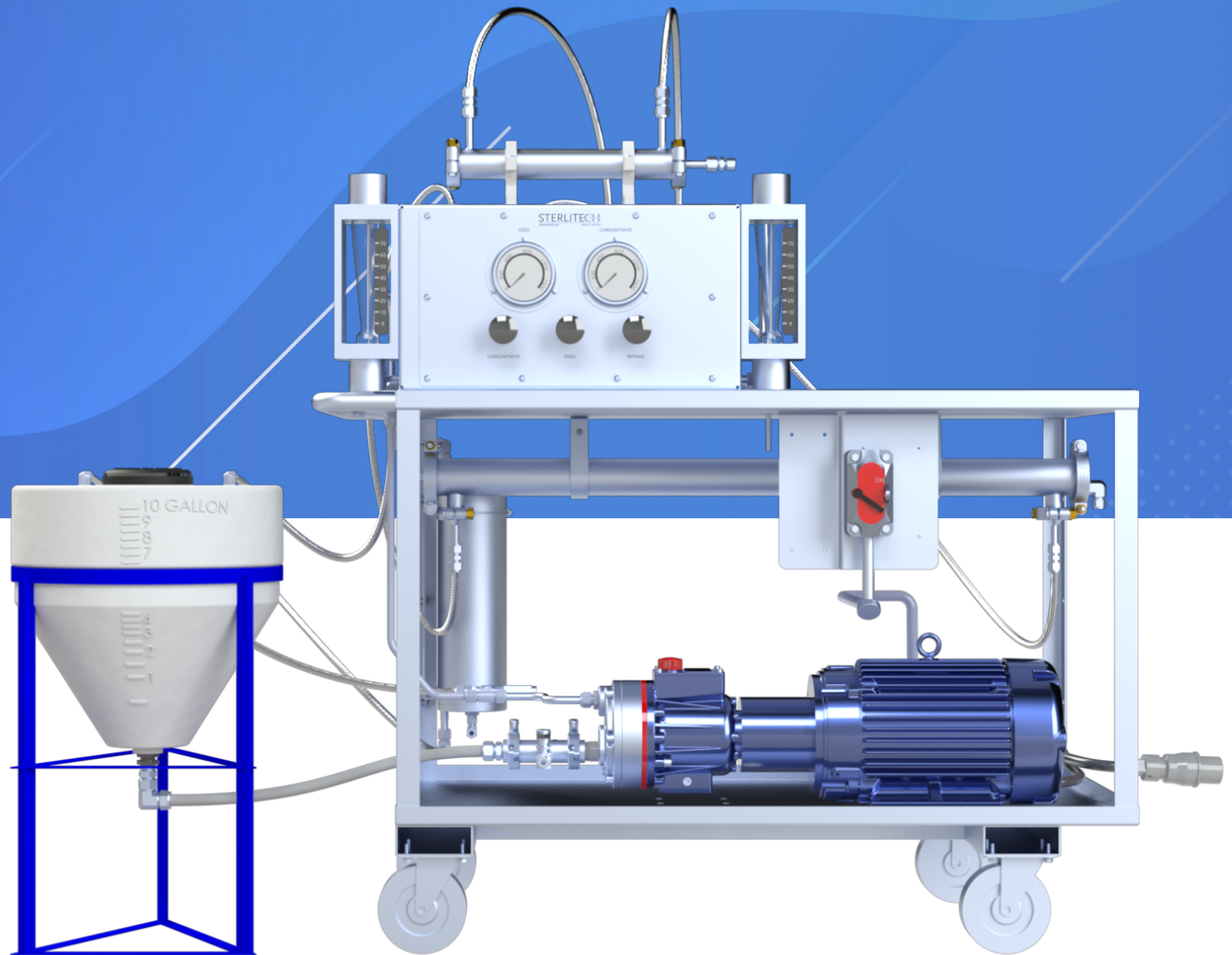


STERLITECH

C o r p o r a t i o n

Explosion Proof Pilot Skid Owner's Manual



Introduction

The Sterlitech™ Explosion-Proof Pilot Membrane Test Skid is designed to evaluate the performance of membranes widely used in organic solvent filtration applications by simulating the flow dynamics of larger, commercially available systems. This test skid offers experimental control by allowing adjustment of the flow parameters to accommodate a wide range of applications. Equipped with explosion-proof electrical parts and chemically resistant wetted materials, exclusively designed to prioritize your safety this skid provides additional protection when conducting membrane performance evaluations that require flammable or explosive organic solvents.

System Features

SYSTEM FEATURE	DESCRIPTION
Cell Type	Spiral Wound Membrane Housings
Configuration	2 Parallel Lines
Feed Flow Rate	33.4 LPM (8.8 GPM) Max
Feed Tank	1-1/2" Sanitary Connection Port; <i>Optional: LLDPE, Full Drain, Conical, 38 Liter (10 Gallon)</i>
Feed Controls	Manual Bypass Valve, Manual Feed Valve, Manual Concentrate Control Valve
Data Display	Feed and Bypass Flow Meters, Feed and Concentrate Pressure Gauges
Max Pressure	69 bar (1000 psi)
Electrical Supply	Designated by SKU Description
Motor Rating	Leeson Explosion Proof Motor: 7.5 HP, 3-Phase
Pump	Hydra Cell D10 Pump: GPM Max 8.8 at 1000 psi (69 bar)
Weight	295 Kg (650 lbs)
Electricals and Wiring	Leeson Explosion Proof Motor: Rated for Class I, Division 1, Groups C and D Appleton Switch: UL Listed for Class I, Division 1 and 2, Groups C and D; Class II, Division 1 and 2, Groups E, F, and G; and Class III Wiring: Wired per Class I, Division 1 Specifications

COMPONENT	MATERIALS OF CONSTRUCTION
Pump Head	316L SS, FKM, Nitonic 50, Elgiloy, Celcon
Plumbing	316L SS, FKM, PTFE, Glass
Housing / Cells	316L SS, EPDM, Viton

Use this [Chemical Compatibility Chart](#) to check the compatibility of your process fluid with the wetted parts. For fluids not listed, contact Sterlitech.

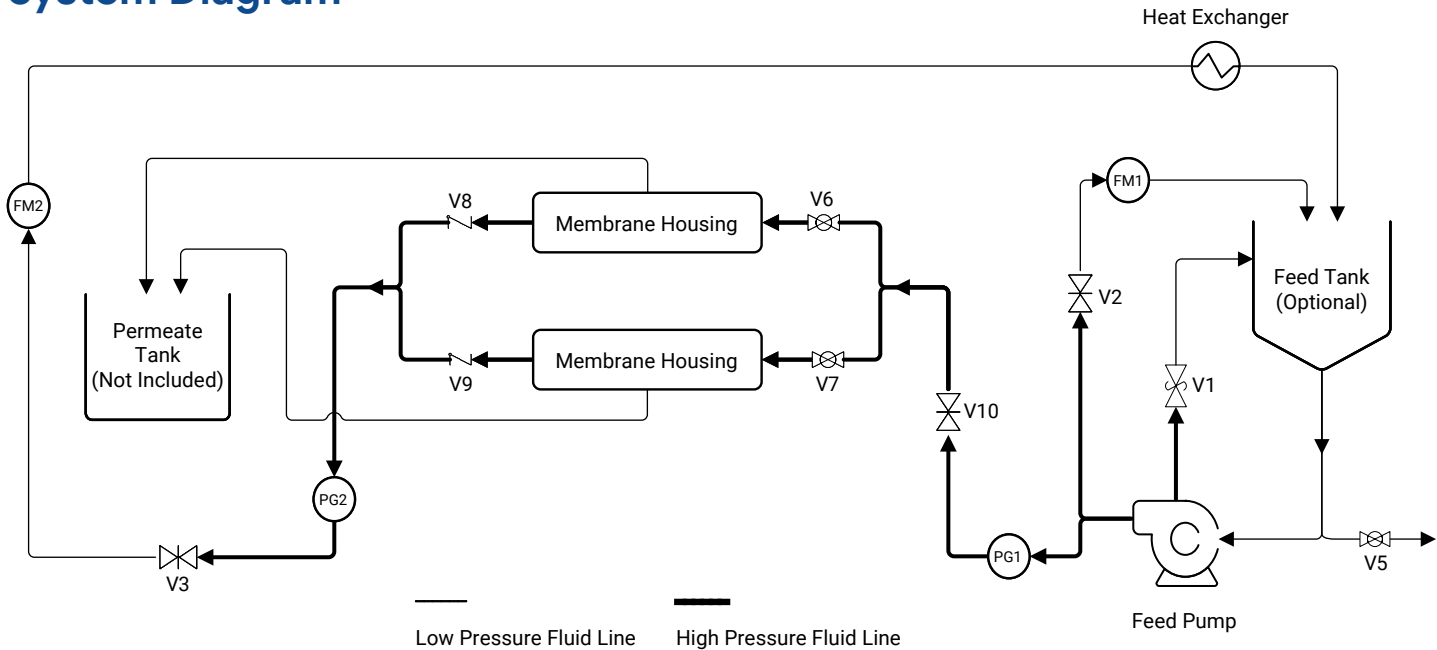
Temperature Limit

The system should not be operated above 180 °F (82 °C). The membranes, feed/permeate spacers, O-rings, and cell body material may contribute to lower the actual temperature limit of the system.

**Maximum pressure and temperature ratings are dependent on a variety of factors. Listed values are guidelines based upon material properties and cannot be guaranteed in every application.*

*** The materials listed are the standard materials of construction for this model and are subject to change.*

System Diagram

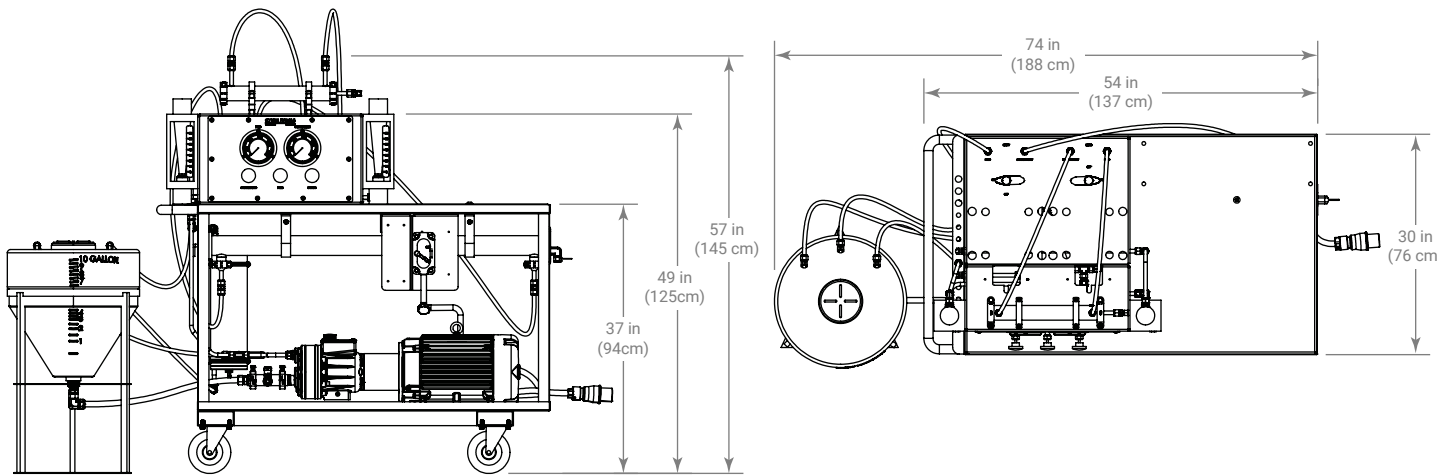


Legend

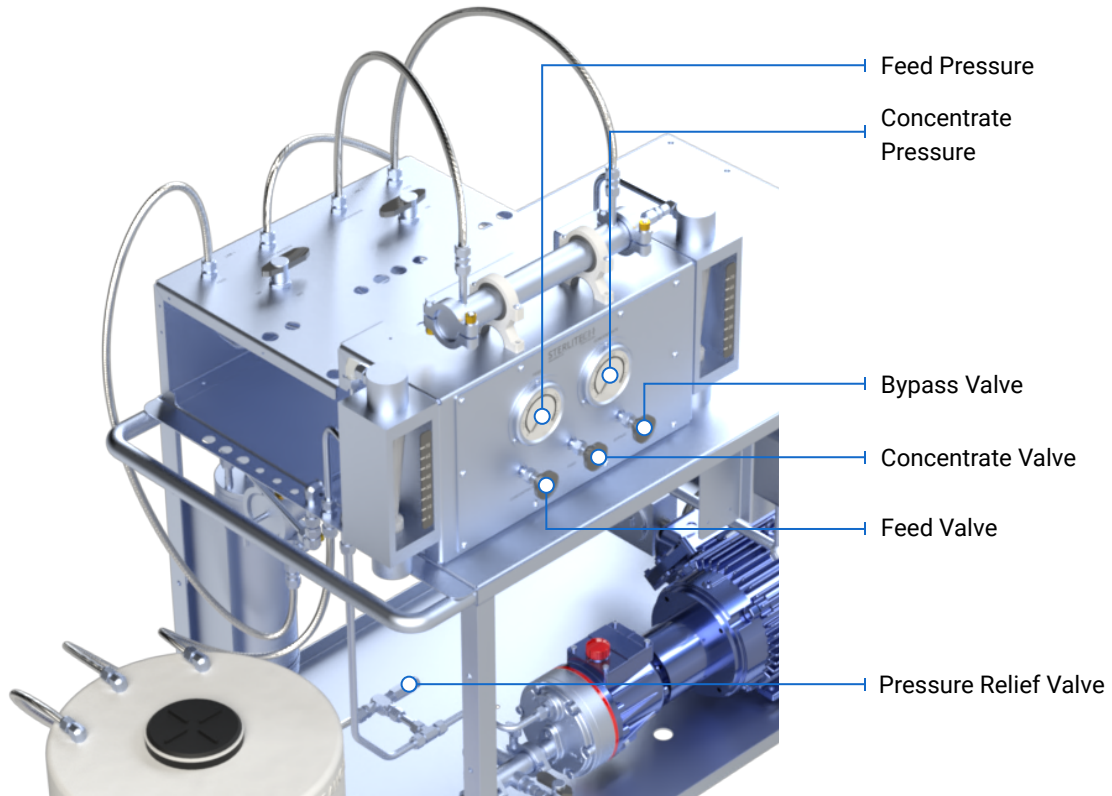
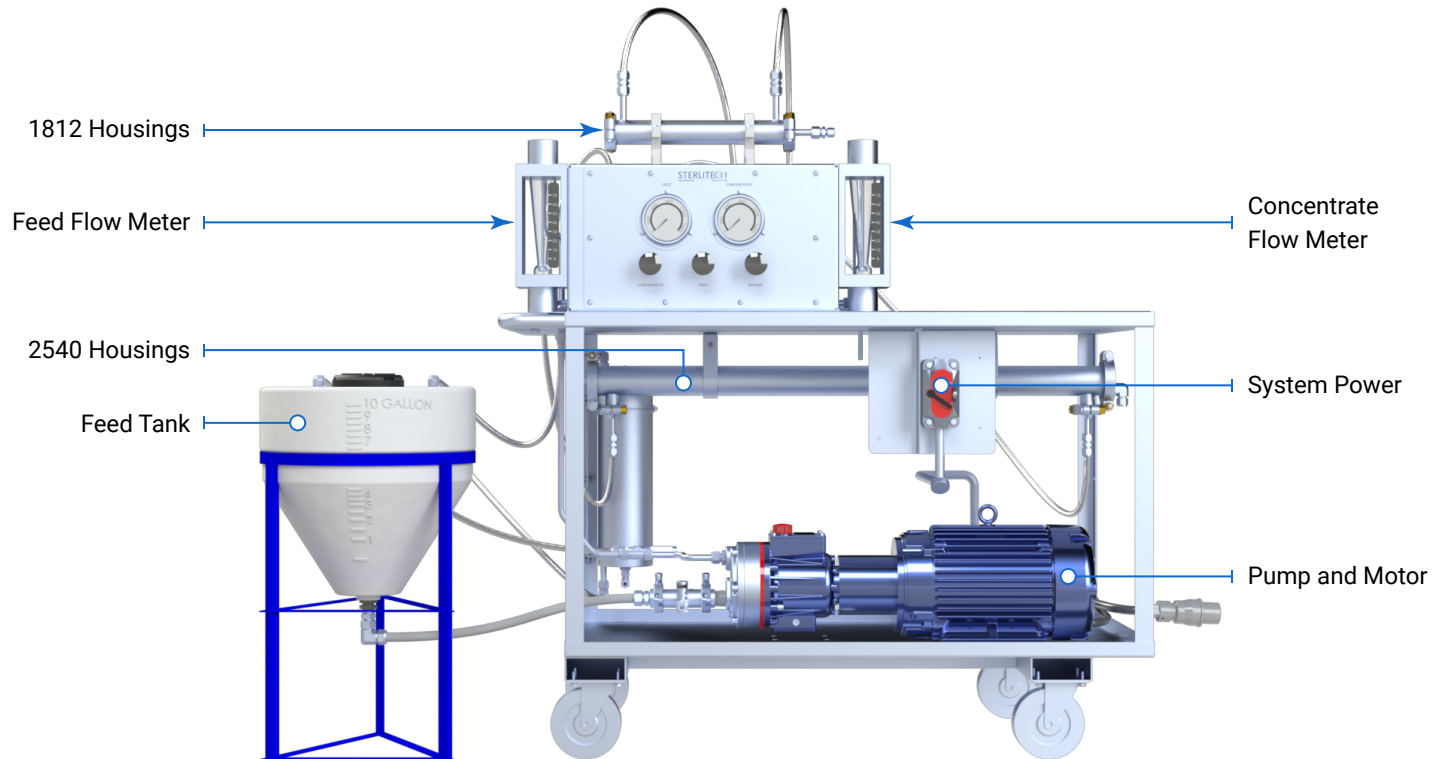
V1	Feed Pressure Relief Valve
V2	Feed Bypass Valve
V3	Pressure Control Valve
V4	N/A
V5	Drain Valve
V6	Bank Selector Valve #1
V7	Bank Selector Valve #2

V8	Back Flow Preventer Valve #1
V9	Back Flow Preventer Valve #2
V10	Feed Flow Control Valve
PG1	Feed Pressure Gauge
PG2	Concentrate Pressure Gauge
FM1	Bypass Flow Meter
FM2	Concentrate Flow Meter

System Dimensions



System Overview and Feature Identification



Basic Operating Resources

[Skid System Video Resources](#)

Includes:

- [1812 Manual](#)
- Initial Setup
- Chiller Setup
- System Startup, Operation, and Shutdown
- Fluid Recovery Process

Additional Operation Resources

System Testing Best Practices

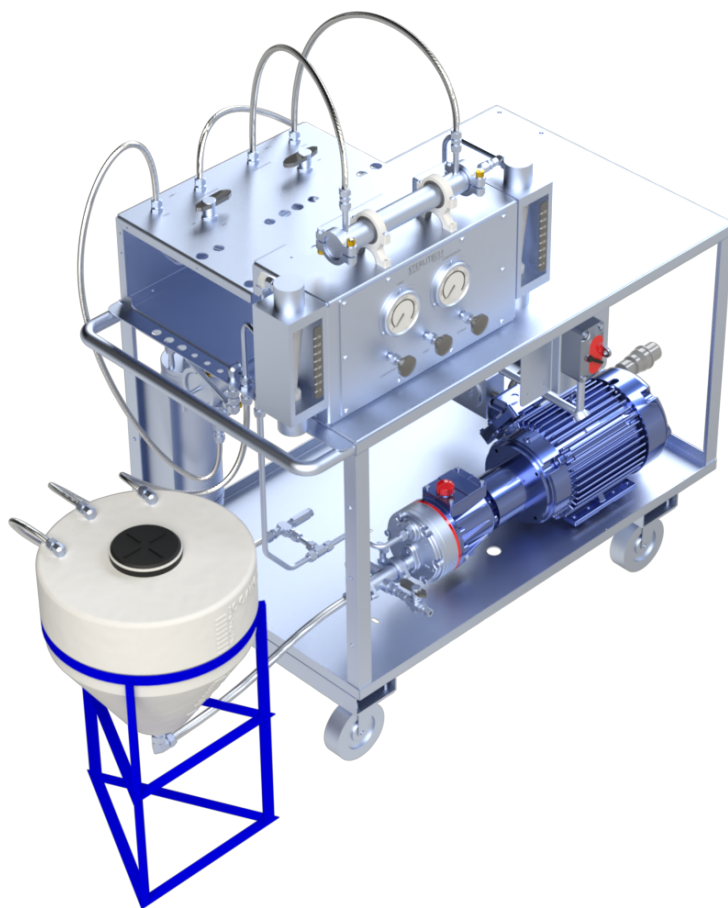
[CF Filtration Handbook](#)

Includes:

- Basics of Forward Osmosis Filtration
- FAQs
- Example Studies
- Cutting Custom Membrane Filters
- Preconditioning Membranes
- Temperature Effect on Membranes

[Compression Connection Video](#)

[Cutting Custom Membrane Filters](#)



Troubleshooting Resources

Online we have many video references should you encounter any issues with your system.

You can view these at this link: [Membrane Process and Development Channel](#).

Maintenance

Pump Maintenance:

Refer to the [Pump Installation and Service Manual](#)

General Maintenance:

Proper flushing/cleaning is recommended after each run (e.g., brackish, seawater, or organic solvents).

This will eliminate the formation of deposits/scales or corrosion of the system.

Replacement Accessories

CELL TYPE	SPARE PARTS AVAILABLE	SPARE PARTS LINK
1812 / 2540 Housing	Alternative O-rings, Elements , Fittings	Spiral Wound Housings

Return Material Order Procedure

If materials are to be returned to Sterlitech for repair, evaluation, or warranty consideration, a Return Material Authorization (RMA) number must be obtained from Sterlitech prior to the return. Contact Sterlitech Customer Service Department for return forms and procedures.

Be sure to include a complete, detailed written reason for the return. Also, include serial numbers, installation and removal dates, and any other pertinent information that is available. The crossflow cells have a serial number imprinted on them.

Indicate the proposed disposition of the material and reference the RMA number on all packages or cartons. All material must be shipped to Sterlitech with freight prepared by the customer.

Warranty

The following is made in lieu of all other warranties expressed or implied. Sterlitech Corporation guarantees equipment to be free from defects in material and workmanship when operated in accordance with written instructions for a period of one year from receipt. Parts not manufactured by Sterlitech are covered by their manufacturer's warranties, which are normally for one year.

For Sterlitech skids and systems, material compatibility with liquids is not covered by warranty. The end user is responsible for ensuring compatibility due to variable factors, such as the processing fluids used, operating conditions, and cleaning procedures.

The manufacturer's and seller's only obligation shall be to issue credit against the purchase or replacement of equipment proved to be defective in material or workmanship. Neither manufacturer nor seller shall be liable for any injury, loss or damage, direct or indirect, special or consequential, arising out of the use of, misuse, or the inability to use such product.

The information contained herein is based on technical data and tests, which we believe to be reliable, and is intended for use by persons having technical skill at their discretion and risk. Since conditions of use are outside Sterlitech's control, we can assume no liability whatsoever for results obtained or damages incurred through the application of the data presented.

This information is not intended as a license to operate under, or a recommendation to infringe upon, any patent of Sterlitech or others covering any material or use.

The foregoing may not be altered except by a written agreement signed by officers of the manufacturer.

Technical Assistance

Please contact us if you have any questions or technical inquiries about our products.

Call Sterlitech Corporation at **1-877-544-4420** or email sales@sterlitech.com.

Company Background

Founded in 2001 in Kent, WA, Sterlitech Corporation manufactures and markets filtration-focused laboratory products to a broad spectrum of scientific and industrial sectors. Its line of flat sheet membranes and tangential flow cells deliver industry-leading performance reliable results. Configured for reverse osmosis, nanofiltration, ultrafiltration, and microfiltration applications, Sterlitech's benchtop cross flow membrane test system provides the versatility required to innovate.

Sterlitech's comprehensive line of products is supported by the expertise of its technical specialists who can assist with application-specific product selection, and provide customized solutions where necessary. Unique problem-solving approaches, flexibility, and consistent quality have made Sterlitech Corporation a renowned global provider of filtration products and equipment.

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