

“ Duplex Stainless Steel ”

Applications of Filtration process in Food industry and Medical industry

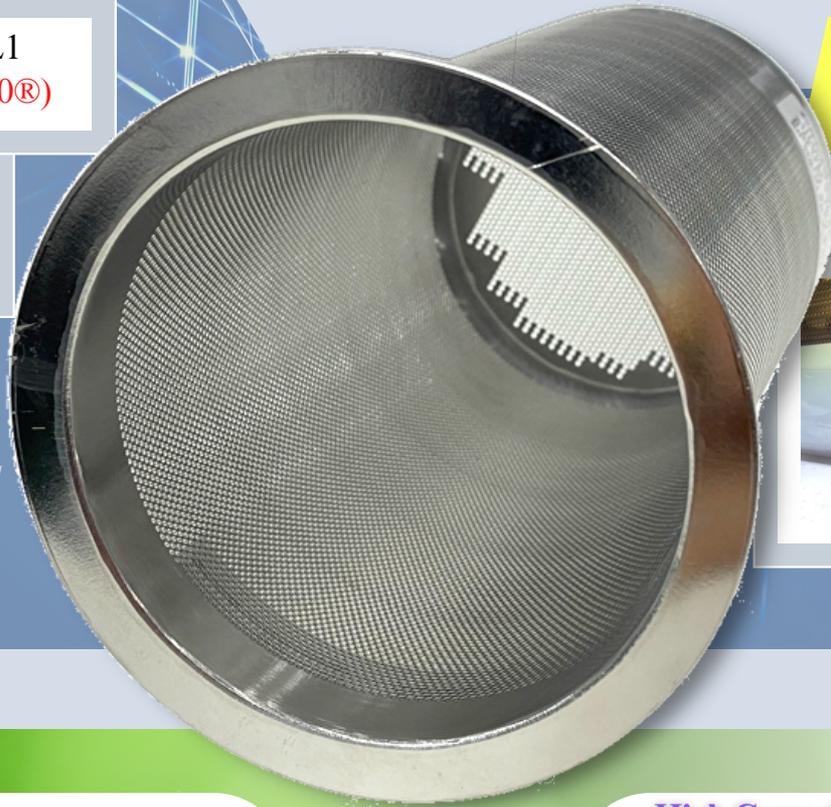
Sanitary Strainer ”

SUS821L1
(NSSC 2120®)

SUS329J1 equiv.
(NSSC®2351)

※ SUS821L1 is a substitute for SUS304 and SUS329J1 is a substitute for SUS316.

Overcome the problem of insufficient strength of SUS304 and SUS316 wire mesh



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High Strength

More than twice the strength and superior wear resistance of SUS304 and SUS316L.

High Corrosion Resistance

SUS821L1 has corrosion resistance equivalent or superior to SUS304, and SUS329J1 has corrosion resistance superior to SUS316L.

Polishability

Excellent buffing and polishing properties

Thermal Low-Expansion

Less thermal expansion and contraction than SUS304.

Contributes to running cost saving.!!

Saving

Rare metals Low content

Eco Friendly

<Manufacturer/Distributor>

OKUTANI 1895

<Joint Development>



NS-Stainless Corporation

Applicable specification of Laser drilled Duplex Stainless Steel and Perforated Duplex Stainless Steel

① SUS821L1 (NSSC 2120®)

| Drilling Method | Hole size (mm) | Thickness (mm) | Pitch (mm) | Max. Open area | Mesh (Equivalent) | Max. Sheet Size (mm) |
|-----------------|----------------|----------------|------------|----------------|-------------------|----------------------|
| Laser | φ0.035 | 0.5t | | 3.5% | #400 | 900×1800 |
| | φ0.045 | | | 5.0% | #300 | |
| | φ0.075 | | | 6.5% | #200 | |
| | φ0.110 | | | 10.0% | #150 | |
| | φ0.155 | | | 14.0% | #100 | |
| | φ0.200 | | | 17.0% | #80 | |
| | φ0.270 | | | 19.0% | #60 | |
| | φ0.320 | | | 22.0% | #50 | |
| | φ0.410 | | | 22.0% | #40 | |
| | φ0.560 | | | 25.0% | #30 | |
| Perforating | φ0.700 | P1.5 | 19.7% | #24 | 500×500 | |
| | φ0.800 | P1.6 | 22.7% | #24 | | |
| | φ0.900 | P1.8 | 22.7% | #20 | | |
| | φ1.000 | P2 | 22.7% | #18 | | |

② SUS329J1 equivalent (NSSC®2351)

| Drilling Method | Hole size (mm) | Thickness (mm) | Pitch (mm) | Max. Open area | Mesh (Equivalent) | Max. Sheet Size (mm) |
|-----------------|----------------|----------------|------------|----------------|-------------------|----------------------|
| Laser | φ0.410 | 0.8t | | 22.0% | #40 | 900×1800 |
| | φ0.560 | | | 25.0% | #30 | |
| Perforating | φ0.800 | | P1.6 | 22.7% | #24 | 500×500 |
| | φ0.900 | | P1.5 | 32.6% | #20 | |
| | | | | 40.3% | #18 | |

※Hole pattern of Laser is Actionlaser's usual pattern.

Equally spaced rows of holes, with holes equally spaced along each row but not producing a repetitive triangular or square pitch pattern of holes.

※Hole pattern of Perforating is 60 degree triangle.

Main chemical composition • Pitting Resistance Equivalent Number (PREN)

| Classification | Cr | Ni | Mo | Mn | N | Rare metal ^{*1} | PREN ^{*2} |
|-----------------------------------|----|----|-----|----|------|--------------------------|--------------------|
| ① SUS821L1 (NSSC 2120®) | 21 | 2 | - | 3 | 0.17 | 23 | 25 |
| ② SUS329J1 equivalent (NSSC®2351) | 23 | 5 | 1 | 1 | 0.17 | 29 | 30 |
| SUS304 | 18 | 8 | - | 1 | 0.04 | 26 | 19 |
| SUS316L | 18 | 12 | 2.5 | 1 | 0.02 | 32.5 | 26 |

● Compared to conventional stainless steel, Duplex Stainless Steel has a **higher Cr, lower Ni, Lower Mo, higher N**.

It is an eco-friendly material with low content of rare metals.

● NSSC 2120® and NSSC 2351® have a higher PREN than SUS 304 and SUS 316L, respectively.

*1 Sum total of rare metal = Cr% + Ni% + Mo%

*2 PREN = Cr% + 3.3 × Mo% + 16 × N%

Mechanical properties (reference values)

| Classification | 0.2% Yield Strength N/mm ² | Tensile Strength N/mm ² | Elongation % | Hardness HV |
|--------------------------|---------------------------------------|------------------------------------|--------------|-------------|
| ① SUS821L1 (NSSC 2120®) | 570 | 792 | 31 | 256 |
| ② SUS329J1相当 (NSSC®2351) | 613 | 830 | 29 | 264 |
| SUS304 | 300 | 654 | 56 | 170 |
| SUS316L | 281 | 561 | 53 | 143 |

● Compared to conventional Stainless Steel,

✓ **Twice the strength (0.2% YS)** → Thin wall and light weight are possible, also it's excellent **springiness**.

✓ **High Hardness** → It has good **abrasion resistance** and is not easily dented when hit by objects.

Physical properties (reference value)

| Classification | Density g/c m3 | Modulus of longitudinal elasticity k N/mm ² | Specific heat kJ/kg°C | Thermal conductivity w/m°C | Coefficient of linear expansion ×10 ⁻⁶ /°C | Magnetic |
|-----------------------------------|----------------|--|-----------------------|----------------------------|---|----------|
| ① SUS821L1 (NSSC 2120®) | 7.80 | 200 | 0.5 | 16.0 | 13.7 | Yes |
| ② SUS329J1 equivalent (NSSC®2351) | 7.80 | 200 | 0.5 | 15.2 | 13.1 | Yes |
| SUS304 | 7.93 | 193 | 0.5 | 16.3 | 17.3 | No |
| SUS316L | 7.98 | 193 | 0.5 | 16.3 | 16.0 | No |

● Compared to conventional austenitic stainless steel,

✓ **Magnetic** → Foreign substances can be detected and removed by magnets.

✓ **Small Coefficient of linear expansion** → Expansion, contraction, and thermal deformation due to heating or cooling are also small.

Easy to find debris, etc. with a metal detector in case of damage



Magnetic

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