

Advanced Filtration Innovation for Quality and Safety

in Beverage-Related and Industrial Applications

Suntar International Group

Leading Provider of Filtration, Separation and Purification Solutions



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Agenda

- 01 **Suntar International**
- 02 **Membrane Technology**
- 03 **Industrial Applications**
- 04 **Case Studies**

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Tuas, Singapore (HQ)



Xiamen, China

- Founded in **1996** in Singapore
- Headquartered in Singapore, 6 offices globally
- **Integrated membrane solutions provider**
(Manufacturing, R&D, process design, engineering solutions)
- Listed on the Shanghai Stock Exchange in 2019
- Owns and operates 27 water treatment plants, combined 1,000,000 m³ treatment capacity

Suntar's Major Achievements

Our Accolades and Achievements



2000+

Process Separation
Projects



400+

Water Treatment
Projects



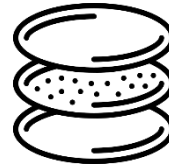
4 Mil/Day

Total Water
Treatment Capacity



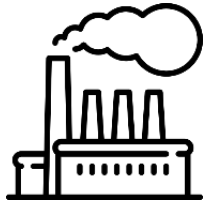
200+

Authorised
Patents



2400+

Membrane Applied
Processes



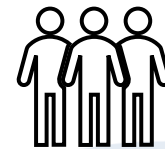
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Water Treatment
Plants in China



1 Billion

SGD in Market
Capitalization

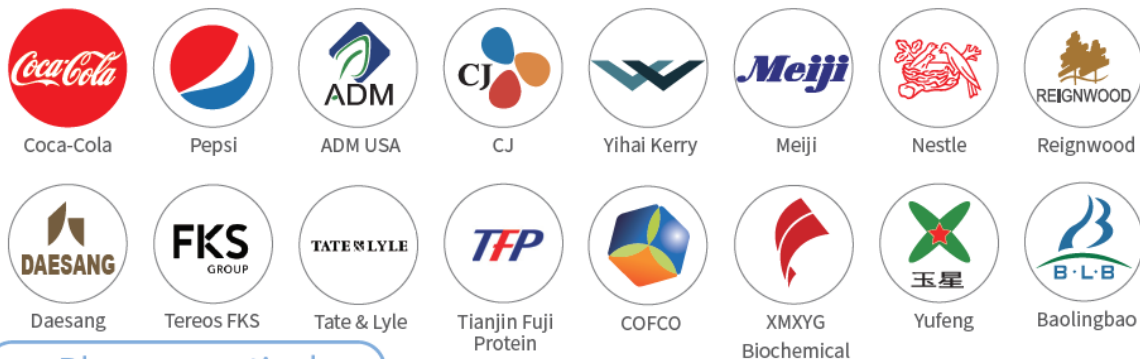


~1500

Employees

Our Track Record

Food & Beverage



Pharmaceutical



Chemicals



Petrochemical



How ?



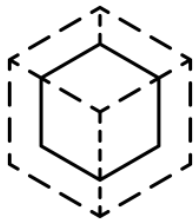
1. Cost Efficiency of Membrane Systems

- Filtration Innovation replaces conventional methods



2. Membranes Reliability

- Membrane Material are in-house formulas



3. Enhanced Product Safety

- Contaminant removal/ regulatory compliance (sanitary grade)



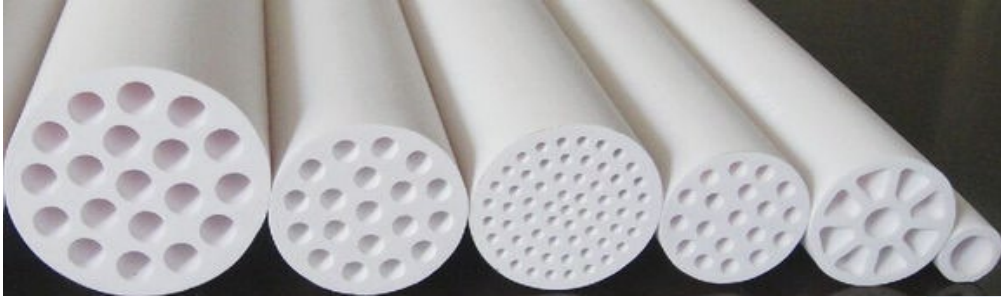
4. Improved Product Quality

- Consistently meet the strict yield quality

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Types of Membranes for the Process



**CERAMIC
MEMBRANES**

AND / OR



**SPRIRAL WOUND
MEMBRANES**

Ceramic Membrane – Unique Features

High-Temperature Resistance	<p>Alumina can withstand up to 1800°C</p> <p>Applicable Pressures & Temperatures: 0.1-1Mpa. Temp \leq300°C</p>
Acid/Alkali Resistance	<p>Any concentration of the hydrochloric acid, nitric acid, phosphoric acid strong acid environment</p> <p>Any concentration of sodium hydroxide, potassium hydroxide</p>
Durable	<p>Filter membrane layer composed of 99.995% ultra-pure α-alumina</p> <p>The service life can exceed those in market</p>

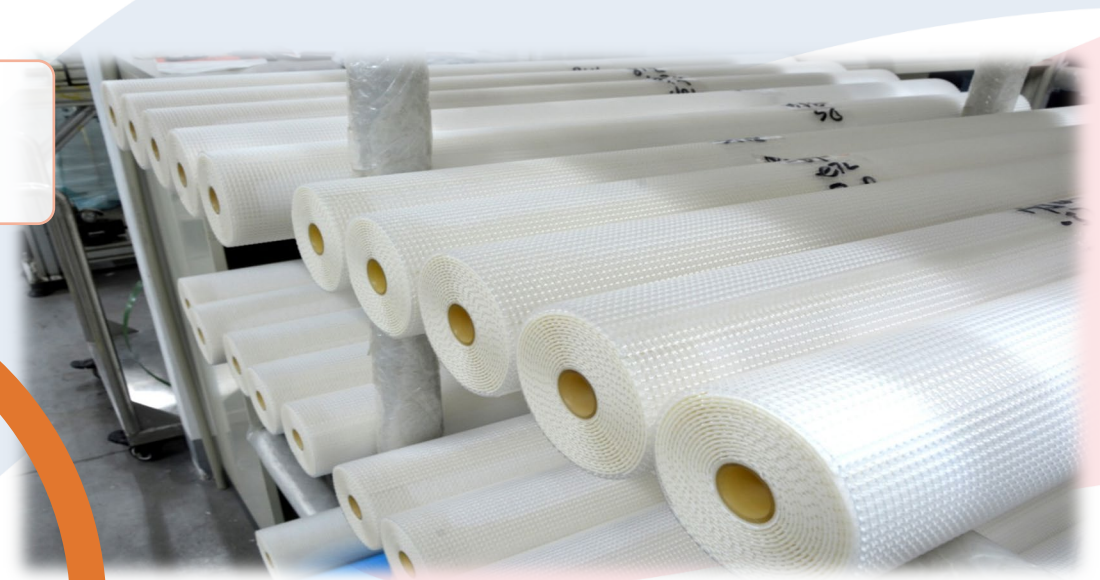
Spiral-wound (SW) Membranes : Applications

- Water Treatment
- Sewage Treatment

Universal
Product

Distinct Uses

- Concentration + Separation
- e.g. F&B - Sugar Production, Milk Pharmaceuticals, Salt Separation



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Applicable Industries



Oil-field Water



Fermentation



TCM
(Traditional Chinese
Medicine)



F&B



Pre-treatment to
Reverse Osmosis



Machinery
Wastewater



Degreasing Fluid



Oil Wastewater

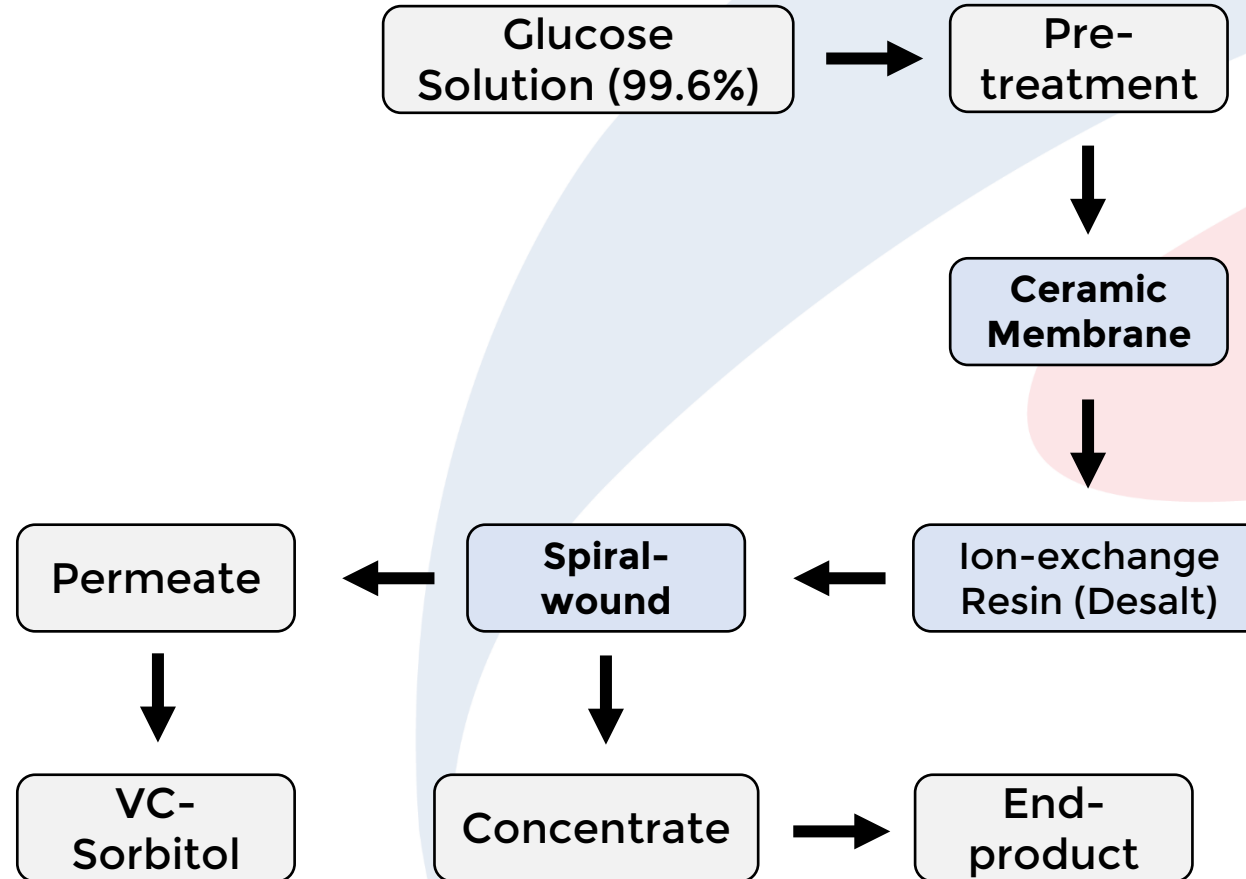
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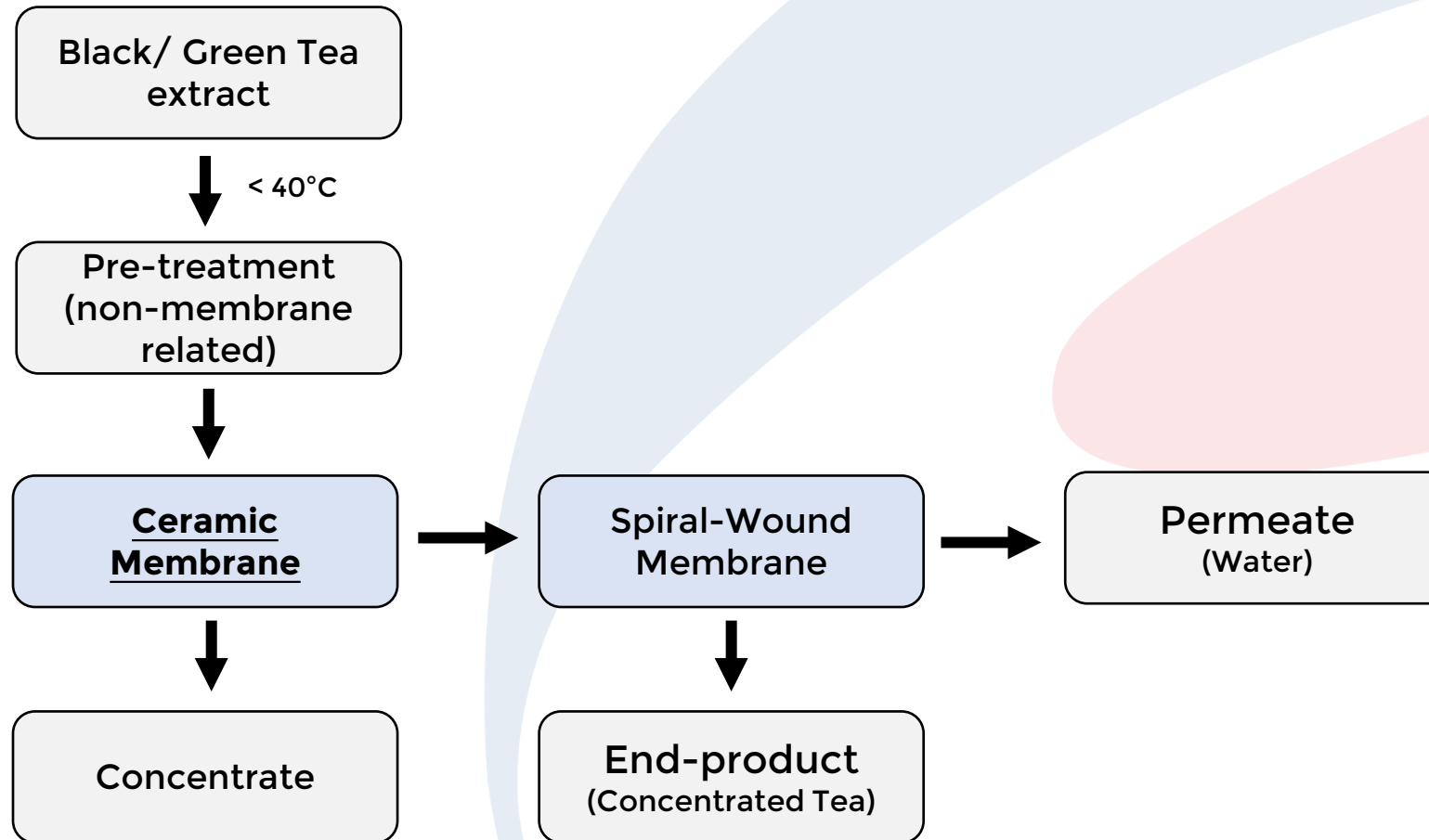
Case Studies

S/N	Industries	Products
A	Sugar Alcohols	Glucose (Sorbitol, Xylitol, Threonine, Erythritol)
B	Amino Acids	Citric Acid, Lysine, Threonine, Tryptophan, Phenylalanine, etc.
C	Tea & Fruit Extraction	Black, Green Tea/ Coconut
D	Antibiotics	Cephalosporin, Colistin, Vancomycin, Ningnanmycin
E	Vitamins	Vitamin C, Vitamin B12
F	Nucleosides	Inosine, Guanosine
G	Organic Acids	Long carbon chain dibasic acid
I	Others	Mycophenolic acid, D-ribose

1. Case Studies (A) – Glucose



4. Case Studies (C) – Black/ Green Tea Extract



Ceramic Membrane System



Ceramic membrane system

Spiral Wound System



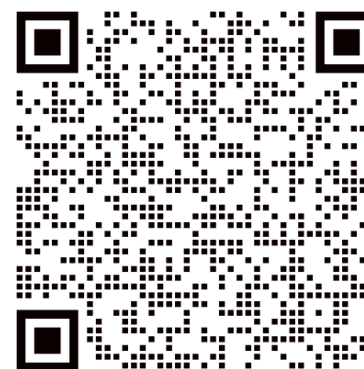
Spiral wound membrane system

Thank you !

Contact us at:



www.suntar.com.sg



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