

Technical information  
 available by request

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**Ceilcote Air Pollution Control**  
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# DESIGNING WITH TELLERETTE® TOWER PACKING

The performance data shown on the opposite side of this bulletin is provided to enable the chemical process design engineer to take full advantage of the unique characteristics of the Tellerette shape. This filamentous toroidal helix packing has been used over many years with effective results in wet scrubbers, cooling towers, entrainment separators, absorption and stripping columns, and air washers.

The Tellerette has attained acceptance in a wide range of industrial applications including the primary metals, metal finishing, pulp and paper, chemical, food, rendering, caustic chlorine and refining industries for wet scrubbing and gas/liquid contact applications.

## DESIGN ADVANTAGES

- A. Higher gas absorption efficiencies resulting from the continual dispersion/agglomeration characteristics which constantly expose fresh liquid surface to the gas flow.
- B. Greater gas flow capacity permitting use of smaller diameter, lower cost columns.
- C. Non-plugging operation, even when appreciable particles are present.
- D. No flooding.
- E. No channeling when proper initial liquid distribution is used.
- F. Tellerette Tower Packing is the first choice for many new absorption and scrubber applications and is an ideal replacement for existing extended surface packings - especially where greater throughput and/or efficiency is desired.
- G. Tellerette packing is available in #1, #2 and #3 Type-R, #2 and #3 Type-K sizes and in many different materials of construction.

## DESIGN TIPS

- A. Tellerette packing maintains good liquid distribution through packing depths in excess of 30'. Good initial liquid distribution is essential. Spray headers using full cone spray nozzles are recommended.
- B. Design of the packing supports is important. The plates or grating should have an open area of 75-80%. Intermediate supports must be of a design that will avoid maldistribution. Ceilcote Air Pollution Control packing supports are particularly useful in this regard.
- C. A rough rule-of-thumb for calculating liquid holdup in a #2 Tellerette packed bed is to multiply the cubic feet of packing used in the tower by 5%. This will provide the cubic feet of liquid holdup. To obtain weight multiply by the liquid density. For more exact liquid holdup data, please refer to the Tellerette performance curve entitled LIQUID HOLDUP.
- D. Tellerette packing can be operated at capacities up to the phase inversion point. Because of their open filamentous configuration, phase inversion in a Tellerette packed column can be reversed by simply reducing either the gas or liquid flow. The tower does not have to be shut down and restarted.

## PACKING COMPARISONS

	Tri-Pack*			Lanpac**			Tellerettes			Tri-Pack*			Lanpac**			Tellerettes		
Type	#1/2	NA	#1	#1	#2.3	#2-K	#2	#3.5	#3K	#1	#2.3	#2-K	#2	#3.5	#3K	#1	#2.3	#2-K
Size(in.)	1	NA	1.81	2	2.3	3.25	3.5	2.3	4.125	2	2.3	3.25	3.5	2.3	4.125	2	2.3	3.25
Surface (ft <sup>2</sup> /ft <sup>3</sup> )	85	NA	55	48	68	28	38	45	31	48	68	28	38	45	31	48	68	28
Free Vol. (%)	90	NA	87	93	89	95	95	92.5	96	93	89	95	95	92.5	96	93	89	95
Packing Factor	28	NA	36	16	21	11	12	14	9	16	21	11	12	14	9	16	21	11
Weight (lbs/ft <sup>3</sup> )	6.2	NA	5.5	4.2	6.2	3.0	3.3	4.2	3.1	4.2	6.2	3.0	3.3	4.2	3.1	4.2	6.2	3.0
Pieces/ft <sup>3</sup>	1728	NA	1000	216	200	165	40	50	54	216	200	165	40	50	54	216	200	165

## MATERIALS OF CONSTRUCTION

Property	P/E			P/P			PVC		CPVC		KYNAR*		NORYL**		TEFZEL***	
Operating Temperature†	180°F			200°F			130°F		200°F		275°F		180°F		300°F	
Tellerette Number	1	2	3	1	2	3	1	2	1	2	1	2	1	2	1	2
Pounds Per Ft <sup>3</sup>	Type K	2.8	2.9		2.8	2.9		4.6		5.0		4.9		3.9		6.1
	Type R	5.5	3.8	4.7	5.5	3.8	4.7	8.5	6.2	9.3	6.8	10.4	6.6	7.1	5.2	11.9

\*Kynar is a registered trademark of the Pennwalt Corporation

† Maximum operating temperature will vary depending on operating conditions

\*\*Noryl is a registered trademark of the General Electric Co

\*\*\*Tefzel is a registered trademark of E.I. DuPont