

## NOWPak® Bottle System, NOWPak® Canister System, and Replacement Liner

*Liner-based system assembly with a pre-cleaned, one-ply, heat-sealed PTFE T650 liner, and replacement liner for bottles or canisters*

The NOWPak® liner-based bottle and canister systems are leading containment and dispense systems that help ensure that chemicals are protected throughout the filling, shipping, and dispensing operations. The system includes a container which is a flexible liner inside a rigid overpack, a package closure, and a variety of dispense connector options.

### APPLICATION

- NOWPak systems are designed for applications that require containment and safe transport of liquids that have high-purity requirements and/or are sensitive to the environment.
- The T650 PTFE liner is available in a 20-liter size for both the NOWPak liner-based bottle and canister systems, and in 18-, 40-, and 200-liter sizes for the NOWPak canister system. Target applications are high-purity solvents and solvent mixes for the laboratory and life sciences markets, but can be used in any larger scale application that requires the chemical resistance of PTFE.



*NOWPak 20-liter bottle system with temporary shipping cap, shown in amber color*

### FEATURES & BENEFITS

- Liners are particle tested and certified
- System dispenses chemical through a sealed pathway from liner to dispense tool, protecting chemical contents from external contamination
- Amber color HDPE overpacks contain a UV block additive to protect light-sensitive chemicals
- Collapsible liner system helps maximize chemical utilization
- Paired with the SmartCap™ or IntelliCap™ closure and ErgoNOW™ connector, key-coding feature helps prevent dispensing the wrong material
- Replacement liners are pre-folded to ensure easy insertion into the canister or overpack
- Liners are easily removed from overpacks after use for disposal, resulting in minimal waste

## SPECIFICATIONS

### NOWPak 20-liter bottle system assembly

<b>Materials of construction</b>	Liner	PTFE film
	Fitment	Injection molded natural virgin PFA
	Retainer	Injection molded natural virgin HDPE
	Overpack	Blow molded HDPE
	Chime	Injection molded natural virgin HDPE
	Temporary cap	Injection molded LDPE – yellow pigmented
<b>Cleanliness</b>	Product is not to exceed 55 particles per mL at $\geq 80$ nm in ultrapure DI water. Product is not to exceed 20 particles per mL at $\geq 100$ nm in ultrapure DI water. Product is not to exceed 10 particles per mL at $\geq 150$ nm in ultrapure DI water. A Certificate of Analysis stating lot-specific particle count data is available for each shipment of product.	
<b>Extractable trace elements</b>	Product is not to exceed 2 parts-per-billion (ppb) total of extractable trace elements listed utilizing 5% nitric acid. Trace elements reported are Ag, Al, As, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Na, Ni, Pb, Si, Sn, Sr, Ti, V, W, and Zn. A Certificate of Analysis stating lot-specific trace element data is available for each shipment of product.	
<b>UV protection</b>	Less than 0.1% light transmittance at 190 – 400 nm wavelength (amber color)	
<b>Dispense pressure rating</b>	The NOWPak bottle system container is not a pressure rated vessel. Pressurization maximum of 34 kPa (5 psig) for maximum two minutes.	
<b>Application torque for bottle system closures</b>	9.3 $\pm$ 0.3 N•m (80 – 85 in•lbs)	
<b>United Nations classification</b>	Single packaging Certified 1H1/Y1.7/100/*	
<b>Overpack neck thread</b>	Modified 63 mm buttress thread – 4.24 mm (0.167") pitch	

\*Year

## SPECIFICATIONS (CONTINUED)

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### Manufacturing standards

Fabricated and tested in a Class 5 Cleanroom as per International Standard ISO 14644-1:1999 Cleanrooms and associated controlled environments – Part 1: Classification of air cleanliness

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Film and heat-seal defect detection

Light table visual inspection  
Inspection frequency 100%

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Liner leak detection

Pressure decay tested  
Test frequency 100%  
Pass/fail test

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Weld integrity verification

Pressurized burst tested  
Minimum burst strength  
  
Weld tensile strength tested  
Film/film: Minimum tensile strength  
1 in•lbs energy at break  
  
Fitment weld strength tested:  
Pass/fail test  
  
All weld integrity verification tests:  
Test frequency 1:100

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Particle count verification

Particle testing with ultrapure DI water  
Test frequency 2:100

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## SPECIFICATIONS (CONTINUED)

### NOWPak 20-liter bottle system assembly (continued)

<b>Container cosmetic appearance</b>	Free from flash, burrs, color variations, and visual residue or visible particles per Entegris standards.		
<b>Shelf life</b>	The shelf life on NOWPak bottle systems, closures, and replacement liners is at least two years, when said products are stored in a reasonably controlled environment.		
<b>Country of assembly</b>	U.S.A.		
<b>Rated capacity and weight*</b>	<b>PART NUMBER</b>	<b>RATED CAPACITY</b>	<b>NOMINAL WEIGHT OF CONTAINER (INCLUDING TEMPORARY CAP**)</b>
	NP-20-A1-T650-1	20 Liters	2040 g (4.5 lb)
	NP-20-N1-T650-1	20 Liters	2040 g (4.5 lb)

**\*WARNING: DO NOT overfill.** There is a designed overhead capacity to accommodate the dispense system.

The actual capacity should be used when filling the NOWPak bottle to avoid process problems and potential overflows.

\*\*A temporary cap weighs 7 g.

### NOWPak Replacement T650 Liner

<b>Materials of construction</b>	Film	PTFE, natural translucent color
	Fitment	Injection molded natural virgin PFA
	Retainer	Injection molded natural virgin HDPE
	Temporary cap	Injection molded LDPE – red pigmented
	Fitment adapter (For NL-200-T650K-1 and NL-200-T650M-1 only):	
	NL-200-T650K-1	Injection molded, natural virgin HDPE
	NL-200-T650M-1	Machined PFA
	Fitment adapter O-ring	
	NL-200-T650K-1	FFKM
	NL-200-T650M-1	Chemraz®
Liner sleeve	PE	
<b>Cleanliness</b>	<p>Product is not to exceed 55 particles per mL at <math>\geq 80</math> nm in ultrapure DI water.</p> <p>Product is not to exceed 20 particles per mL at <math>\geq 100</math> nm in ultrapure DI water.</p> <p>Product is not to exceed 10 particles per mL at <math>\geq 150</math> nm in ultrapure DI water.</p> <p>A Certificate of Analysis stating lot-specific particle count data is available for each shipment of product.</p>	
<b>Extractable trace elements</b>	<p>Product is not to exceed 2 parts-per-billion (ppb) total of extractable trace elements listed utilizing 5% nitric acid. Trace elements reported are Ag, Al, As, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Na, Ni, Pb, Si, Sn, Sr, Ti, V, W, and Zn.</p> <p>A Certificate of Analysis stating lot-specific trace element data is available for each shipment of product.</p>	
<b>Dispense pressure rating</b>	Bottle system	The NOWPak bottle system container is not a pressure rated vessel. Pressurization maximum of 34 kPa (5 psig) for maximum two minutes.
	Canister system	Maximum dispense pressure rating: 196 kPa (28.4 psig) The maximum allowable dispense pressure rating in the U.S. is 103 kPa (14.7 psig). Please check local regulations for maximum allowable pressure rating.

**SPECIFICATIONS (CONTINUED)**

**NOWPak Replacement T650 Liner (continued)**

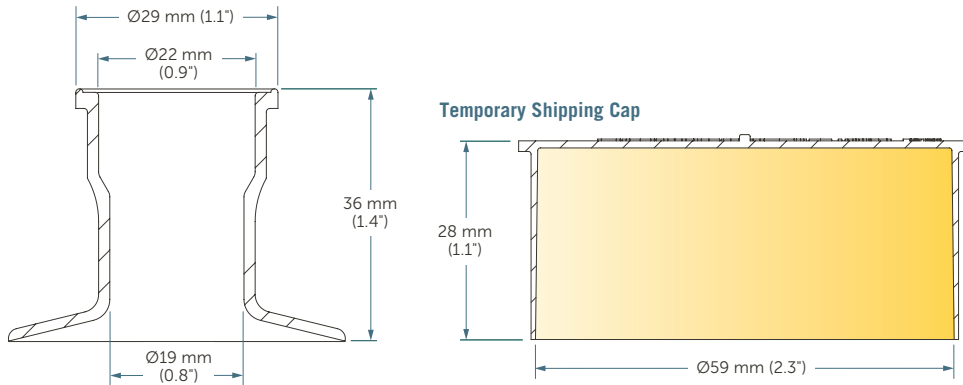
<b>Application torque for closures</b>	Bottle system and canister system	SmartCap, NC-W1, NC-W2 closures	9.3 ±0.3 N•m (80 – 85 in•lbs)
	Canister system	NC-03, NC-04 closures	27 – 34 N•m (20 – 25 ft•lbs)
		NC-200-2, NC-200-4 closures	47 – 54 N•m (35 – 40 ft•lbs)
	Legacy drum system*	DCR-G1-NC cap ring	61 N•m (45 ft•lbs)
DSC-CS shipping cap		40.7 N•m (30 ft•lbs)	
<b>Manufacturing standards</b>	Fabricated and tested in a Class 5 Cleanroom as per International Standard ISO 14644-1:1999 Cleanrooms and associated controlled environments – Part 1: Classification of air cleanliness.		
	Film and heat-seal defect detection	Light table visual inspection Inspection frequency 100%	
	Liner leak detection	Pressure decay tested Test frequency 100% Pass/fail test	
	Weld integrity verification	Pressurized burst tested Minimum burst strength  Weld tensile strength tested Film/film: Minimum tensile strength 1 in•lbs energy at break  Fitment weld strength tested: Pass/fail test  All weld integrity verification tests: Test frequency 1:100	

\*Entegris continues to offer legacy drum system replacement liners and accessories for customers who choose to use these with the NOWPak 200-liter canister system.

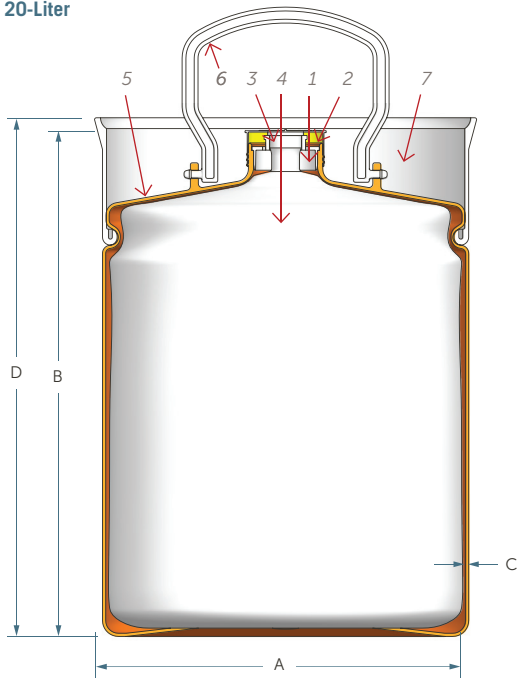
## DIMENSIONS

### NOWPak 20-liter Bottle System Assembly

#### 3/4" Fitment



#### 20-Liter



Item	Description	Qty
1	Retainer	1
2	Temporary cap	1
3	Fitment	1
4	PTFE liner	1
5	Overpack	1
6	Handle	1
7	Chime ring	1

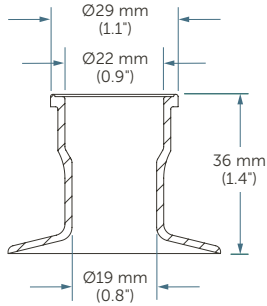
## DIMENSIONS

Part number	Size	A Container outside diameter	B Height to top of temp cap (maximum)	C Container wall thickness (minimum)	D Height to top of chime ring
NP-20-A1-T650-1	20 L	305 mm (12.0")	402 mm (15.8")	1.5 mm (0.06")	416 mm (16.4")
NP-20-N1-T650-1	20 L	305 mm (12.0")	402 mm (15.8")	1.5 mm (0.06")	416 mm (16.4")

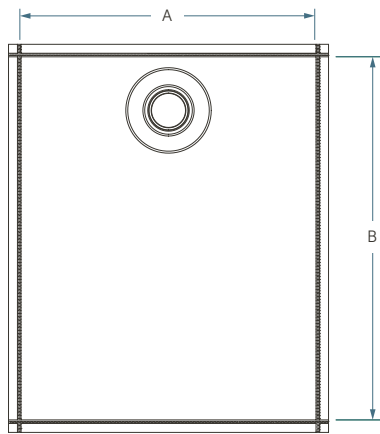
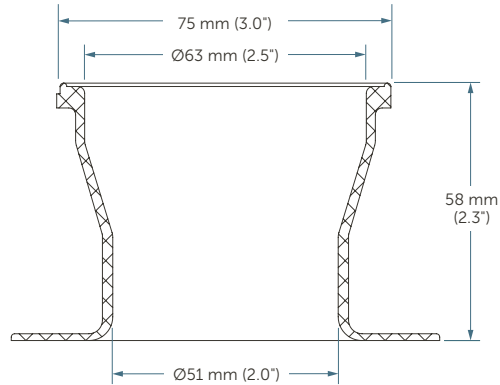
## DIMENSIONS (CONTINUED)

### NOWPak T650 Replacement Liners

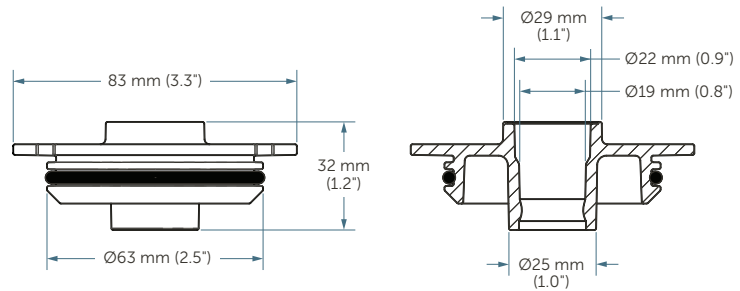
#### ¾" Fitment – 20-Liter Liner



#### 2" Fitment – 200-Liter Liner (For DL-1-T650-1)



#### Fitment Adapter – 200-Liter Liner (For NL-200-T650K-1 and NL-200-T650M-1)



PART NUMBER			DIMENSIONS		
Liner	Canister	Bottle overpack	Size	A	B
NL-018-T650A-1	NO-09 NO-09-63		18 L	362 mm (14.3")	730 mm (28.8")
NL-020-T650A-1	NO-08 NO-08-63 NO-08A-63 (19-liter canister)	NO-06-A NO-06-N (20-liter bottle)	19/20 L	489 mm (19.3")	660 mm (26.0")
NL-020-T650B-1	NO-07 NO-07-1 (20-liter canister)		20 L	489 mm (19.3")	597 mm (23.5")
NL-040-T650A-1	NO-40 NO-40-63 NO-40A NO-40A-63		40 L	572 mm (22.5")	927 mm (36.5")
DL-1-T650-1 NL-200-T650K-1 NL-200-T650M-1	NO-200 NO-200-2 NO-200A NO-200A-2		200 L	991 mm (39.0")	1397 mm (55.0")

#### Notes:

- All dimensions are measured inside to inside of liner weld.
- For 18-, 20-, and 40-liter size liners, A and B dimensions are  $\pm 6.35$  mm (0.25").
- For 200-liter size liners, dimensions are  $\pm 12.7$  mm (0.5").
- Unless otherwise indicated, all numeric values are nominal.

## SHIPPING INFORMATION

### Labeling

For NP-20-X1-T650-1 bottle system assembly:

A liner barcode label showing the assembly part number, bottling batch number, and liner lot number is applied to the bottom surface of the overpack. The outer shipping box is labeled with the part number, product description, bottle batch number, liner lot number(s), quantity, and date of manufacture.

For replacement liners:

Each liner is labeled with the batch number and part number. Each shipping carton and PE cleanroom bag is labeled with the part number, batch number(s), and quantity of liners.

### Packaging

For NP-20-X1-T650-1 bottle system assembly:

Minimum order quantity – Bulk packaged 16 units per skid (16 units per row, one row high). Shrink wrapped overall.

Economic order quantity – Bulk packaged 64 units per skid (16 units per row, four rows high). Slip sheet is placed between each row and shrink wrapped overall.

For replacement liners:

Each liner is capped, folded, and inserted into a cleanroom bag (heat sealed), then bulk packaged in a corrugated carton, lined with a PE bag. Retainers are packaged with the liners. For NL-200-T650K-1, and NL-200-T650M-1, fitment adapters are also packaged with the liners. Liners are packaged 50 liners per carton (18-, 20-, and 40-liter sizes) and 10 liners per carton (200-liter size).

### Bottle system assembly

Part number	Size	Skid quantity (minimum order quantity)	Skid quantity (economic order quantity)	Box dimensions (L x W x H)
NP-20-A1-T650-1	20 L	16 per skid	64 per skid	N/A
NP-20-N1-T650-1	20 L	16 per skid	64 per skid	N/A

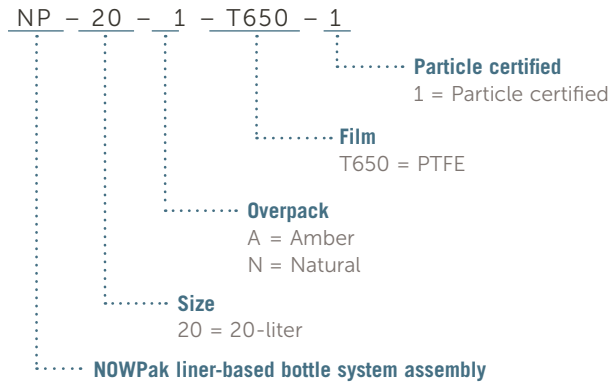
### Replacement liners

Part number	Size	Box quantity (minimum order quantity)	Skid quantity (economic order quantity)	Box dimensions (L x W x H)
NL-018-T650A-1	18 L	50	1,250 (25 boxes of 50)	667 mm x 413 mm x 394 mm (26.3" x 16.3" x 15.5")
NL-020-T650A-1	20 L	50	1,250 (25 boxes of 50)	667 mm x 413 mm x 394 mm (26.3" x 16.3" x 15.5")
NL-020-T650B-1	20 L	50	1,250 (25 boxes of 50)	667 mm x 413 mm x 394 mm (26.3" x 16.3" x 15.5")
NL-040-T650A-1	40 L	50	1,250 (25 boxes of 50)	667 mm x 413 mm x 394 mm (26.3" x 16.3" x 15.5")
DL-1-T650-1	200 L	10	140 (14 boxes of 10)	1003 mm x 508 mm x 273 mm (39.5" x 20.0" x 10.8")
NL-200-T650K-1	200 L	10	140 (14 boxes of 10)	1003 mm x 508 mm x 273 mm (39.5" x 20.0" x 10.8")
NL-200-T650M-1.	200 L	10	140 (14 boxes of 10)	1003 mm x 508 mm x 273 mm (39.5" x 20.0" x 10.8")

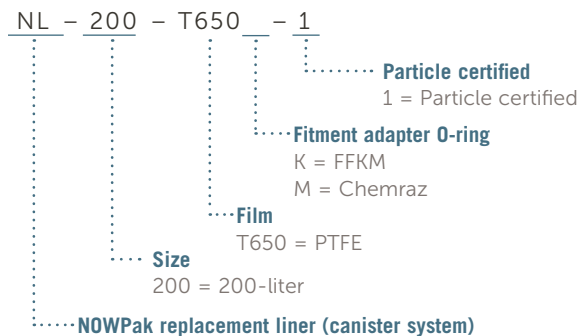
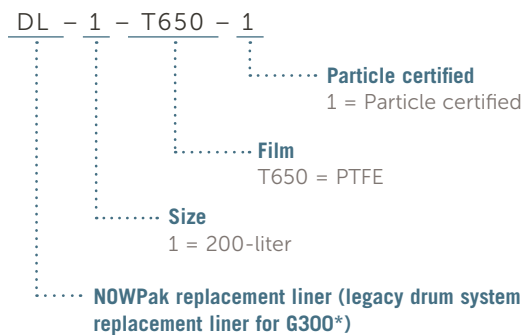
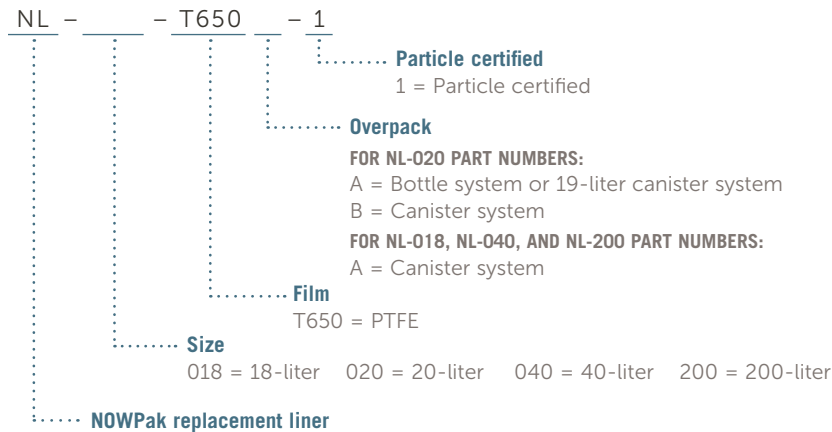


## ORDERING INFORMATION

NOWPak Liner-based Bottle System Assembly: part number



NOWPak T650 Replacement Liner: part number



*\*Entegris continues to offer legacy drum system replacement liners and accessories for customers who choose to use these with the NOWPak 200-liter canister system.*

## ORDERING INFORMATION (CONTINUED)

### NOWPak Liner-based system accessories

Part number	Description
NC-W1	Breakseal closure, 63 mm thread, white
NC-W2	Removable closure, 63 mm thread, white
SC-XX-YY-ZZ	SC type SmartCap with customer-specific key-code
SCD-XX-YY-ZZ	SCD type SmartCap with customer-specific key-code
SCG-XX-YY-ZZ	SCG type SmartCap with customer-specific key-code
TC-W1-10	IntelliCap with universal closure, quantity of 10
TC-W1-50	IntelliCap with universal closure, quantity of 50
NC-03	Two-piece aluminum breakseal closure for 4- to 40-liter canisters, 2.5-12 UN thread, EPDM with PTFE coating O-ring
NC-03-2	Two-piece aluminum breakseal closure for 4- to 40-liter canisters, 2.5-12 UN thread, FEP-encapsulated silicone O-ring
NC-04	Two-piece aluminum breakseal closure for 4- to 40-liter canisters, 63 mm buttress thread, EPDM with PTFE coating O-ring
NC-04-2	Two-piece aluminum breakseal closure for 4- to 40-liter canisters, 63 mm buttress thread, FEP-encapsulated silicone O-ring
NC-200-2	Two-piece aluminum breakseal closure for 200-liter canisters, 4.75-4 buttress thread, FEP-encapsulated silicone O-ring
NC-200-4	Two-piece aluminum breakseal closure for 200-liter canisters, 4.75-4 buttress thread, EPDM with PTFE coating O-ring
NA-02	Torque tool adapter for NC-W1 breakseal style closure (fits on a 1/2" drive torque wrench)
NA-03	Torque tool adapter for NC-W2 thread-on/off style closure (fits on a 1/2" drive torque wrench)
NA-10	Torque adapter for NC-03 and NC-04 aluminum closures
NA-51	Torque tool adaptor for SmartCap and IntelliCap closures, includes 1/2" torque drive adaptor
NA-51-A-XXYYZZ	Torque tool for SmartCap and IntelliCap closures with keyed insert (XXYYZZ represents key-code)
NA-51-XXYYZZ	Keyed Insert for NA-51-A-XXYYZZ SmartCap torque tool (XXYYZZ represents key-code)
NA-42	Torque tool adapter, SmartCap and IntelliCap
NA-33	Torque wrench, 3/8", 0-150 lb•in, with 3/8" to 1/2" drive socket adapter
NA-47	Tear tab removal tool for SmartCap and IntelliCap closures
NA-22	Tear tab removal tool for NC-W1 breakseal closures
NA-60	Liner insertion tool

## ORDERING INFORMATION (CONTINUED)

### NOWPak Liner-based system accessories (continued)

Part number	Description
NA-60-200	Liner insertion tool for 200-liter liners
NA-06	Liner removal tool
DA-04	Liner removal tool for 200-liter liners
NA-17	Liner removal and drain tool
NA-07	Liner disposal plug for 20-liter and smaller liners, bag of 100
NA-13	Diptube removal tool
NF-01-FR	Automatic bag inflation fixture for 4- to 20-liter liners
NF-180/200-FR	Automatic bag inflation fixture for 200-liter liners
NA-41	Manual bag inflation connector for 4- to 20-liter NOWPak HDPE overpacks and 4- to 40-liter stainless steel canisters, 63 mm buttress thread
NA-41-8990	Manual bag inflation connector for 4- to 20-liter NOWPak HDPE overpacks and 4- to 40-liter stainless steel canisters, 2.5-12 UN thread
NA-41-200-2	Manual bag inflation connector for 200-liter stainless steel canisters

### Legacy drum system accessories\*

Part number	Description
DCR-G1-NC	Cap ring
DSC-CS	Shipping cap
DDT-01-T1	Diptube, PTFE, 200-liter
DA-06	Cap ring torque tool
DA-07	Shipping cap torque tool

*\*Entegris continues to offer legacy drum system replacement liners and accessories for customers who choose to use these with the NOWPak 200-liter canister system.*

#### LIMITED WARRANTY

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