

Distillation Column Packing

1. Raschig Rings

●For random packing in a column having a diameter approximately ten times larger than that of a Raschig ring, a required quantity of rings is calculated by :

$$n = \frac{C}{D^3}$$

n=Quantity of rings in 1 m³
D=Diameter of Raschig ring
C=0.77 (Constant for random packing)



For packing Raschig rings, Lessing rings and other annular products in order, the constant C=1.0.

■ Materials

Stainless steel, iron, aluminum, copper

H.Feat	1.62	1.37	1.19	1.09	0.97	0.90	0.78
Pressure mmHg	20	30	40	50	60	70	90

■ Characteristics

(Metallic Raschig Rings)

- [1] High mechanical strength
- [2] Light weight
- [3] Uniformly layered with less probability of breakage
- [4] High corrosion resistance
- [5] Easy handling
- [6] Applicable to columns of relatively large diameters

Diameter mm×Height mm×Wall Thickness mm	Mesh(pcs/m ³)
5φ×5H×0.4t	7,200,000 pcs
10φ×10H×0.3t	770,000 pcs
12φ×12H×0.3t	446,000 pcs
15φ×15H×0.5t	230,000 pcs
20φ×20H×0.6t	110,000 pcs
25φ×25H×0.5t	50,000 pcs
35φ×35H0.5t	17,000 pcs
40φ×40H×0.5t	12,000 pcs
50φ×50H×2.0t	6,160 pcs

2. Pall Rings

Materials

SUS304、316、316L

- A Pall ring has the same diameter and height, but is different from a Raschig ring in that several portions of the side wall are cut and bent inward so that a gas and a liquid can more efficiently come into contact with each other, achieving a lower pressure loss and a lower HETP than those of a Raschig ring. Pall rings are available in diameters of 12 mm (1/2 inch) or more.



Diameter mm×Height mm×Wall Thickness mm	Qty/m ³	Surface Area	Void Ratio	Density
12.7φ × 12.7H × 0.4t	410,000	430m ² /m ³	91.9%	640kg/m ³
15.8φ × 15.8H × 0.4t	230,000	370m ² /m ³	92.9%	560kg/m ³
25.4φ × 25.4H × 0.6t	51,000	210m ² /m ³	93.9%	480kg/m ³
38.1φ × 38.1H × 0.8t	15,200	140m ² /m ³	94.6%	430kg/m ³
50.8φ × 50.8H × 0.8t	6,500	110m ² /m ³	95.8%	330kg/m ³

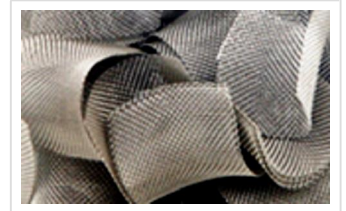
3. McMahon Packing

Materials

SUS304、316、316L

Characteristics

- [1] Applicable to columns of relatively large diameters
- [2] High void ratio and low pressure drop
- [3] High throughput capacity
- [4] Easy packing
- [5] Low cost
- [6] Applicable both to laboratory and industrial uses



Size	Mesh	Surface Area	Void Ratio	Density	HETP
6mm(1/4")	#42×100	1,590m ² /m ³	96.7%	380kg/m ³	5cm
10mm(3/8")	#38×80	1,405m ² /m ³	94.6%	420kg/m ³	10~15cm
"	#38×60	1,137m ² /m ³	95.6%	340kg/m ³	"
"	#36×60	1,185m ² /m ³	94.3%	450kg/m ³	"
15mm(1/2")	#36×60	922m ² /m ³	95.5%	450kg/m ³	10~20cm
"	#36×50	843m ² /m ³	95.9%	320kg/m ³	"
20mm(3/4")	#34×40	693m ² /m ³	95.9%	320kg/m ³	20~25cm
"	#32×35	556m ² /m ³	96.2%	300kg/m ³	"
25mm(1")	#34×40	392m ² /m ³	97.7%	180kg/m ³	25~30cm
"	#30×30	327m ² /m ³	97.4%	202kg/m ³	"

4. Dixon Packing

■ Materials

SUS304、316、316L

■ Characteristics

- [1] Very low HETP
- [2] Low pressure drop
- [3] Specifically advantageous for vacuum distillation
- [4] Easily replaceable



● A flat section of thin wire mesh is formed into a cylindrical shape with one end curved in an inward S shape to intersect the inner space, so that Dixon packing is also known as S-shaped partition packing.

By preflooding several times, a higher efficiency is achieved

Size	Mesh	Surface Area	Void Ratio	Density	HETP
3.0mm(1/8in)	#42×100	3,009m ² /m ³	92.4%	600g/l	1.5~2cm
6.0mm(1/4in)	#38×60	996m ² /m ³	96.2%	350g/l	2.5~3cm
10mm(3/8in)	#36×50	580m ² /m ³	96.5%	280g/l	
15mm(5/8in)	#36×50	400m ² /m ³	97.6%	190g/l	
20mm(3/4in)	#34×40	240m ² /m ³	98.1%	150g/l	
25mm(1in)	#34×40	210m ² /m ³	98.4%	130g/l	