

ST SERIES ULTRAFILTRATION (UF) SANITARY SPIRAL ELEMENTS

10,000 MWCO PES Membrane

Synder's proprietary ST Series Ultrafiltration Sanitary Spiral Element is an industry favorite – it offers exceptional flux performance with minimal loss of target material in the retentate.

ST SERIES FEATURES

- Designed for maximum durability and long life
- Conforms to 3-A, FDA, and USDA standards
- Available in standard diameter sizes or customized configurations for a wide range of applications
- High resistance to fouling

APPLICATIONS

Food: Protein removal from fruit juices / Starch concentration / Egg white concentration

Dairy: Whey Protein Concentrate / Whey Protein Isolate

Biotech/Pharm: Concentration of Enzymes, Proteins, & Peptides / Polysaccharide gums

Misc: Endotoxin Removal



SANITARY ELEMENT OPERATING SPECIFICATIONS

Pressure	PSI	Bar
Max. Inlet Pressure	116	8.0
Min. Outlet Pressure	10	0.7
Max. Differential Pressure per Element	18	1.2
Max. Permeate Backpressure	5	0.3

NOTE: Soft start on boost pumps required to minimize pressure/flow shocks to elements

Temperature	Fahrenheit	Celsius
Max. Operating	122°	50°
Max. CIP Temperature	122°	50°

PH Parameters	pH
pH Range during Operation @ 25°C Max.	1.0 - 11.0
pH Range during CIP Operation @ 50°C Max.	2.0 - 11.0

NOTE: Do not exceed pH 11.0

Chlorine	Norm. ppm	Max. ppm
Free Chlorine in DF Water or Product	0	<0.1
Chlorine during CIP @ pH 10.8-11.0 and 50°C	150	180

NOTE: Maximum chlorine exposure for all elements is 30 minutes per day at pH and temperature conditions listed above

Peroxide	Max. ppm
Free Peroxide in Product during Operation	<3 ppm
Peroxide as a sanitizer @ 25°C Max, pH 6-7, 10 minutes recirculation	0.1%

Dairy Product Total Solids Limitations	Spacer			
	31	46	65	80
Products				
Sweet Whey Max. T.S.	15	25	28	30
Acid Whey Max. T.S.	15	24	26	28
Skim Milk Max. T.S.	14	24	26	28
Whole Milk Max. T.S.	15	30	33	35

NOTE: Trials should be made to determine temperature and viscosity effects.

OFFICE LOCATIONS

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ST SERIES ULTRAFILTRATION (UF) SANITARY SPIRAL ELEMENTS

10,000 MWC PES Membrane

ELEMENT DIMENSIONS

Element	Model Number	Diameter (Inches)	Length (Inches)	P.W.T. ID
3.8"	3838	3.8	38	0.83
	3838.75	3.8	38.75	0.83
	3850	3.8	50	0.83
	3851	3.8	51	0.83
4.3"	4333	4.3	33	0.83
	4335	4.3	35	0.83
	4335.5	4.3	35.5	0.83
	4336	4.3	36	0.83
	4338	4.3	38	0.83
	4350	4.3	50	0.83
	4351	4.3	51	0.83
	4355	4.3	55	0.83
5.8"	5838	5.8	38	1.138
6.3"	6338	6.3	38	1.138
	6356	6.3	56	1.138
8"	8038	8.0	38	1.138
	8238	8.2	38	1.138
	8338	8.3	38	1.138
10"	10338	10.3	38	1.138

ELEMENT AREA (SQUARE FEET)

Element		Feed Spacer (in mils)				
		24	31	46	65	80
3.8"	3838	88	76	56	47	39
	3838.75	89	77	60	46	39
	3850	111	118	102	75	52
	3851	114	121	104	77	53
	4333	96	87	74	58	50
4.3"	4335	100	95	79	61	53
	4335.5	104	97	82	63	54
	4336	108	100	83	63	55
	4338	112	105	88	66	58
	4350	150	133	99	81	71
	4351	154	136	101	83	72
	4355	166	147	109	90	78
	5838	186	180	136	109	90
6.3"	6338	236	228	171	133	109
	6356	357	345	259	201	165
8"	8038	372	330	258	205	168
	8238	440	389	310	240	181
	8338	447	396	319	253	205
10"	10338	n/a	655	493	384	324

RECOMMENDED ELEMENT CROSS FLOW RATE

Element		Feed Spacer (in mils)				
		24	31	46	65	80
3.8"	m ³ /hr	6	6	7	9	10
	gpm	26	26	32	38	44
4.3"	m ³ /hr	7	8	9	11	13
	gpm	32	34	42	49	59
5.8"	m ³ /hr	13.4	14.0	16.8	19.8	23.1
	gpm	59	62	74	87	102
6.3"	m ³ /hr	17	18	21	24	28
	gpm	75	78	93	106	123
8"	m ³ /hr	27	26	32	37	43
	gpm	118	113	140	164	190
10"	m ³ /hr	n/a	51	61	70	83
	gpm	n/a	224	268	307	366

TECHNICAL NOTES:

For element sizes not listed, please call or email Synder Filtration for details. We can design an element to fit your exact needs – just specify the element outer diameter (OD) or vessel/housing inner diameter (ID), element inner diameter (ID), and length. Elements are available with or without a controlled bypass tail. Additional feed spacers are also available.

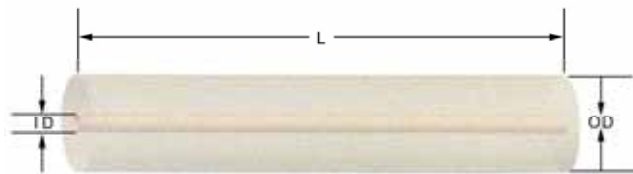
Maximum allowed differential pressure per element is 1.2 bar.

The recommended cross flow rate will be subject to differential pressure limitations and specific application conditions.

Trials should be conducted to determine optimal application conditions.

High temperature elements are available and can be specified by adding the suffix "HT" to the end of model name. †

ORDERING INFORMATION



ELEMENT MODEL NUMBER EXAMPLE: **ST - 2 A - 6338**

Spacer Size	Model Number
24 mil	1
31 mil	2
46 mil	3
65 mil	4
80 mil	5

Outerwrap
A = Control Bypass with Tail
B = Control Bypass without Tail

Element Descriptions					
Model	OD Inches	L Inches	ID * Inches	Weight LB	Weight kg
3838	3.8	38	0.83	10	4.5
3838.75	3.8	38.75	0.83	10	4.5
3850	3.8	50	0.83	13	5.9
3851	3.8	51	0.83	14	6.3
4333	4.3	33	0.83	11	5.0
4335	4.3	35	0.83	11	5.2
4335.5	4.3	35.5	0.83	11	5.2
4336	4.3	36	0.83	11	5.2
4338	4.3	38	0.83	12	5.4
4350	4.3	50	0.83	15	7
4351	4.3	51	0.83	15	7
4355	4.3	55	0.83	16	7
5838	5.8	38	1.138	15	7
6338	6.3	38	1.138	16	7
6356	6.3	56	1.138	24	11
8038	8.0	38	1.138	38	17.2
8238	8.2	38	1.138	38	17.2
8338	8.3	38	1.138	40	18
10338	10.3	38	1.138	43	20

Notes:

* Different diameters are available. Please specify your requirements when ordering.

† HT CIP Limits: pH 6-8; Temp 70°C; Duration 30 minutes; 50°C or lower – normal pH limits

Synder
Filtration

Specifications are subject to change without notice.
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