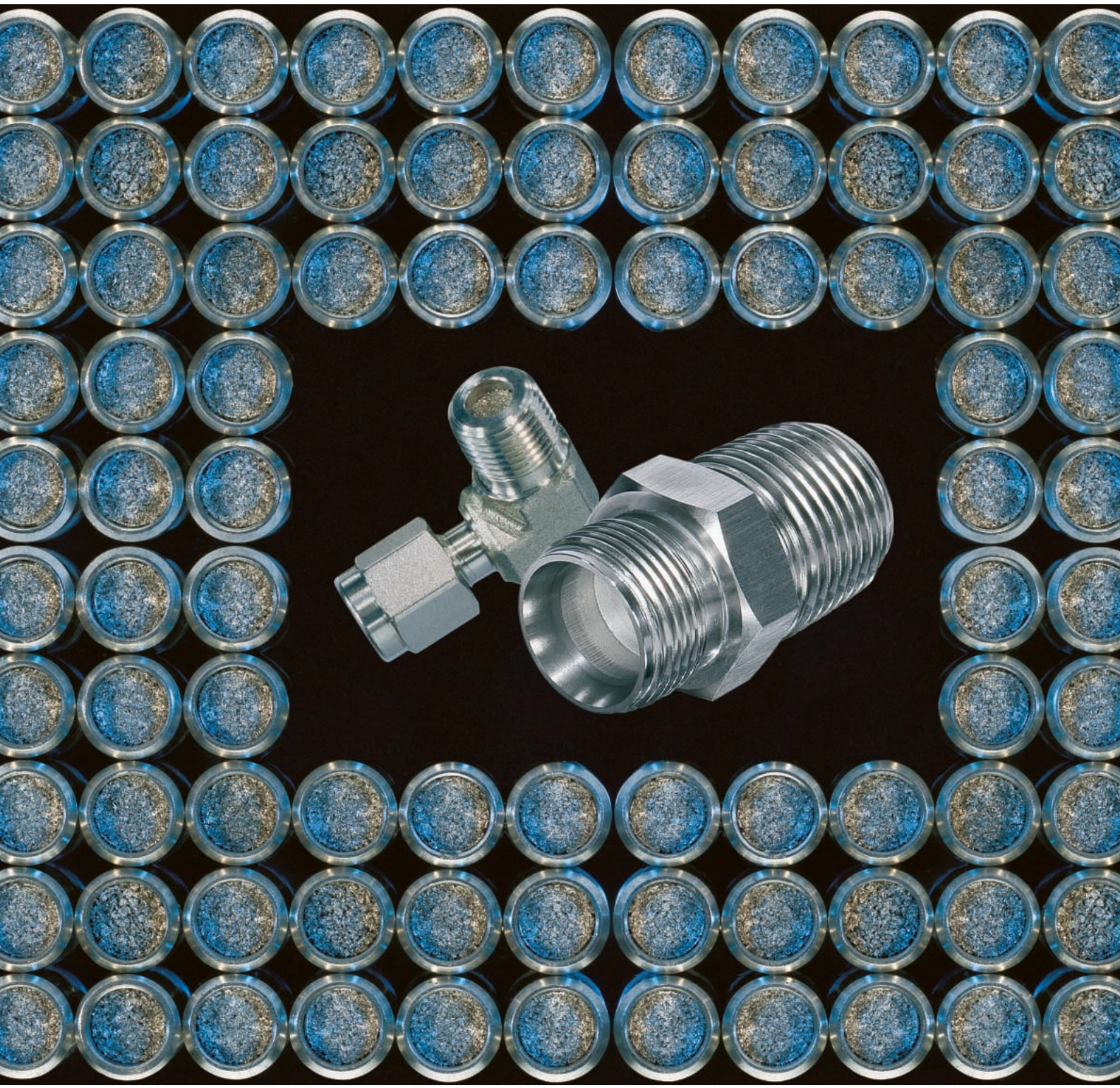
GKN SINTER METALS

SIKA® Ultra Precision

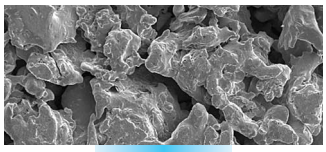
Porous Metal Flow Restrictors



EXPECT > MORE

SIKA Modules are available in a wide variety of shapes and pore sizes

- Flow Control
- Gas Spargers
- Chromatography Columns
- Gas Analyzers
- Purifiers
- Semi Conductor Industry
- Flow Equalizers
- Gas sparging



Pore structure

Flow control / Restriction
Is needed when specified gas or liquid flows are required. Flow restrictors ideally replace orifices, capillaries or micro metering valves, which can easily become plugged by even one piece of dirt. Due to their pore structure, which contains multiple orifices, the use of SIKA® Ultra Precision Flow Restrictors greatly minimizes this plugging possibility.

Automatic flow calibration

SIKA® Ultra Precision Flow Restrictors can be supplied:

- Sintered directly into standard compression or threaded fittings. This offers an optimum fit between flow restrictor and fitting, providing a maximum flow area.
- Encapsulated in a metal sleeve, which may be pressed into various fittings or assemblies.
- As a simple sintered metal plug which can be pressed into various customer supplied fittings or assemblies.

They are available in 316 L stainless steel and brass. Standard sizes are available in 1/8" – 1" NPT and tubing connections. SIKA® Ultra Precision Flow Restrictors are calibrated to ±5 % accuracy with air at standard conditions, using automated calibration equipment. They can be sized by specifying the gas, pressures and flow rate desired. The flow can be customized according to customer requirements.

Encapsulated flow restrictors

Gas Spargers
Are employed to disperse or dissolve a gas into a liquid. SIKA spargers create very fine bubbles providing intimate and uniform contact throughout the liquid. Gases are transferred more efficiently by the small bubbles. They are usually specified in the 7 – 20 µm range. All SIKA products have no weld seams on the porous body.

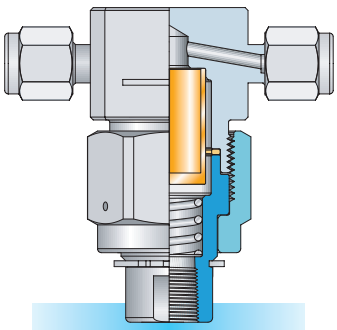
Sparger

Typical applications:

- Carbonation of Soft Drinks and Beer
- Oxygenation of Waste Streams
- Oxygen Stripping
- pH Control
- Chlorine Bleaching
- Ozonation
- Steam Injection

Standard material is 316 L. Special materials such as high nickel based alloys and titanium are available. Spargers are usually supplied with NPT thread, with a maximum length of 60" and an approximate maximum diameter of 2".

Chromatography / Gas analysers
Chromatography frits and filters are employed in HPLC and GC applications as column terminators and solvent filtration devices. These frits and filters are available in a wide range of porosity, shapes, dimensions and materials.
Filter discs in 316 L material and 1/16" thickness are usually in stock. Also titanium, inconel, hastelloy and special alloys are available.

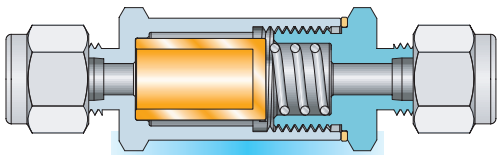


Bypass filter cup

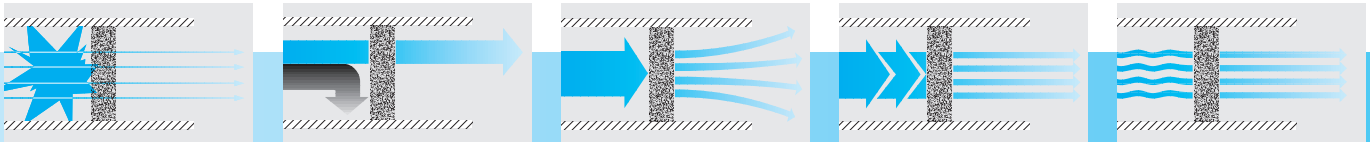
Filter Cups
are involved in nearly all high tech application where excellent filtration is needed. Particle retention starting from 0.01 µm is possible. GKN offers 16 different filter grades from SIKA-R 0.5 to SIKA-R 200.

Properties of SIKA products
The characteristics of SIKA-R...*AX* products result in the following important properties:

- Shape/-stability i.e. self-supporting structural elements suitable for high differential pressures.
- Particularly good properties when under compression, vibration and changing conditions or with sudden high pressure spikes.
- High heat resistance and thermal stability up to 1742 °F.
- Defined permeability and filtration properties, because the pore size and distribution are exact and uniform.
- Easily cleaned with superheated steam, chemical solvents, thermal processes or ultrasonically.
- The variety of materials used are both weldable and machinable.

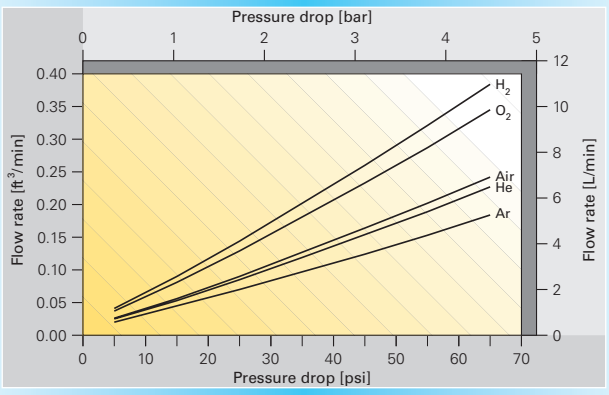


Inline filter cup

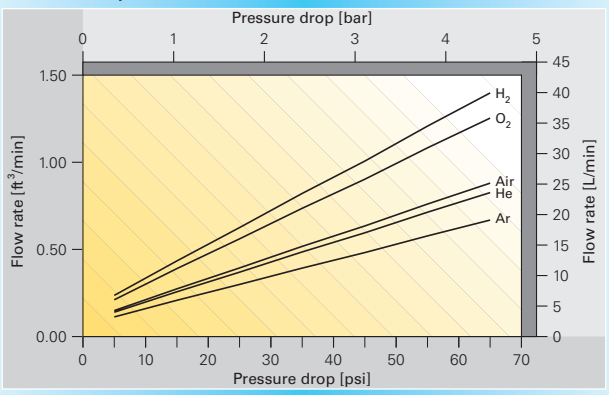


Typical characteristics of 1/4” restrictors

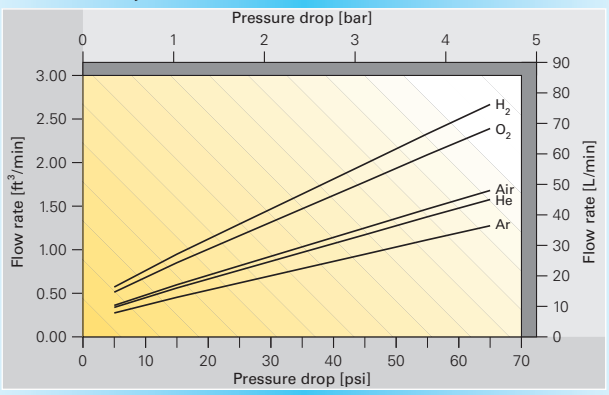
150 SCCM [40 psi air] **Grade 5**



550 SCCM [40 psi air] **Grade 20**

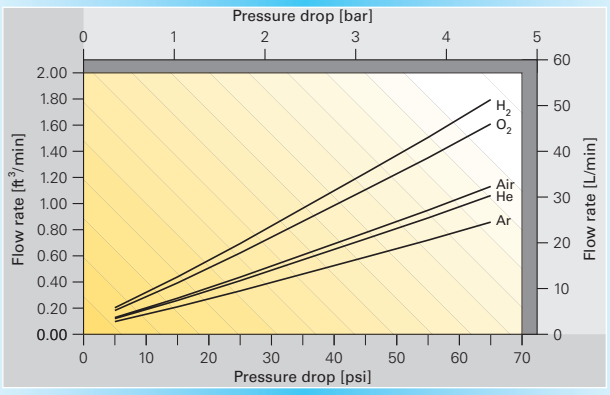


1,000 SCCM [40 psi air] **Grade 150**

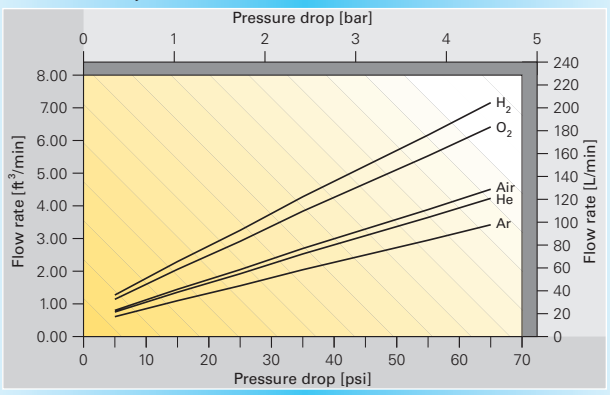


Typical characteristics of 1/2” restrictors

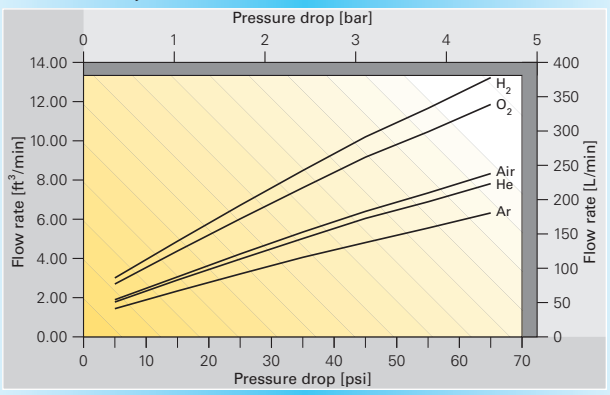
600 SCCM [40 psi air] **Grade 5**



2,500 SCCM [40 psi air] **Grade 20**

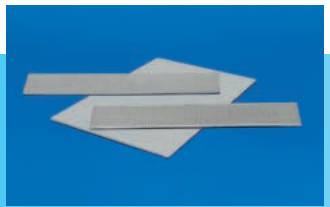


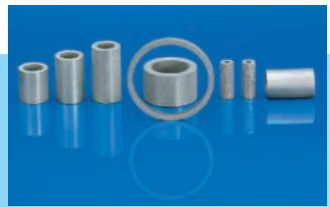
5,500 SCCM [40 psi air] **Grade 150**



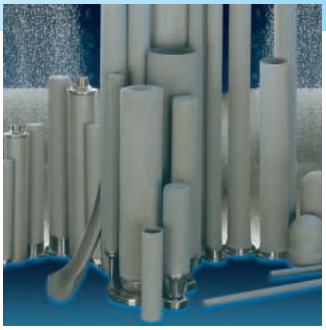
SIKA® Ultra Precision Flow Restrictors are calibrated with air at standard conditions.
The charts only show the flow of standard restrictors. We produce custom restrictors according to the customer’s requirement.
Only the viscosity of each gas has an influence on the flow rates. Therefore; you can calculate the flow for any gas according to the following formula:

$$X_{flow} = \frac{(Air_{flow} \cdot Air_{viscosity})}{X_{viscosity}}$$





GKN SIKA Systems and Components



SIKA-R...*IS*

products are manufactured by an isostatic cold pressing technique, show high chemical resistance and thermal stability. Seamless tubing up to 1500 mm (59") in length can be produced.

Pore size: 0.5 µm - 200 µm
Typical applications: process filtration

SIKA-R...*AX*

components are manufactured using a coaxial pressing technique and can be supplied in a wide range of dimensions. They are precision-finished, structurally stable and can be used as self-supporting components. Their uniform pore size insures reproducible flow behavior.

Pore size: 0.5 µm - 200 µm
Typical applications: gas detectors, flame arrestors

SIKA-FIL

components are sintered from a mixture of stainless steel fiber and the appropriate mesh support. They offer a remarkably high degree of porosity (up to 90 %), high permeability, high mechanical flexibility, low pressure loss and are corrosion resistant.

Pore size: 3 µm - 100 µm
Typical applications: polymer melt filtration

SIKA-R...*AS*

elements consist of a thin, metallic, very porous membrane sintered onto a coarser support. These elements are highly permeable and long-lasting.

Pore size: 0.1 µm - 3 µm
Typical applications: catalyst recovery

SIKA-B

products are sintered porous elements, constructed from spherical bronze powder. They are very corrosion-resistant and, due to their high structural stability and strength, used as self-supporting components.

Pore size: 8 µm - 200 µm
Typical applications: pneumatics and hydraulics

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