

Bioreactors for Corrosive Media

The PROREACT BC HYBRID Technology



Custom-made Bioreactors

For

- ✓ Fermentation with highly corrosive fermentation media
- ✓ Preparation of corrosive fermentation media
- ✓ Downstream bioprocessing of proteins
- ✓ Integration of bio/chemical processes

Characterized by

- ✓ Composite system with fluor polymer-coated SS components
- ✓ CIP- and SIP-ability of vessel and piping
- ✓ Hygienic-design compliance of fluor polymer and SS parts
- ✓ Investment advantage in comparison with glass/ceramic reactors
- ✓ Custom-made design with several options

Products for Biotechnology





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Forget problems with pitting or damages due to aggressive media

Thanks to its outstanding „anti-corrosion“ technology, the PROREACT BC HYBRID system combines several features and characteristics which generally have been seen as inconsistent. To design a device which is long-lasting and as easy to handle as a pressurizable stainless steel bioreactor, but which has all the advantages of a corrosion-resistant plastic system, is not really a simple task.

But by aid of our long experience in both faculties – stainless steel PROREACT plants as well as corrosion-resistant ACETATOR plants with integrated plastic parts-, we have been able to combine their characteristics to obtain a bioreactor that is both reliable and rather economic in comparison with glass or ceramic units.

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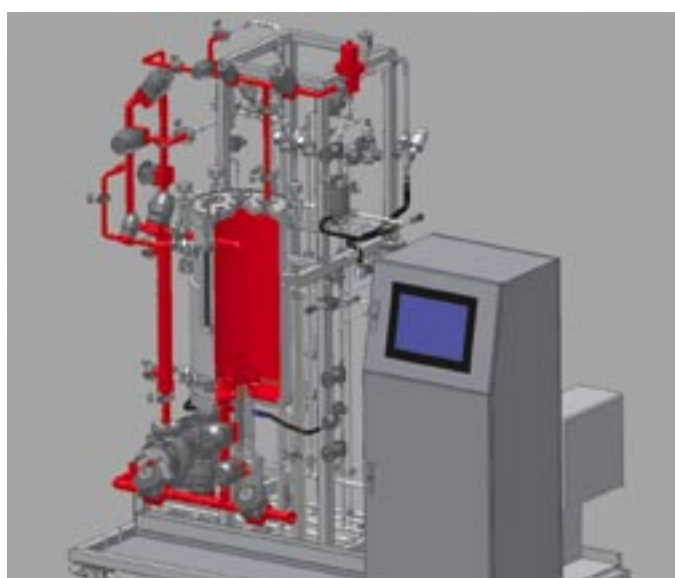


Figure 1: Indication of highest corrosion-resistance surfaces and parts (in red color) in a PROREACT BC HYBRID bioreactor; exemplary shown with integrated CIP and micro-filtration unit.

The use of ECTFE-coated surfaces combined with hygienic-design parts and piping made from PVDF (figures 1 and 3) provides corrosion-resistance against acids, alkaline solutions and strong concentrations of salts.

This design gave the opportunity to create bioreactors which are long-lasting even in very rough media conditions.

In case of a damage, the replacement of parts and the reconstruction of the coatings is easy to organize and not cost-intensive.

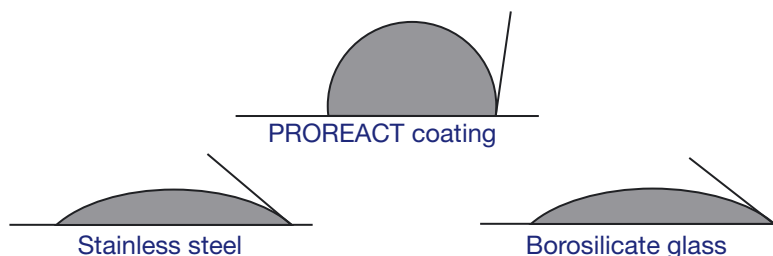


Figure 2: Wetting contact angle of FRINGS PROREACT parts which are in contact with the product.



Figure 3: FRIBORATOR mixing and aeration unit (classical stirrers also available).

Another advantage of this technology is the self-cleaning property of the inner surface which, thanks to its hydrophobic character, will not be covered by liquids (figure 2) and will drain liquid drops with particles or solubles. Rouging or the accumulation of biofilms is thus avoided.