

# Rotary Impeller Mixing Assemblies



## Single-Use Mixing Reinvented for Real-World Compatibility

Meissner offers a comprehensive suite of single-use mixing technologies, including our Saltus® M200 mixing platform, FlexFill® and QuaDrum® based gentle recirculation assemblies, and our FlexGro® rocker-style assemblies. To support manufacturers seeking alternatives compatible with existing mixing installations, we've expanded our portfolio to include mixing assemblies engineered to retrofit leading magnetic and levitating impeller platforms — including widely installed solutions like Millipore's Mobius® MIX.

Our Rotary Impeller Mixing Solutions (RMS) are developed to integrate seamlessly into your existing mixing infrastructure — with biocontainer assemblies designed to fit your current tanks and connect directly to associated drive units. Whether replacing or augmenting original supply, RMS provides a drop-in solution that maintains critical process parameters while reducing risk associated with single-source dependencies. This approach showcases Meissner's commitment to manufacturing continuity, system compatibility, and long-term supply assurance.

All RMS assemblies are constructed with Meissner's high-performance TepoFlex® multi-layer polyethylene film — engineered for strength, purity, and durability. Free from slip agents and exhibiting ultra-low extractables, TepoFlex® delivers consistent performance with exceptional quality. The RMS portfolio continues to expand in compatibility with third-party platforms. For current options, visit [www.meissner.com/rotary-impeller-mixing](http://www.meissner.com/rotary-impeller-mixing), or contact Meissner directly.

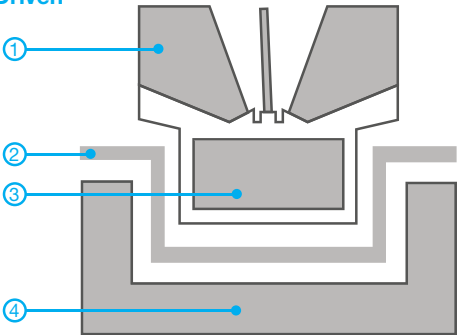




## Platform Compatibility

Meissner’s RMS mixing program continues to expand in scope in terms of compatibility with third-party mixing platforms. A compatibility summary is provided in the table below. Contact your Meissner sales representative for the most recent developments and program expansions.

| RMS Compatibility | Nominal Mixer Volume | Standard Working Volume | Technology                                                                                                                                                     |
|-------------------|----------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mobius® MIX       | 100 L                | 9 - 100 L               | <b>Levitating, Externally Driven</b><br><br>Levitating Impeller ①<br><br>Impeller Seat ②<br>Internal Magnet ③<br><br>Externally Driven Electromagnetic Drive ④ |
|                   | 200 L                | 23 - 200 L              |                                                                                                                                                                |
|                   | 500 L                | 26 - 500 L              |                                                                                                                                                                |





# Assembly Configurations

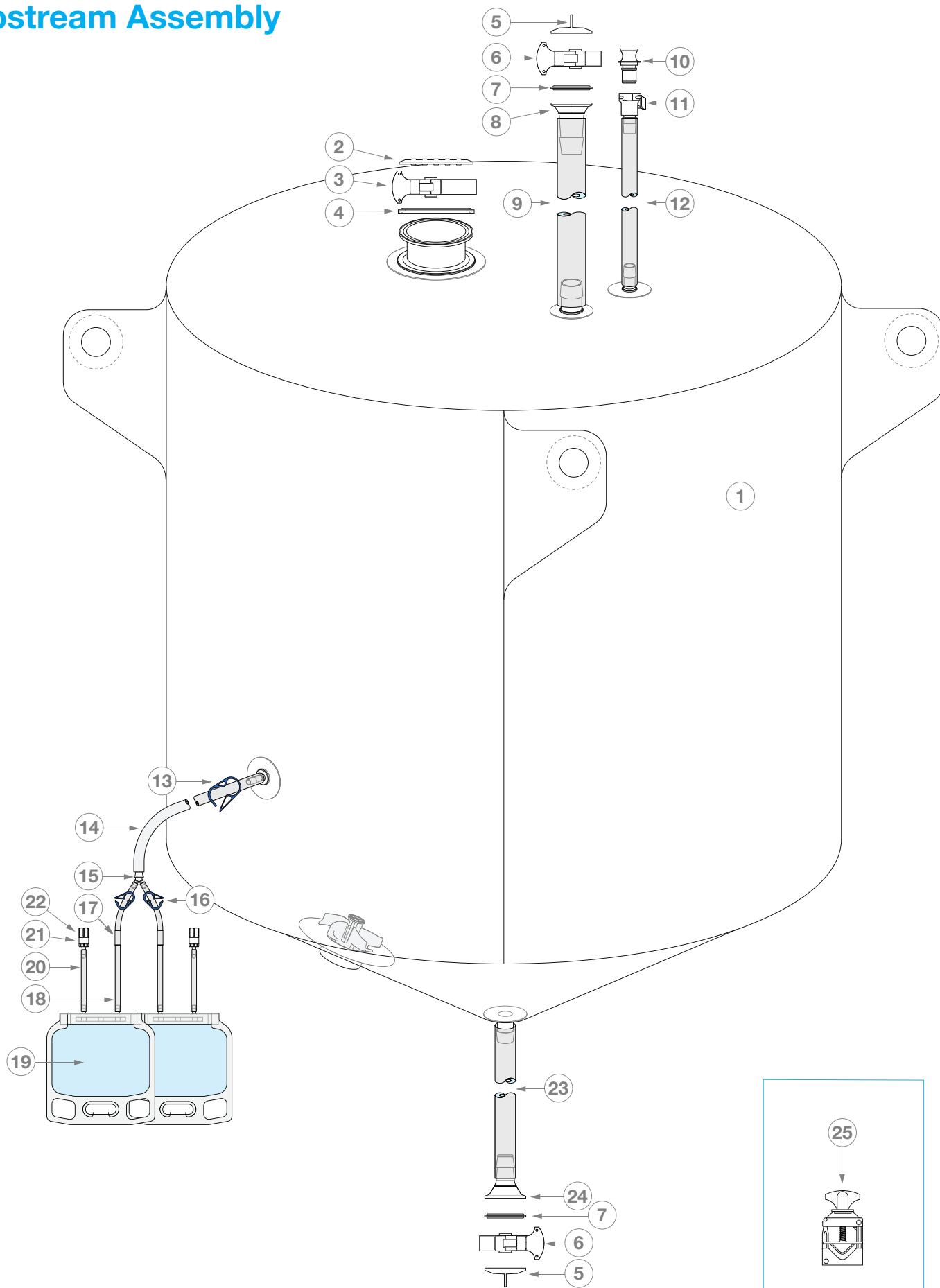
Meissner offers standard RMS mixing assembly configurations that are representative of typical upstream and downstream applications, as well as offering customization options for your unique process.

## Upstream Applications

### Bill of Materials - Representative of RMS6109B-N00-C0600-01

| ITEM | DESCRIPTION                                      | MATERIAL               | QTY |
|------|--------------------------------------------------|------------------------|-----|
| 1    | 200 L TepoFlex® Mixing Biocontainer              | TepoFlex®              | 1   |
| 2    | 3" TC Blind Cap                                  | Polypropylene          | 1   |
| 3    | 3" TC Clamp                                      | Polyketone             | 1   |
| 4    | 3" TC Gasket                                     | Platinum Silicone      | 1   |
| 5    | 1 1/2" TC Blind Cap                              | Polypropylene          | 2   |
| 6    | 1 1/2" TC Clamp                                  | Polyketone             | 2   |
| 7    | 1 1/2" TC Gasket                                 | Platinum Silicone      | 2   |
| 8    | 1" HB x 1-1/2" TC Adapter                        | Polypropylene          | 1   |
| 9    | 1" x 1-3/8" Pharma-50 Tubing, 36" Length         | Platinum Silicone      | 1   |
| 10   | Sealing Plug, MPX                                | Polycarbonate          | 1   |
| 11   | Coupling Body, 1/2" HB, MPX                      | Polycarbonate          | 1   |
| 12   | 1/2" x 3/4" Pharma-50 Tubing, 36" Length         | Platinum Silicone      | 1   |
| 13   | Ratchet Pinch Clamp, Medium                      | Polypropylene          | 1   |
| 14   | 1/4" x 7/16" Pharma-50 Tubing, 6" Length         | Platinum Silicone      | 1   |
| 15   | 1/4" x 1/8" x 1/8" HB Y-Fitting                  | Polypropylene          | 1   |
| 16   | Ratchet Pinch Clamp, Small                       | Polypropylene          | 2   |
| 17   | Aseptic Pinch Pipe Disconnecter                  | Metal Alloy            | 2   |
| 18   | 1/8" x 1/4" M-Flex® Tubing, 6" Length            | TPE                    | 2   |
| 19   | 50 mL End-Ported Biocontainer                    | TepoFlex®              | 2   |
| 20   | 1/8" x 1/4" M-Flex® Tubing, 3" Length            | TPE                    | 2   |
| 21   | 1/8" HB Swabable Valve/Needleless Injection Site | Polycarbonate/Silicone | 2   |
| 22   | Male Luer Cap                                    | Polycarbonate          | 2   |
| 23   | 3/4" x 1" Pharma-50 Tubing, 60"                  | Platinum Silicone      | 1   |
| 24   | 3/4" HB x 1-1/2" TC Adapter                      | Polypropylene          | 1   |
| 25   | Heavy Duty Tubing Clamp, Large                   | Nylon                  | 1   |

# Upstream Assembly



## Downstream Applications

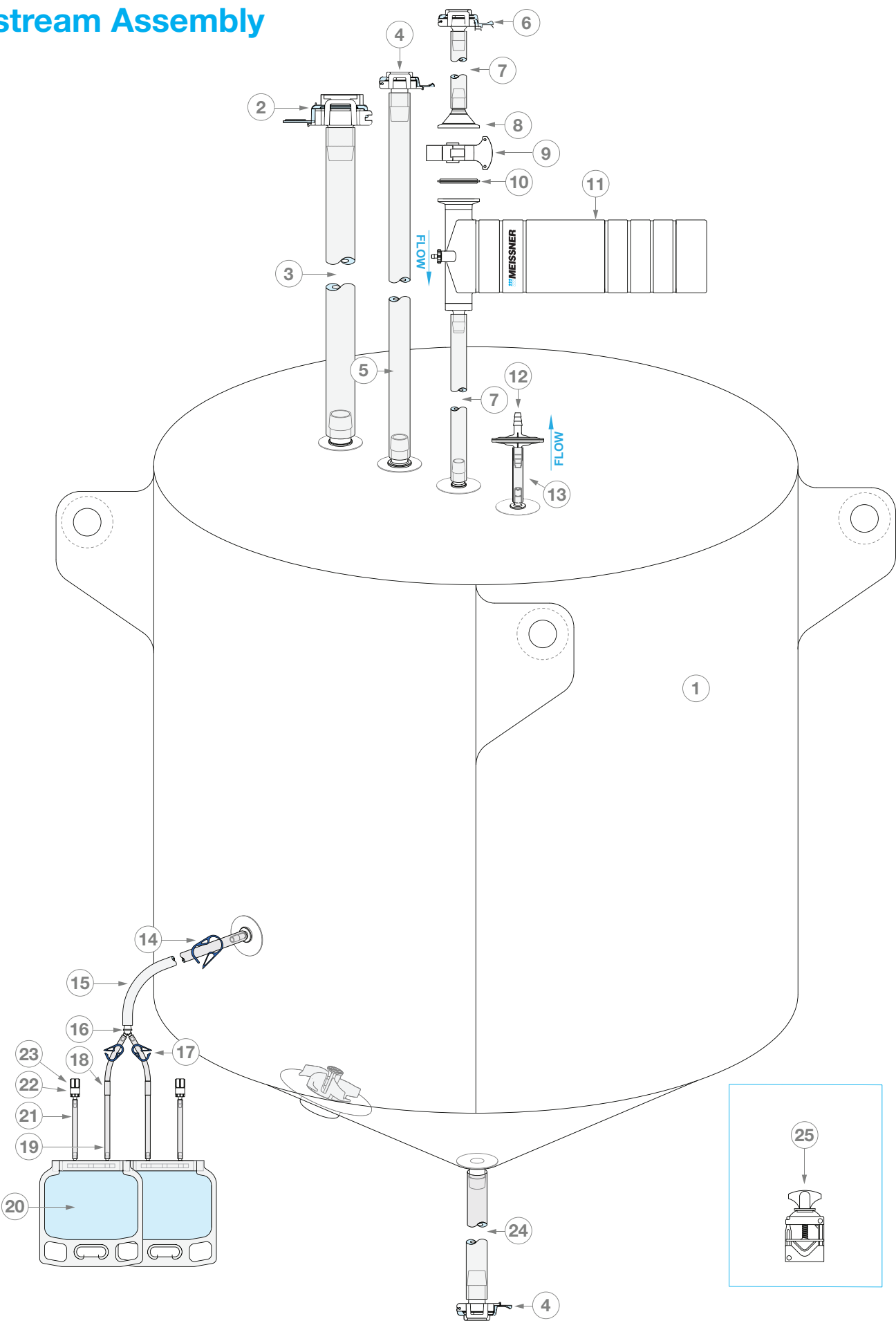
### Bill of Materials - Representative of RMS7109B-V02-C0600-01

| ITEM | DESCRIPTION                                      | MATERIAL               | QTY |
|------|--------------------------------------------------|------------------------|-----|
| 1    | 200 L TepoFlex® Mixing Biocontainer              | TepoFlex®              | 1   |
| 2    | Aseptic Connector, 1" HB, AseptiQuik® L          | Polypropylene          | 1   |
| 3    | 1" x 1 3/8" Pharma-50 Tubing, 36" Length         | Platinum Silicone      | 1   |
| 4    | Aseptic Connector, 3/4" HB, AseptiQuik® G        | Polycarbonate          | 2   |
| 5    | 3/4" x 1" Pharma-50 Tubing, 36" Length           | Platinum Silicone      | 1   |
| 6    | Aseptic Connector, 1/2" HB, AseptiQuik® G        | Polycarbonate          | 1   |
| 7    | 1/2" x 3/4" Pharma-50 Tubing, 12" Length         | Platinum Silicone      | 2   |
| 8    | 1/2" HB x 1-1/2" TC Adapter                      | Polypropylene          | 1   |
| 9    | 1 1/2" TC Clamp                                  | Polyketone             | 1   |
| 10   | 1 1/2" TC Gasket                                 | Platinum Silicone      | 1   |
| 11   | Meissner UltraCap® H.D. Filter                   | PP/SteriLUX®           | 1   |
| 12   | Meissner 50 mm Filter                            | PP/Steridyne®          | 1   |
| 13   | 1/4" x 7/16" Pharma-50 Tubing, 4" Length         | Platinum Silicone      | 1   |
| 14   | Ratchet Pinch Clamp, Medium                      | Polypropylene          | 1   |
| 15   | 1/4" x 7/16" Pharma-50 Tubing, 6" Length         | Platinum Silicone      | 1   |
| 16   | 1/4" x 1/8" x 1/8" HB Y-Fitting                  | Polypropylene          | 1   |
| 17   | Ratchet Pinch Clamp, Small                       | Polypropylene          | 2   |
| 18   | Aseptic Pinch Pipe Disconnecter                  | Metal Alloy            | 2   |
| 19   | 1/8" x 1/4" M-Flex® Tubing, 6" Length            | TPE                    | 2   |
| 20   | 50 mL End-Ported Biocontainer                    | TepoFlex®              | 2   |
| 21   | 1/8" x 1/4" M-Flex® Tubing, 3" Length            | TPE                    | 2   |
| 22   | 1/8" HB Swabable Valve/Needleless Injection Site | Polycarbonate/Silicone | 2   |
| 23   | Male Luer Cap                                    | Polycarbonate          | 2   |
| 24   | 3/4" x 1" Pharma-50 Tubing, 60"                  | Platinum Silicone      | 1   |
| 25   | Heavy Duty Tubing Clamp, Large                   | Nylon                  | 1   |

## Customization Options

Mixing biocontainers can be fitted with customer-specified porting, tubing lengths, connectors, end fittings, and dip tubes to accommodate your process requirements. Our Applications Engineering team can assist both in the customization of a mixing assembly for your specific needs and in the overall optimization of designs surrounding your mixing process.

# Downstream Assembly



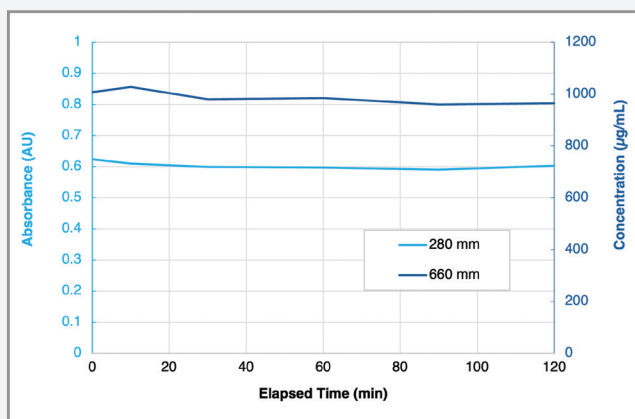
# Mixing Performance

As part of qualifying our RMS mixing assemblies, homogeneity and shear data has been generated to demonstrate mixing performance. Data specific to Mobius® MIX platform compatible RMS mixing assemblies is provided below, and additional mixing qualification data is available upon request.

## Implementation Support

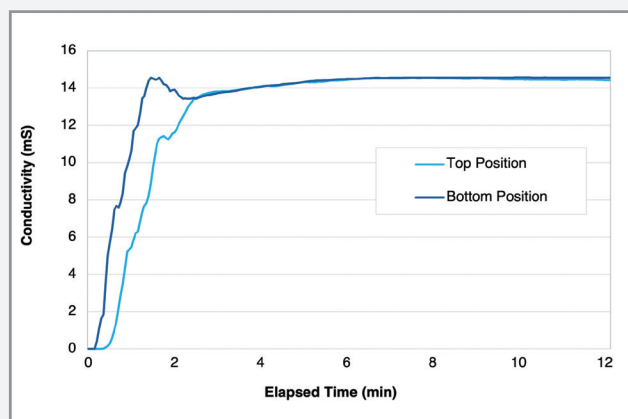
Our cross-functional RMS program team is available to assist with your end-to-end mixing needs. To supplement currently available homogeneity and shear study data for assistance with adoption in critical applications, Meissner can support the generation of process-specific data through supplying prototypes for running pre-established assays at customer sites or by performing in-house studies through our Meissner Technical Services (MTS) Team. These studies can analyze performance specific to your application and address any additional mixing performance Critical Quality Attributes, such as particulate generation, required for qualification.

**Protein Degradation**



*Worst case conditions (23 L minimum working volume and 500 RPM) were used to assess shear for a solution of a mg/mL BSA in 0.004% PS 80 + 0.01M PBS. Absorbance and protein concentration was determined using UV-Vis at 280 and 660 nm.*

**Homogeneity**



*Homogeneity was assessed by comparing conductivity at the top and bottom for 200 L of fluid within an RMS mixing assembly upon addition of 1X PBS. At 500 RPM, complete mixing is achieved as shown by strong convergence of conductivity readings just after 2 minutes.*

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