



## Pall® PD2 Powder Handling Bags



### *Safe and easy powder containment and transfer*

#### *Overview*

Containment of pharmaceutical ingredients and materials, whether for the protection of operators, the environment or the product itself, is a continuing priority for the pharmaceutical industry.

Conventional reusable containment and delivery systems can be time-consuming and costly to clean and validate. On the other hand, cheap plastic sacks can be unsatisfactory from a cleanliness, dust generation and materials recovery perspective.

Pall PD2 powder handling bags have been developed to combine the virtues of effective containment and high product recovery with the cost savings and efficiency of single-use technologies. The PD2 film has been developed to allow the bags to be supplied in irradiated or non-irradiated formats, depending on the application requirements.

## Applications

Applications include contained transfer, storage or shipping of:

- ▶ Dry powder media
- ▶ Filter aids
- ▶ Buffer salts
- ▶ Excipients

## Features and Benefits

Feature	Benefit
100% leak tested	Robust and safe technology for powder handling applications
Tapered funnel-shaped bag and polyethylene based multi-layer film with a permanent antistatic additive in the contact layer	High product recovery during operation, typically >99.95%
Flexible, transparent material, ergonomic handle	Ease-of-use and process visibility
Made in ISO Class 7 cleanroom	Suitable for use in all typical biopharmaceutical applications
Standard sanitary connections in 2 in., 3 in., 4 in. or 6 in. sizes	Broad connection compatibility and robust powder containment and process integrity
2.5 L to 50 L capacities as standard	Suitable for a wide range of powder handling applications and volumes
125 mL samples available	Off-the-shelf availability for stability studies
Lifting technology available to support powder bags around mixing applications	Can form part of a total processing solution for powder handling around mixing applications
Available in both irradiated and non-irradiated formats	Can be used in applications where powder requires irradiation after filling into the powder bags
3 sterilization grades available: sterile claimed, gamma-irradiated, none gamma-irradiated	Flexible to suit applications requiring different sterilization grade

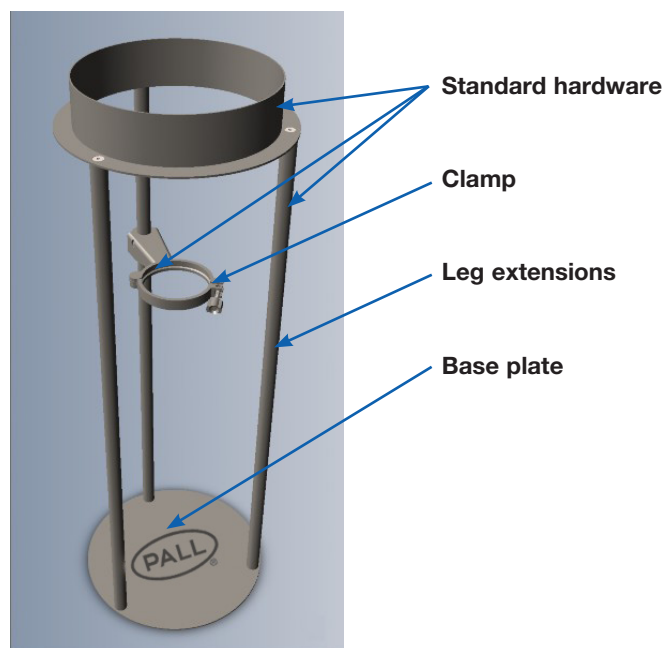
## Supporting Hardware and Single-use Accessories

To facilitate ease-of-use of the powder handling bags, a range of hardware is available to assist in the powder addition and delivery into a process.

**Figure 1**  
Powder bag lifting device



**Figure 2**  
Powder bag filling hardware



A wide range of single-use accessories is available from Pall Biotech. The main items are highlighted in Figure 3 and are referenced with all other accessories in the ordering information section of this datasheet. Single-use accessories include:

**Closures:** Sanitary clamp, gaskets, caps and plugs to securely close the PD2 powder bag.

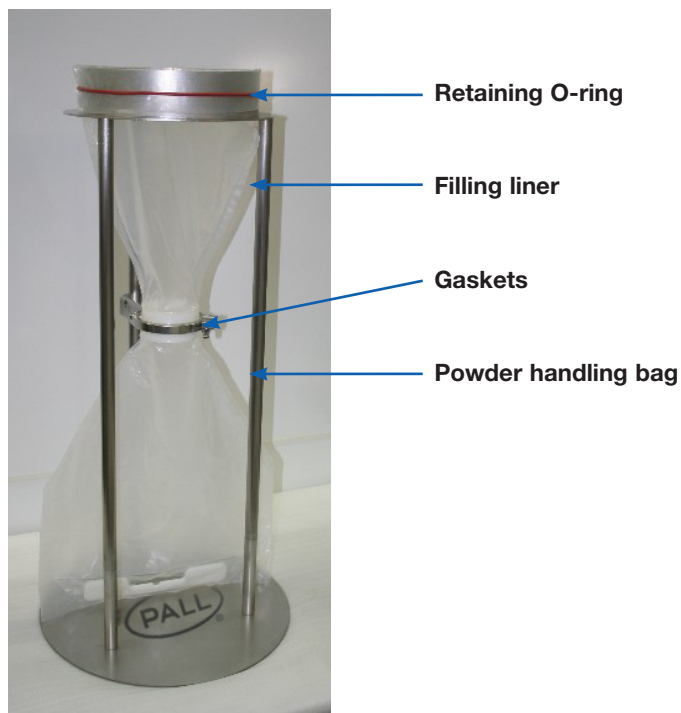
**Outer Clamps:** A variety of pinch clamps to control powder movement within a powder bag.

**Filling Liners:** Single-use devices to facilitate filling of a powder bag.

**Chutes:** To extend the connectivity of the powder bag outlets.

**Figure 3**

Essential single-use accessories for the powder bag filling hardware



## Quality Standards

The Pall PD2 powder handling bags are:

- ▶ 100% leak tested
- ▶ Manufactured in-house in a controlled environment (ISO 7) under a quality management systems certified to ISO 9000.

A full validation guide is available from Pall. The materials of construction of the powder handling bags are compliant with the following USP/Regulations:

- ▶ ISO 10993-5 (biological compatibility)
- ▶ USP <87> (cytotoxicity)
- ▶ USP <88> Class VI (biological reactivity)
- ▶ USP <661> (physicochemical tests for plastics)
- ▶ BSE/TSE EMEA 410/01

## Technical Specifications

The Pall PD2 powder handling bags are constructed from a polyethylene based multi layer film with a permanent antistatic additive in the contact layers.

The film thickness is 200 micron.

Maximum load: 25 kg/handle

3 sterilization grades available: sterile claimed, gamma-irradiated, not gamma-irradiated

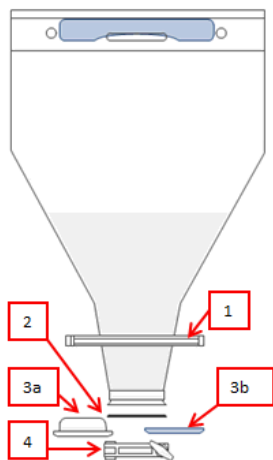
Sterilization method (where applicable): Gamma irradiation (maximum 50 kGy)

**Table 1**

Accessories for powder handling bags<sup>1</sup>

Size	1. Pinch Clamp		2. Gasket		3a/3b. End Cap		4. Sanitary Clamp	
	Non-irradiated	Irradiated	Non-irradiated	Irradiated	Non-irradiated	Irradiated	Non-irradiated	
2 in. sanitary outlet	700009CNS	4100142CS	4100142CNS	3a: 4101083S	3a: 4101083NS	700154CS	700154CNS	
3 in. sanitary outlet	700119CNS	SC00876S	SC00876NS	3b: FY02445S	3b: FY02445NS	FY02444S	FY02444NS	
4 in. sanitary outlet	700119CNS	4100138CS	4100138CNS	3a: 4100136S	3a: 4100136NS	700152CS	700152CNS	
6 in. sanitary outlet	700734CNS	4100134CS	4100134CNS	3b: 700603CS	3b: 700603CNS	701076CS	701076CNS	

<sup>1</sup>Minimum Order Quantity 10 pieces



## Ordering Information

### Powder Handling Bags

#### Powder Handling Bags (Sterile Claim Certified)

Part Number	Description	MOQ*	Accessories Included
PD2U8TS0000-SC01	125 mL, Pall PD2 powder handling bag, 2 in. sanitary outlet, sterile claim	20	
PD2UATS0000-SC16	2.5 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, sterile claim	20	
PD2UATS0000-SC18	2.5 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, sterile claim	20	
PD2UATS0000-SC17	2.5 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, sterile claim	20	
PD2UATS0000-SC02	5 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, sterile claim	20	
PD2UATS0000-SC12	5 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, sterile claim	20	
PD2UATS0000-SC03	5 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, sterile claim	20	
PD2UATS0000-SC04	5 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, sterile claim	10	Pinch clamp
PD2UATS0000-SC05	15 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, sterile claim	20	Sanitary clamp
PD2UATS0000-SC13	15 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, sterile claim	10	Endcap
PD2UATS0000-SC06	15 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, sterile claim	10	Gasket
PD2UATS0000-SC07	15 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, sterile claim	10	
PD2UATS0000-SC14	30 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, sterile claim	10	
PD2UATS0000-SC08	30 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, sterile claim	10	
PD2UATS0000-SC09	30 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, sterile claim	10	
PD2UATS0000-SC15	50 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, sterile claim	10	
PD2UATS0000-SC10	50 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, sterile claim	10	
PD2UATS0000-SC11	50 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, sterile claim	10	

\* MOQ = Minimum order quantity

**Powder Handling Bags (Gamma Irradiated)**

Part Number	Description	MOQ*	Order Separately			Endcap Part Number	MOQ	Gasket Part Number	MOQ	
			Pinch Clamp Part Number	MOQ	Sanitary Clamp Part Number					MOQ
PD2U8TS0000-0001	125 mL Pall PD2 powder handling bag, 2 in. sanitary outlet, irradiated	20	700009CNS	10	700154CS	10	4101083S	10	4100142CS	10
PD2UATS0000-0012	2.5 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, irradiated	20	700009CNS	10	700154CS	10	4101083S	10	4100142CS	10
PD2UATS0000-0022	2.5 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, irradiated	20	700119CNS	10	FY02444S	10	FY02445S	10	SC00876S	10
PD2UATS0000-0014	2.5 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, irradiated	60	700119CNS	10	700152CS	10	4100136S	10	4100138CS	10
PD2UATS0000-0002	5 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, irradiated	20	700009CNS	10	700154CS	10	4101083S	10	4100142CS	10
PD2UATS0000-0023	5 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, irradiated	20	700119CNS	10	FY02444S	10	FY02445S	10	SC00876S	10
PD2UATS0000-0003	5 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, irradiated	20	700119CNS	10	700152CS	10	4100136S	10	4100138CS	10
PD2UATS0000-0004	5 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, irradiated	10	700734CNS	10	701076CS	10	700603CS	10	4100134CS	10
PD2UATS0000-0005	15 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, irradiated	20	700009CNS	10	700154CS	10	4101083S	10	4100142CS	10
PD2UATS0000-0024	15 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, irradiated	20	700119CNS	10	FY02444S	10	FY02445S	10	SC00876S	10
PD2UATS0000-0006	15 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, irradiated	20	700119CNS	10	700152CS	10	4100136S	10	4100138CS	10
PD2UATS0000-0007	15 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, irradiated	10	700734CNS	10	701076CS	10	700603CS	10	4100134CS	10
PD2UATS0000-0025	30 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, irradiated	20	700119CNS	10	FY02444S	10	FY02445S	10	SC00876S	10
PD2UATS0000-0008	30 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, irradiated	20	700119CNS	10	700152CS	10	4100136S	10	4100138CS	10
PD2UATS0000-0009	30 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, irradiated	10	700734CNS	10	701076CS	10	700603CS	10	4100134CS	10
PD2UATS0000-0026	50 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, irradiated	10	700119CNS	10	FY02444S	10	FY02445S	10	SC00876S	10
PD2UATS0000-0010	50 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, irradiated	10	700119CNS	10	700152CS	10	4100136S	10	4100138CS	10
PD2UATS0000-0011	50 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, irradiated	10	700734CNS	10	701076CS	10	700603CS	10	4100134CS	10

\* MOQ = Minimum order quantity

**Powder Handling Bags (Not Gamma Irradiated)**

**Order Separately**

<b>Part Number</b>	<b>Description</b>	<b>MOQ*</b>	<b>Pinch Clamp Part Number</b>	<b>MOQ</b>	<b>Sanitary Clamp Part Number</b>	<b>MOQ</b>	<b>Endcap Part Number</b>	<b>MOQ</b>	<b>Gasket Part Number</b>	<b>MOQ</b>
PD2U8T-0000-0001	125 mL Pall PD2 powder handling bag, 2 in. sanitary outlet, non-irradiated	20	700009CNS	10	700154CNS	10	4101083NS	10	4100142CNS	10
PD2UAT-0000-0012	2.5 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, non-irradiated	20	700009CNS	10	700154CNS	10	4101083NS	10	4100142CNS	10
PD2UAT-0000-0022	2.5 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, non-irradiated	20	700119CNS	10	FY02444NS	10	FY02445NS	10	SC00876NS	10
PD2UAT-0000-0014	2.5 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, non-irradiated	60	700119CNS	10	700152CNS	10	4100136NS	10	4100138CNS	10
PD2UAT-0000-0002	5 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, non-irradiated	20	700009CNS	10	700154CNS	10	4101083NS	10	4100142CNS	10
PD2UAT-0000-0023	5 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, non-irradiated	20	700119CNS	10	FY02444NS	10	FY02445NS	10	SC00876NS	10
PD2UAT-0000-0003	5 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, non-irradiated	20	700119CNS	10	700152CNS	10	4100136NS	10	4100138CNS	10
PD2UAT-0000-0004	5 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, non-irradiated	10	700734CNS	10	701076CNS	10	700603CNS	10	4100134CNS	10
PD2UAT-0000-0005	15 L, Pall PD2 powder handling bag, 2 in. sanitary outlet, non-irradiated	20	700009CNS	10	700154CNS	10	4101083NS	10	4100142CNS	10
PD2UAT-0000-0024	15 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, non-irradiated	20	700119CNS	10	FY02444NS	10	FY02445NS	10	SC00876NS	10
PD2UAT-0000-0006	15 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, non-irradiated	20	700119CNS	10	700152CNS	10	4100136NS	10	4100138CNS	10
PD2UAT-0000-0007	15 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, non-irradiated	10	700734CNS	10	701076CNS	10	700603CNS	10	4100134CNS	10
PD2UAT-0000-0025	30 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, non-irradiated	20	700119CNS	10	FY02444NS	10	FY02445NS	10	SC00876NS	10
PD2UAT-0000-0008	30 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, non-irradiated	20	700119CNS	10	700152CNS	10	4100136NS	10	4100138CNS	10
PD2UAT-0000-0009	30 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, non-irradiated	10	700734CNS	10	701076CNS	10	700603CNS	10	4100134CNS	10
PD2UAT-0000-0026	50 L, Pall PD2 powder handling bag, 3 in. sanitary outlet, non-irradiated	10	700119CNS	10	FY02444NS	10	FY02445NS	10	SC00876NS	10
PD2UAT-0000-0010	50 L, Pall PD2 powder handling bag, 4 in. sanitary outlet, non-irradiated	10	700119CNS	10	700152CNS	10	4100136NS	10	4100138CNS	10
PD2UAT-0000-0011	50 L, Pall PD2 powder handling bag, 6 in. sanitary outlet, non-irradiated	10	700734CNS	10	701076CNS	10	700603CNS	10	4100134CNS	10

\* MOQ = Minimum order quantity

## Powder Transfer Filling Support Liners and Powder Chutes

Part Number	Description	MOQ*
PD2UATS0000-0050	Pall PD2 liner, 5 L, 2 in. sanitary outlet, gamma irradiated	20
PD2UATS0000-0053	Pall PD2 liner, 5 L, 3 in. sanitary outlet, gamma irradiated	20
PD2UATS0000-0051	Pall PD2 liner, 5 L, 4 in. sanitary outlet, gamma irradiated	20
PD2UATS0000-0052	Pall PD2 liner, 5 L, 6 in. sanitary outlet, gamma irradiated	20
PD2UATS0000-0071	Pall PD2 powder chute, 4 in., 2 in. sanitary outlet, gamma irradiated	20
PD2UATS0000-0072	Pall PD2 powder chute, 4 in., 3 in. sanitary outlet, gamma irradiated	20
PD2UATS0000-0070	Pall PD2 powder chute, 4 in., 4 in. sanitary outlet, gamma irradiated	20

\* MOQ = Minimum order quantity

## Powder Transfer Filling Support Hardware

Part Number	Description
705285	Powder bag filling support, 4 in. sanitary connection, with integral legs
705286	Leg extender kit for powder bag filling support
705287	Small base plate (14.6 in. diameter) for powder bag filling support
705288	Large base plate (20 in. diameter) for powder bag filling support
705363	Clamp assembly, 2 in. sanitary connection
705364	Clamp assembly, 6 in. sanitary connection
705337	Retaining O-ring (supplied in box qty = 10)

## Powder Handling Bag Accessories

Part Number	Description	Size	MOQ*
700009CNS	Pinch clamp, white polyamide (PA)	150 mm	10
700119CNS	Pinch clamp, white PA	220 mm	10
700734CNS	Pinch clamp, white PA	320 mm	10
700154CNS	Sanitary clamp, white PA	2 in.	10
700154CS	Sanitary clamp, white PA, gamma irradiated	2 in.	10
FY02444NS	Sanitary clamp, white PA	3 in.	10
FY02444S	Sanitary clamp, glass-filled (GF) nylon, gamma irradiated	3 in.	10
700152CNS	Sanitary clamp, white PA	4 in.	10
700152CS	Sanitary clamp, white PA, gamma irradiated	4 in.	10
701076CNS	Sanitary clamp, white PA	6 in.	10
701076CS	Sanitary clamp, white PA, gamma irradiated	6 in.	10
4100142CNS	Gasket, white silicone	2 in.	10
4100142CS	Gasket, white silicone, gamma irradiated	2 in.	10
SC00876NS	Gasket, white silicone	3 in.	10
SC00876S	Gasket, white silicone, gamma irradiated	3 in.	10
4100138CNS	Gasket, white silicone	4 in.	10
4100138CS	Gasket, white silicone, gamma irradiated	4 in.	10
4100134CNS	Gasket, white silicone	6 in.	10
4100134CS	Gasket, white silicone, gamma irradiated	6 in.	10
4101083NS	Cup end cap, natural high-density polyethylene (HDPE)	2 in.	10
4101083S	Cup end cap, natural HDPE, gamma irradiated	2 in.	10
4100136NS	Cup end cap, natural HDPE	4 in.	10
4100136S	Cup end cap, natural HDPE, gamma irradiated	4 in.	10
FY02445NS	End cap flat, polypropylene (PP)	3 in.	10
FY02445S	End cap flat, PP, gamma irradiated	3 in.	10
700123CNS	End cap flat, natural HDPE	4 in.	10
700603CNS	End cap flat, natural HDPE	6 in.	10
700603CS	End cap flat, natural HDPE, gamma irradiated	6 in.	10
700204CNS	Tyvek <sup>◆</sup> cap	2 in.	10
700125CNS	Tyvek cap	4 in.	10
700604CNS	Tyvek cap	6 in.	10
700214CNS	Push-in dust cap, low-density polyethylene (LDPE)	4 in.	10

\* MOQ = Minimum order quantity ; C= cleaned; NS= Non-sterilized; S= Sterilized



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