packing constitute a complete packing tower. Tower internal is one part of tower, and its function is in order to make a better contact in tower, so that could play packing tower's maximum production capacity and efficiency. So we said the design of the tower internal directly influence the whole tower's operation and packing's performance. Moreover, Packing tower's "amplification effect" in addition to packing itself's factors, tower internal has bigger impact.



径向侧喷射塔盘
Radial Jet Tray Side Guide



管式分布器
Tube Distributor



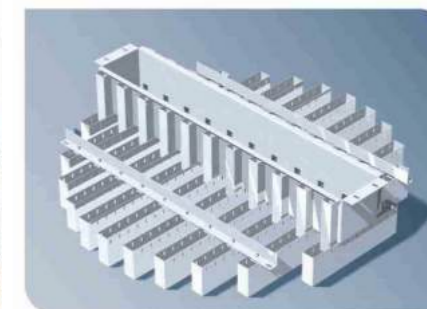
膜喷射塔板
Membrane jet tray



卡子
Clamp



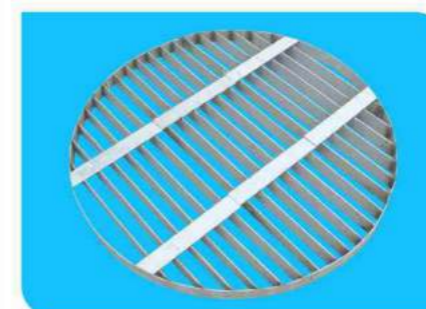
气液分布器
Liquid Distributor



管式液体分布
Tubular liquid distributor



泡罩
Bubble



支承格栅
Grating



丝网除沫器
Corrugated Plate Gauze