

INNER **LINER** CHOICE.



The materials that make up the inner shell of composite pressure vessels are both temperature-resistant and chemical-resistant. Inner shells can be formulated to offer flexibility for your specific industry.

The inner shell isolates the fluid contents of the tank to eliminate corrosion, intrusion or reaction. The inner shell material is the only material in contact with the contents.

Polyethylene (PE) is the common inner shell material but polypropylene (PP), PVDF and other custom materials belong to the standard composite pressure vessels.

INNER **LINER** CHOICE.

Chemical Resistance

PE POLYETHYLENE (PE)

Good chemical resistance against strong acids and alkalis. Approved for food contact, drugs and drinking water installations. (see enclosed documents: Fresenius, DSM, Water Byelaws)

PP POLYPROPYLENE (PP)

Good chemical resistance against strong acids, alkalis and oils.
Good resistance to the most organic chemicals.

PVDF POLYVINYLIDENEFLUORIDE (PVDF)

A fluoroplastic with excellent chemical resistance against strong acids and alkalis, oils and organic solvents. Specially suited for semiconductor, pharmaceutical, ultra pure water, hightemperature and critical chemical process applications.

Please consult our factory for complete information on these materials.

INNER **LINER** CHOICE.

Chemical Resistance table

	<i>MIN Pressure</i>	<i>MAX Pressure</i>	<i>MAX Temperature</i>	<i>Brine</i>	<i>Sulphuric acid</i>	<i>hydrochloric acid</i>	<i>Sodiumhydroxyd</i>
THIS TANK IS RESISTANT TO	bar	bar	°C	NaCl	H₂SO₄	HCl	NaOH
F – Composite flange	0	10 bar	65°C	+	5%	5%	5%
C – Composite thread	0	10 bar	50°C	+	5%	5%	5%
H – High performance	0	10 bar	65°C	+	5%	5%	5%
V – Vinylester	0	10 bar	65°C	+	5%	5%	5%
P – Polyester	0	10 bar	50°C	+	-	-	-

⊕ suited ⊖ not suited

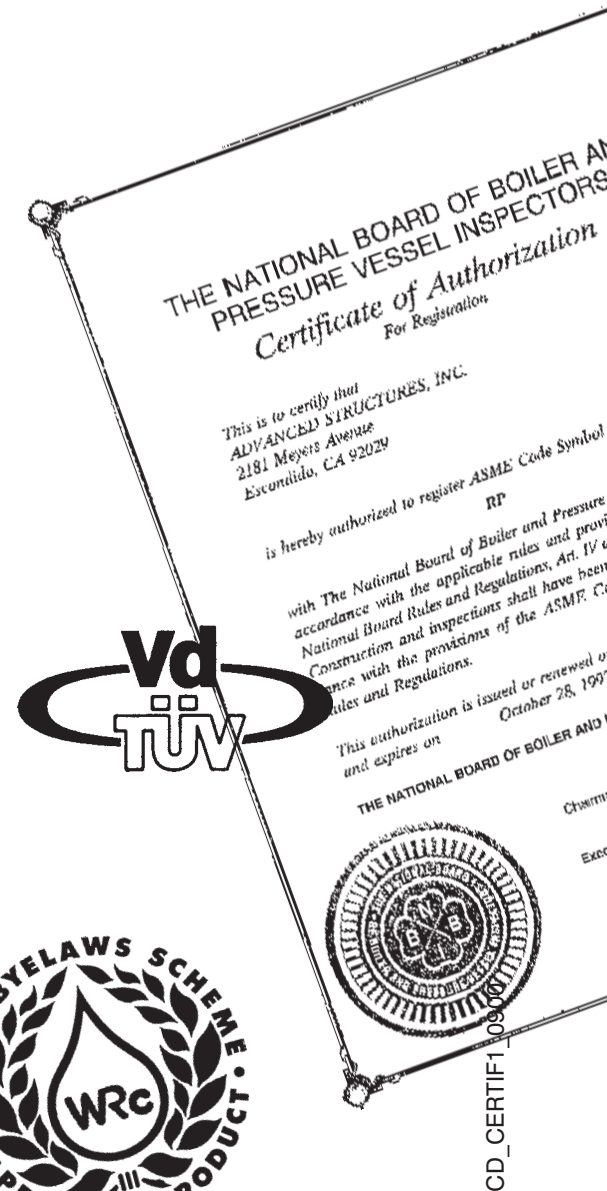
Please consult our Customer Service for resistance to other chemicals, deviating working pressures and deviating tank configurations.

QUALITY ASSURANCE & CERTIFICATION POSSIBILITIES

ON REQUEST, VESSELS CAN BE SUBMITTED FOR CERTIFICATION TO LEADING APPROVAL BODIES SUCH AS TÜV AND ASME.

- ZEFU / TüV
- UDT
- ASME
- Water Byelaws / WRc
- FDA
- Fresenius
- ISO 9001
- Manufacturer's test certificate
- Manufacturer's certificate of conformity
- Manufacturer's material certificate
- Manufacturer's certificate of origin

ZEFU



STRUCTURAL



PDTB 950664

RELITE A490 - Strongly Basic Selective Resin

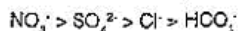
PDTB 950664

RELITE A490

RELITE A490 is a porous strongly basic anion exchange resin having an outstanding selectivity for nitrates.

The porous structure of RELITE A490 allows good exchange kinetics and resistance to physical, thermal, osmotic shocks and organic fouling. Its composition complies with the existing food processing rules and regulations.

The relative affinity towards customary anions follows the scale herebelow, where anions on the left are more firmly linked to the resin:



Consequently, during the service cycles nitrates displace sulphates, chlorides and bicarbonates from the resin bed.

RELITE A490 can be used in chloride or bicarbonate form.

TYPICAL CHARACTERISTICS	
Matrix	: Porous copolymer styrene-DVB
Functional group	: Quaternary ammonium group
Colour and physical form	: Light yellowish opaque beads
Particle size range	: 0.3 - 1.18 mm
Effective size	: 0.4 min mm
Uniformity Coefficient	: 1.6 max
Ionic form at the delivery	: Cl ⁻
Total exchange capacity	: 1.3 min eq/l
Water retention	: 38 ± 44 %
pH stability range	: 0 - 14
Operating pH range	: 0 - 12
Operating temperature	: 100 °C max (Cl ⁻ form)
Shipping weight	: 690 g/l approx.
Standard packaging	: 25 ± 50 liter bags

RECOMMENDED OPERATING CONDITIONS	
Minimum bed depth	: 800 mm
Linear operating flowrate	: 5 - 50 m/h
Backwash expansion	: 50 - 80 %
Regenerants	: NaCl NaHCO ₃
Regenerant level range	: 100 ± 200 150 ± 300 g/l
Concentration range	: 10 4 - 6 %
Slow rinse volume	: 1.5 - 2 BV
Fast rinse volume	: 4 - 6 BV



OPERATING CAPACITY

Operating capacity depends on various parameters, such as inlet composition, endpoint, kinetic load and regenerant level.

In case of need, please contact our TECHNICAL DEPARTMENT.

Fig. 1 BED EXPANSION IN WATER

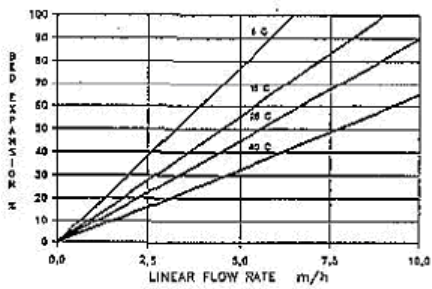
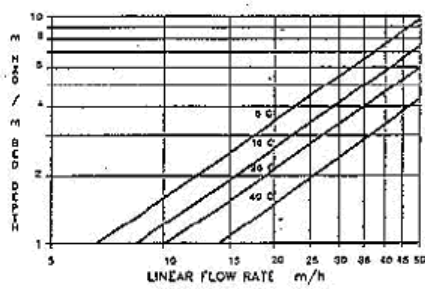


Fig. 2 PRESSURE DROP IN WATER



<u>RECOMMENDED NaCl QUALITY FOR REGENERATION</u>	
Purity	97 % min
Moisture	2 % max
Suspended solids	0 %
Ca ⁺⁺ + Mg ⁺⁺	0.5 % max
Sulphates	1 % max
Soluble iron	0 %
Alkalinity	0.001 max ppm CaCO ₃

All data and suggestions made herein are based upon our research and are believed to be accurate. However, no guarantee is made or implied since conditions and methods of use of our products are beyond our control. Our products are sold on the conditions that the user will evaluate them himself, as well as our formulae and recommendations, to determine their suitability for his own purpose. Any responsibility as to the use of our products can not be construed as recommendations for their use in the circumstances of any client.

Resindion S.R.L.

 Mitsubishi Chemical Corporation

Date: March 2002

ATTESTATION

The attached listed ion exchange and adsorbent resins compositionally comply with:

- the definition contained in F.D.A. CFR 21 - 173.25
- the positive list of raw materials, approved for food applications, described in the EC RESOLUTION AP (97) 1 of September 30th, 1997;
- CIRCULAIRE DGS/PGE/1.D du 23 Juillet 1985; ARRETE DU 29 MAI 1997
- BGA (1985) RECOMMENDATION N° XXIV.

The resins once submitted to a specific pre-treatment procedure, that will be case by case suggested by the manufacturer, will meet the following Regulations' requirements:

- F.D.A. - CFR 21 - 173.25
- RESOLUTION AP(97)1 - General principles
- AFNOR T 90-601
- DIN 54 411

RESINDION S.r.l.

Technical Dept.

RESIN DISINFECTION AUTOMATED PATENTED SYSTEMS FOR DOMESTIC SOFTENERS

In some European countries resin disinfection has become a mandatory requirement for softeners used for potable water treatment .

Even when regulations are not an issue, periodic resin disinfection is recommended in order to avoid bacteria growth and related pollution of treated water.

The automatic disinfection systems for residential softeners STERIL-SOFT and STERIL-COMPACT produce active chlorine through brine electrolysis during softener regeneration. Chlorine comes in contact with resin together with brine and realises sanitization ; chlorine residual is washed out at the end of regeneration (rinse cycle).

Patented start-up system allows electrolysis during brine draw cycle only ; shut-down is automatic at the end of brine flow through electrodes.

Chlorine production may be set according to installation requirements. In case of harder operating conditions, we recommend setting in the 8-10 range ; for normal operating conditions in the 4-6 range.

This device complies with CEE 23/73 and 336/89 regulations.

STERIL - SOFT

STERIL-SOFT system can be used in combination with any automatic valves ; control unit has an independent transformer and electrodes can be installed on brine draw pipe.

STERIL - COMPACT

STERIL-COMPACT system can be used in combination with Autotrol 255 valve only, as it uses the same transformer as the valve does ; furthermore, electrodes and control unit can be installed on a special adapter between valve body and air-check (for 255/460i valve only, adapter is installed instead of the air-check).

Installation is more compact and economical . STERIL-COMPACT is supplied as a kit.