



Monoclonal Antibodies (mAbs)
2000 L 2.5 g/L Platform
AcceleratorSM Integrated Solutions



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Illustrations and recommendations are based upon a typical process and may be subject to change based upon your individual process requirements.

1. Cell Seeding

Cells taken from the working cell bank are typically cultured in a number of bioreactors with ever-increasing volumes before being transferred to the target volume production bioreactor. A well-optimized and intensified seed train can accelerate this process and increase productivity. A series of well-characterized (N-1 / N-2) bioreactors facilitate this process and are as critical to the overall productivity as the final production bioreactor.

Equipment

Allegro™ STR Single-Use Stirred Tank Bioreactors

The Allegro STR bioreactor family combines Pall's bioprocess engineering expertise, cell culture know-how and our drive for quality into a series of single-use bioreactors that deliver consistent and scalable cell culture performance across the range.

Part Number (PN): STR200-230W, STR50-230W-R-SU

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Input

Allegro® 2D Standard Systems
PN: 7190-1397N, 7190-1397P,
7190-1397S

Allegro 3D Standard Systems
PN: 7190-1374W, 7190-1376R

Allegro Bioprocessing Workstations
PN: LGRTBDC, LGRTSDC, LGRTDCPE,
LGRTPPE20L, LGRTLPE20L, LGRTRDC

Allegro Plastic Totes
PN: LGRPTTE50L, LGRTTBSC,
LGRPTTE200L, LGRPTRL200L,
LGRPTTEL200L

Allegro XRS 25 Bioreactor System
PN: XRS25BRS, XRS25FAT,
XRS25IVOV, 609-40A

Transfer Sets
PN: 7292-1516N, 7292-1381X,
7292-1380Y

Output

Transfer Sets
PN: 7292-1380Y, 7292-1381X



Supporting

Allegro STR Bioreactor Biocontainer Bag
PN: 6412-0726H, 6412-0473Q

mPath™ Benchtop Bioreactor Control Towers
PN: MPATHLINK-LT

Temperature Control Unit
PN: TCU-V2000A-NRTL

2. Cell Culture

Additional resources 

Historically, blockbuster drugs based on mAbs have been produced in multiple, multi-thousand-liter stainless steel stirred tank production bioreactors. Increased culture titers and intensified processes mean that an increasing number of products can be produced in multiple 2000 L bioreactors. These working volumes are within the capability of single-use and enable manufacturers to access the benefits of single-use at a commercially significant scale.

Equipment

Allegro STR Single-Use Stirred Tank Bioreactor

The family of Allegro STR bioreactors maintain ease-of-use across all scales, making the final production bioreactor as simple to install and operate as the rest of the seed train.

PN: STR2000-230W

[Discover more](#)



Input

Allegro 3D Standard Systems
PN: 7190-1377B, 7190-1376V,
7190-1374W, 7190-1374Y

Allegro Plastic Totes
PN: LGRPTTE50L, LGRTTBSC,
LGRTE1500L, LGRPTTE200L,
LGRPTRL200L, LGRPTTEL200L,
LGRPTTE1000L, LGRTRLPT1000L,
LGRPTTEL1000L

Transfer Sets
PN: 7292-1381X, 7292-1380Y



Supporting

Allegro STR Bioreactor Biocontainer Bag
PN: 609-110U

Temperature Control Unit
PN: TCU-V10000W-NRTL



When viewing on desktop roll over product name to view more

3. Clarification

Additional resources 

The removal of cells, cell debris, and other insoluble impurities during harvest is critical to protect downstream processes and reduce biological burden as much as possible. Depth filtration is an economic, flexible and scalable technology to clarify the harvested cell culture fluid. Low yields can be a challenge in this step and a carefully selected filtration train can minimize filter sizes while also delivering robust performance. Our experienced technical team can help you achieve high throughput and yield by optimizing protocols and parameters for this step, in addition to selecting the best filter materials and size.

Equipment

Stax™ mAx Clarification Modules

The Stax mAx clarification platform is a single-use, robust, depth filtration solution for the economic clarification of mAb cell cultures without the need for centrifugation or process additives.

PN: 7008442

[Discover more](#)



Input

Allegro 3D Stainless Steel Totes
PN: LGR3000BASE, LGR3000EXT,
LGR3000HOIST, LGR3000STAND

Allegro 3D Standard Systems
PN: 7190-1374U

Allegro Connect Buffer
Management System
PN: ACBMSEUPLC, ACBMSWS,
ACBMSFSK, ACBMSFT, 6431-1457D

Transfer Sets
PN: 7292-1380Y, 7292-1381X,
7292-1381A, 7292-1381M, 7291-1380V



Supporting

Allegro MVP Single-Use System
PN: 9430-1413S, 9430-1416M, 9430-1419Y,
LGRMVPAPE

Stax mAx Clarification Chassis
PN: SXPSC10W, 7008225, 7008224

Output

Magnetic Mixer
PN: MMG403, 7404-1443D,
LM3000JCTA-B4N

Transfer Sets
PN: 7292-1381D

Supor® EAV Membrane in
Kleenpak™ Capsules
PN: 7090-1401N

Transfer Sets
PN: 7291-1381B

4. Affinity Chromatography

Affinity chromatography separates the target antibodies on the basis of a reversible interaction with a specific ligand bound to a base matrix. The selection of the optimal resin is key and, when managed by a suitable automated chromatography system, can deliver consistently high purity and yield.

Equipment

ÄKTA ready[†] Single-Use System

ÄKTA ready is a single-use liquid chromatography system built for process scale-up and manufacturing. The systems use disposable flow paths and prepacked columns that enable both flexibility and speed in bioprocessing.



Input

Allegro 3D Standard Systems
PN: 7190-1374Y, 7190-1374W

Allegro Connect Buffer Management System
PN: ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D, 6431-1457D

Allegro Plastic Totes
PN: LGRITBSC, LGRPTE50L, LGRPTE200L, LGRPTRL200L, LGRPTEL200L

Magnetic Mixer
PN: MMG403, 7404-1443D, LM3000JCTA-B4N

Transfer Sets
PN: 7292-1399Y, 7292-1381M, 7292-1381L

Output

Magnetic Mixer
PN: LM400NCMA-B4N, MMG403, 7404-1401T

Transfer Sets
PN: 7292-1381L, 7292-1399Y, 7291-1381E

Supporting

Transfer Sets
PN: 7291-1399Y

ÄKTA ready Flow Kit

UNICORN[†] Workstation License



5. Virus Inactivation

The control of potential viral contaminants is critical to ensuring the safety of mAb therapeutics. Low pH-based inactivation methods are commonly applied downstream of affinity chromatography taking advantage of the low pH elution conditions of affinity chromatography. There are several factors that can impact the robustness of this step, including exposure time, pH range, protein concentration and temperature, and careful flow control is required to deliver the expected virus reduction.

Equipment

Supor EKV Sterilizing-Grade Filter Cartridges

Validated sterilizing grade membranes for the most cost-effective filtration of a wide range of liquids such as buffers, tissue culture media, and others.

PN: 7090-1437U

[Discover more](#)



Input

Allegro 3D Standard Systems
PN: 7190-1374W

Allegro Connect Buffer Management System
PN: ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D

Allegro Plastic Totes
PN: LGRITBSC, LGRPTE50L

Magnetic Mixer
PN: LM400NCMA-B4N, MMG403, 7404-1401T

Transfer Sets
PN: 7292-1381X, 7292-1381M

Output

Magnetic Mixer
PN: LM650NCMA-B4N, MMG403, 7404-1452E

Transfer Sets
PN: 7292-1381X

Supporting

Allegro MVP Single-Use System
PN: LGRMVPAPE, 9430-1413G, 9430-1413Q

6. CEX Chromatography

Additional resources 

Cation exchange (CEX) chromatography further purifies the process intermediate achieving separation from process contaminants based upon charge differences. These operations can be performed in bind-elute or flow-through modes and are best managed using an automated chromatography system to achieve consistent performance.

Equipment

ÄKTA ready Single-Use System

ÄKTA ready is a fully automated liquid chromatography system for process scale-up and production. The system operates with ready-to-use, disposable flow paths that are available in high and low flow kits.



Input

Allegro 3D Standard Systems
PN: 7190-1376T, 7190-1374Y,
7190-1374W

Allegro Connect Buffer
Management System
PN: ACBMSEUPLC, ACBMSWS,
ACBMSFSK, ACBMSFT, 6431-1457D

Allegro Plastic Totes
PN: LGRPTTE200L, LGRPTRL200L,
LGRPTEL200L, LGRPTTE500L,
LGRPTRL500L, LGRPTEL500L,
LGRPTTE50L, LGRTTBSC

Magnetic Mixer
PN: LM650NCMA-B4N, MMG403,
7404-1452E

Transfer Sets
PN: 7292-1381L, 7292-1399Y,
7292-1381M

Output

Magnetic Mixer
PN: LM400NCMA-B4N, MMG403,
7404-1401T

Transfer Sets
PN: 7292-1381L, 7292-1399Y, 7291-1381E



Supporting

Transfer Sets
PN: 7291-1399Y

Gradient Section: ÄKTA ready Flow Kit

ÄKTA ready Flow Kit

UNICORN Workstation License

7. AEX Chromatography

Anion exchange (AEX) using membrane chromatography may be incorporated to help remove residual host cell protein (HCP) and DNA, and assist with virus clearance to achieve a highly purified process intermediate.

Equipment

ÄKTA ready[†] Single-Use System

The system is part of the ReadyToProcess[†] platform, a suite of plug-and-play, ready-to-use solutions for bioprocessing. The system operates with ready-to-use, disposable flow paths that are available separately in high and low flow kits.



Input

Allegro 3D Standard Systems
PN: 7190-1374Y

Allegro Connect Buffer
Management System
PN: ACBMSEUPLC, ACBMSWS,
ACBMSFSK, ACBMSFT, 6431-1457D

Allegro Plastic Totes
PN: LGRPTTE200L, LGRPTTL200L,
LGRPTTEL200L, LGRTTBSC,
LGRPTTE50L

Magnetic Mixer
PN: LM400NCMA-B4N, MMG403,
7404-1401T

Transfer Sets
PN: 7292-1381X, 7292-1469E,
7292-1381L, 7292-1399Y, 7292-1381M



Supporting

Transfer Sets
PN: 7291-1399Y

ÄKTA ready Flow Kit

UNICORN Workstation License

Output

Magnetic Mixer
PN: LM400NCMA-B4N, MMG403,
7404-1401T

Supor EKV Sterilizing-Grade
Filter Cartridges
PN: 7090-1438D

Transfer Sets
PN: 7292-1381L, 7292-1399Y, 7291-1381E

8. Virus Filtration

Orthogonal to virus inactivation and reductions achieved during chromatographic processes, virus filtration provides a robust, size-based reduction of virus and typically adds >4 log of virus clearance to control product safety.

Equipment

Pall Filter Cartridges and Kleenpak Nova Capsules with Pegasus™ Protect Virus Prefilter Membrane or Pegasus Prime Virus Removal Filter Membrane

Pegasus Protect virus prefiltration combines with Pegasus Prime virus filtration to deliver the first gamma-sterilized pre-filter and virus filter combination. Together, these simplify process development, validation and operations while saving time and delivering improved process economy.



Input

Allegro Connect Buffer Management System
PN: ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D

Magnetic Mixer
PN: LM400NCMA-B4N, MMG403, 7404-1401T

Supor EKV Sterilizing-Grade Filter Cartridges
PN: 7090-1438D

Transfer Sets
PN: 7292-1381X, 7292-1469E, 7292-1381M



Supporting

Allegro MVP Single-Use System
PN: LGRMVPAD, 9430-1413C, 9461-1369H, 9430-1413Q

Palltronic® Flowstar V Filter Integrity Test Instrument
PN: FFS05

Output

Magnetic Mixer
PN: LM650NCMA-B4N, MMG403, 7404-1452E

Transfer Sets
PN: 7292-1381X

9. Concentration

Additional resources 

Concentration and diafiltration using ultrafiltration (UF) membranes further concentrates the target molecule and exchanges buffers ready for final formulation. Achieving high yield is a common challenge, but our technical experts can work with you to optimize this unit operation.

Equipment

ÄKTA readyflux[†] XL Filtration System

ÄKTA readyflux XL system supports a broad flow-rate range and combines a single-use flowpath with a low hold-up volume to minimize cross-contamination and maximize yields. Multiple filtration-control features provide versatility for use in all ultrafiltration operations.



Input

Allegro 3D Standard Systems
PN: 7190-1374W, 7190-1376V

Allegro Connect Buffer Management System
PN: ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D

Allegro Plastic Totes
PN: LGRPTTEI000L, LGRTRLPT1000L, LGRPTELI000L, LGRTTBSC, LGRPTTE50L

Magnetic Mixer
PN: LM650NCMA-B4N, MMG403, 7404-1452E

Transfer Sets
PN: 7292-1381A, 7291-1380V, 7292-1381M



Supporting

Cadence[®] Single-Use Tangential Flow Filtration (TFF) Modules
PN: CSUM010T250, 7443-1437P

LevMixer[®] System
PN: LM100NCMA-B4N, LMG403, 7403-1351N

Transfer Sets
7292-1381A

Output

LevMixer System
PN: LM50NCMA-B4N, LMG403, 7403-1350S

Transfer Sets
PN: 7291-1380V, 7090-1388D, 7292-1381X

10. Bulk Filtration

The final stage of manufacture demands the highest levels of process security to safeguard valuable, highly purified drug substance. Sterilizing-grade (0.2 µm) filtration, coupled with pre-sterilized fluid handling solutions, eliminate bioburden prior to storage, freezing and shipment to fill finish operations.

Equipment

Palltronic Flowstar V Filter Integrity Test Instrument

The Palltronic Flowstar V integrity test instrument ensures accurate filter integrity testing with a further reduction in test time, full compliance with 21 CFR Part 11, advanced automation capabilities, and simplified network integration, saving the user time while improving process efficiency.

PN: FFS05

[Discover more](#)



Input

Allegro Bioprocessing Workstations
PN: LGRTBDC, LGRTEDC

Allegro Connect Buffer Management System
PN: ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D

Allegro Plastic Totes
PN: LGRTEW200L, LGRPTTE50L, LGRTTBSC

LevMixer System
PN: LM50NCMA-B4N, LMG403, 7403-1350S

Transfer Sets
PN: 7292-1381X, 7292-1381M



Supporting

Allegro MVP Single-Use System
PN: LGRBULKFILL, 9494-1446H, 9494-1446K, 9494-1446L, 9494-1446M, 9494-1446N

Supor EKV Sterilizing-Grade Filter Cartridges
PN: 7090-1437Y

Output

Allegro 2D Standard Systems
PN: 7190-1397P, 7190-1454N

Allegro 3D Standard Systems
PN: 7190-1374W

Emflon® II Membrane in Kleenpak Capsule
PN: 7090-1388M

Transfer Sets
PN: 7292-1381X

Pall® Freeze & Go Solutions Protected by RoSS® technology

Additional Resources

Process Description	Format	Title	Link
Cell Culture	Poster	Engineering Characterization of the Allegro Stirred Tank Reactors For Successful Cell Culture Scale-Up	▶
Cell Culture	Application Note	Scalability Between the Allegro STR 50 and STR 500 Bioreactors in a CHO-S Fed-Batch Process	▶
Cell Culture	Application Note	Cultivation of CHO Cells in Allegro STR 200 Single-Use Stirred Tank Bioreactor System	▶
Clarification	Guide	Cell Harvesting Guide	▶
AEX Chromatography	Application Note	Contaminant Removal by Mustang® Q Membrane Chromatography from a Protein A Purified Monoclonal Antibody	▶
AEX Chromatography	Application Note	Implementation of Mustang Q Membrane Chromatography as a Polishing Step (Residual DNA Removal) in Monoclonal IgG1 Production from CHO Cell Culture	▶
Virus Filtration	Application Note	Filterability Testing and Virus Challenge of Pall Minidisc Capsules with Pegasus SV4 Virus Removal Filter Membrane	▶
Virus Filtration	Application Note	Validating Pegasus Prime Filters: What Virus Spike Should I Use?	▶
Concentration	Application Note	Volume Reduction and Process Optimization with Cadence Inline Concentrator	▶
Concentration	White Paper	Understanding Single-Pass Tangential Flow Filtration and the New Era of Bioprocessing	▶

Equipment List

Step No.	Process Description	Product	Part Number	Link
1	Cell Seeding	Allegro STR Bioreactor Biocontainer Bag	6412-0726H, 6412-0473Q	▶
1	Cell Seeding	Allegro 2D Standard Systems	7190-1397N, 7190-1397P, 7190-1397S	▶
1	Cell Seeding	Allegro 3D Standard Systems	7190-1374W, 7190-1376R	▶
1	Cell Seeding	Allegro Bioprocessing Workstations	LGRTBDC, LGRTSDC, LGRTDCPE, LGRTPE20L, LGRTLPE20L, LGRTRDC	▶
1	Cell Seeding	Allegro Plastic Totes	LGRPTTE50L, LGRTTBSC, LGRPTTE200L, LGRPTTL200L, LGRPTTEL200L	▶
1	Cell Seeding	Allegro STR Single-Use Stirred Tank Bioreactors	STR200-230W, STR50-230W-R-SU	▶
1	Cell Seeding	Allegro XRS 25 Bioreactor System	XRS25BRS, XRS25FAT, XRS25IVOV, 609-40A	▶
1	Cell Seeding	mPath Benchtop Bioreactor Control Towers	MPATHLINK-LT	▶
1	Cell Seeding	Temperature Control Unit	TCU-V2000A-NRTL	
1	Cell Seeding	Transfer Sets	7292-1516N, 7292-1381X, 7292-1380Y	▶
2	Cell Culture	Allegro 3D Standard Systems	7190-1377B, 7190-1376V, 7190-1374W, 7190-1374Y	▶
2	Cell Culture	Allegro Plastic Totes	LGRPTTE50L, LGRTTBSC, LGRTEI500L, LGRPTTE200L, LGRPTTL200L, LGRPTTEL200L, LGRPTTE1000L, LGRTRLPT1000L, LGRPTTEL1000L	▶
2	Cell Culture	Allegro STR Bioreactor Biocontainer Bag	609-110U	▶
2	Cell Culture	Allegro STR Single-Use Stirred Tank Bioreactor	STR2000-230W	▶
2	Cell Culture	Temperature Control Unit	TCU-V10000W-NRT	
2	Cell Culture	Transfer Sets	7292-1381X, 7292-1380Y	▶
3	Clarification	Allegro 3D Stainless Steel Totes	LGR3000BASE, LGR3000EXT, LGR3000HOIST, LGR3000STAND	▶
3	Clarification	Allegro 3D Standard Systems	7190-1374U	▶
3	Clarification	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D	▶
3	Clarification	Magnetic Mixer	MMG403, 7404-1443D, LM3000JCTA-B4N	▶
3	Clarification	Allegro MVP Single-Use System	9430-1413S, 9430-1416M, 9430-1419Y, LGRMVPAPE	▶
3	Clarification	Stax mAx Clarification Chassis	SXPSC10W	▶
3	Clarification	Stax mAx Clarification Plate	7008225, 7008224	▶
3	Clarification	Stax mAx Clarification Module	7008442	▶
3	Clarification	Supor EAV Membrane in Kleenpak Capsules	7090-1401N	▶

Equipment List

Step No.	Process Description	Product	Part Number	Link
3	Clarification	Transfer Sets	7292-1380Y, 7292-1381X, 7292-1381A, 7292-1381M, 7291-1380V, 7292-1381D, 7291-1381B	▶
4	Affinity Chromatography	ÄKTA ready Low Flow Kit	28930182	
4	Affinity Chromatography	ÄKTA ready Single-Use System	29032038 (gradient system) 28906261	
4	Affinity Chromatography	Allegro 3D Standard Systems	7190-1374Y, 7190-1374W	▶
4	Affinity Chromatography	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D, 6431-1457D	▶
4	Affinity Chromatography	Allegro Plastic Totes	LGRTTBSC, LGRPTTE50L, LGRPTTE200L, LGRPTRL200L, LGRPTTEL200L	▶
4	Affinity Chromatography	Magnetic Mixer	MMG403, 7404-1443D, LM3000JCTA-B4N, LM400NCMA-B4N, 7404-1401T	▶
4	Affinity Chromatography	Transfer Sets	7292-1399Y, 7292-1381M, 7292-1381L, 7291-1381E, 7291-1399Y	▶
4	Affinity Chromatography	UNICORN Workstation License	29128116	
5	Virus Inactivation	Allegro 3D Standard Systems	7190-1374W	▶
5	Virus Inactivation	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D	▶
5	Virus Inactivation	Allegro MVP Single-Use System	LGRMVPAPE, 9430-1413G, 9430-1413Q	▶
5	Virus Inactivation	Allegro Plastic Totes	LGRTTBSC, LGRPTTE50L	▶
5	Virus Inactivation	Magnetic Mixer	LM400NCMA-B4N, MMG403, 7404-1401T, LM650NCMA-B4N, 7404-1452E	▶
5	Virus Inactivation	Supor EKV Sterilizing-Grade Filter Cartridges	7090-1437U	▶
5	Virus Inactivation	Transfer Sets	7292-1381X, 7292-1381M	▶
6	CEX Chromatography	AKTA ready Flow Kit	29021086, 28930182	
6	CEX Chromatography	ÄKTA ready Single-Use System	29032038 (gradient system) 28906261	
6	CEX Chromatography	Allegro 3D Standard Systems	7190-1376T, 7190-1374Y, 7190-1374W	▶
6	CEX Chromatography	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D	▶
6	CEX Chromatography	Allegro Plastic Totes	LGRPTTE200L, LGRPTRL200L, LGRPTTEL200L, LGRPTTE500L, LGRPTRL500L, LGRPTTEL500L, LGRPTTE50L, LGRTTBSC	▶

Equipment List

Step No.	Process Description	Product	Part Number	Link
6	CEX Chromatography	Magnetic Mixer	LM650NCMA-B4N, MMG403, 7404-1452E, LM400NCMA-B4N, 7404-1401T	▶
6	CEX Chromatography	Transfer Sets	7292-1381L, 7292-1399Y, 7292-1381M, 7291-1381E, 7291-1399Y	▶
6	CEX Chromatography	UNICORN Workstation License	29128116	
7	AEX Chromatography	ÄKTA ready Flow Kit	28930182	
7	AEX Chromatography	ÄKTA ready Single-Use System	29032038 (gradient system) 28906261	
7	AEX Chromatography	Allegro 3D Standard Systems	7190-1374Y	▶
7	AEX Chromatography	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D	▶
7	AEX Chromatography	Allegro Plastic Totes	LGRPTTE200L, LGRPTRL200L, LGRPTTEL200L, LGRTTBSC, LGRPTTE50L	▶
7	AEX Chromatography	Magnetic Mixer	LM400NCMA-B4N, MMG403, 7404-1401T	▶
7	AEX Chromatography	Supor EKV Sterilizing-Grade Filter Cartridges	7090-1438D	▶
7	AEX Chromatography	Transfer Sets	7292-1381X, 7292-1469E, 7292-1381L, 7292-1399Y, 7292-1381M	▶
7	AEX Chromatography	UNICORN Workstation License	29128116	
8	Virus Filtration	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D	▶
8	Virus Filtration	Allegro MVP Single-Use System	LGRMVPAD, 9430-1413C, 9461-1369H, 9430-1413Q	▶
8	Virus Filtration	Magnetic Mixer	LM400NCMA-B4N, MMG403, 7404-1401T, 7404-1452E	▶
8	Virus Filtration	Pall Filter Cartridges and Kleenpak Nova Capsules with Pegasus Protect Virus Prefilter Membrane or Pegasus Prime Virus Removal Filter Membrane		▶
8	Virus Filtration	Palltronic Flowstar V Filter Integrity Test Instrument	FFS05	▶
8	Virus Filtration	Supor EKV Sterilizing-Grade Filter Cartridges	7090-1438D	▶
8	Virus Filtration	Transfer Sets	7292-1381X, 7292-1469E, 7292-1381M	▶
9	Concentration	ÄKTA readyflux XL Flow Kit TriClamp	29609298	
9	Concentration	ÄKTA readyflux XL Filtration System	29593434	
9	Concentration	Allegro 3D Standard Systems	7190-1374W, 7190-1376V	▶
9	Concentration	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D	▶

Equipment List

Step No.	Process Description	Product	Part Number	Link
9	Concentration	Allegro Plastic Totes	LGRPTTE1000L, LGRTRLPT1000L, LGRPTTEL1000L, LGRTTBSC, LGRPTTE50L	▶
9	Concentration	C10 Manifold with TriClamp ready for ÄKTA readyflux TL	7445-1418W	
9	Concentration	Cadence Single-Use Tangential Flow Filtration (TFF) Modules	CSUM010T250, 7443-1437P	▶
9	Concentration	LevMixer System	LM50NCMA-B4N, LMG403, 7403-1350S, LM100NCMA-B4N, 7403-1351N	▶
9	Concentration	Magnetic Mixer	LM650NCMA-B4N, MMG403, 7404-1452E	▶
9	Concentration	Transfer Sets	7292-1381A, 7291-1380V, 7292-1381M, 7291-1380V, 7090-1388D, 7292-1381X	▶
9	Concentration	UNICORN Workstation License	29128116	
10	Bulk Filtration	Allegro 2D Standard Systems	7190-1397P, 7190-1454N	▶
10	Bulk Filtration	Allegro 3D Standard Systems	7190-1374W	▶
10	Bulk Filtration	Allegro Bioprocessing Workstations	LGRTBDC, LGRTEDC	▶
10	Bulk Filtration	Allegro Connect Buffer Management System	ACBMSEUPLC, ACBMSWS, ACBMSFSK, ACBMSFT, 6431-1457D	▶
10	Bulk Filtration	Allegro MVP Single-Use System	LGRBULKFILL, 9494-1446H, 9494-1446K, 9494-1446L, 9494-1446M, 9494-1446N	▶
10	Bulk Filtration	Allegro Plastic Totes	LGRTTEW200L, LGRPTTE50L, LGRTTBSC	▶
10	Bulk Filtration	Emflon II Membrane in Kleenpak Capsule	7090-1388M	▶
10	Bulk Filtration	LevMixer System	LM50NCMA-B4N, LMG403, 7403-1350S	▶
10	Bulk Filtration	Pall Freeze & Go Solutions Protected by RoSS technology	LGRFREEZE5L	▶
10	Bulk Filtration	Palltronic Flowstar V Filter Integrity Test Instrument	FFS05	▶
10	Bulk Filtration	Supor EKV Sterilizing-Grade Filter Cartridges	7090-1437Y	▶
10	Bulk Filtration	Transfer Sets	7292-1381X, 7292-1381M	▶

Scientific and Laboratory Services

The scientific and regulatory knowledge that supports the selection, adoption and ongoing use of critical process technology, coupled with analytical, imaging and measurement capabilities, creates a versatile and practical resource ready to respond to an ever-changing industry. Pall maintains these laboratories across the globe and leverages their collective knowledge to deliver practical scientific and regulatory support to all process technologies – to keep you moving forward.

Technical Services

The accessibility of local technical support networks minimizes delays in your journey at all points. From the early stage of process development to on-site support for mature processes, Pall's technical support groups are there to help remove barriers to progress and to make your journey as rapid and stress free as possible. Our knowledge of the technology and the process can be applied to everything from training to troubleshooting and consultancy. Our global team of technology experts is on hand to respond to your changing needs.

Advanced Separation Systems

Operating within the defined design space demands the monitoring and control of critical process parameters to assure product quality. Systems that control critical unit operations and that communicate with your existing process components can control process risks and maximize productivity by reducing operator involvement for many processes, Pall applies strong engineering and regulatory understanding to deliver compliant and qualified systems that safeguard and simplify your journey.

Process Development Services

Prior knowledge is a rare and valuable commodity, especially when preparing to take a new direction or when under pressure to deliver to a tight deadline. Take advantage of Pall's experience, process knowledge and technical know-how to help you achieve your goals. From the optimization of an end-to-end continuous process to establishing the right parameters for a single unit operation, our teams of scientists are ready to work with you and to generate the data you need to make the critical decisions necessary for success.

Validation Services

Arriving at your destination counts for nothing without the necessary paperwork to proceed to the next stage. Pall's Validation Services are committed to delivering the supporting data packages and analysis required to quantify process risk and to support regulatory submission. Our strengths include critical filtration technologies such as the performance validation of sterilizing grade filtration, and we are at the forefront of the evolving needs in the area of extractables and leachables for all product contact components. We combine the generation of data with interpretation and consultancy to deliver data packages that are ready for regulatory scrutiny and to ensure there are no barriers to progress.

Servicing and Maintenance

Our range of service packages keeps your equipment protected and well-maintained, and includes itemized pay-as-you-go services, start-up care and training packages and a variety of post-warranty service plans that include priority response times, discounts for emergency repairs and flexible payment options. Pall service plans provide total peace of mind and worry-free support throughout the coverage period.



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