

# Liquid Bags Overview



**2,000 Employees**

**\$300m+ Revenue**

**11 Production Facilities**

## ILC DOVER BUSINESS OVERVIEW



**(Bio)Pharmaceutical**

Manufacturer of single-use products used for powder and liquid handling/ containment, producer of (sterile) chemical solutions and Personal Protective Equipment (PPE) for (bio)pharmaceutical research, development and production processes



**Medical Device**

End-to-end CDMO for custom, high-precision silicone, rubber and thermoplastic products for use in medical devices



**Advanced Technologies**

Supplier of high-performance flexible materials for (aero)space, safety and packaging

## ILC DOVER PRODUCTION FACILITIES OVERVIEW

*Over 780,000 sq. ft. total of Office, Development, Test Lab and Production*

*Global cGMP footprint*

- Frederica, DE
- Houston, TX
- Lincolnshire, IL
- Chicago, IL
- Salt Lake City, UT
- Raleigh Durham, NC
- Gliwice, Poland
- Hazel Grove, UK
- Juarez, Mexico
- Rossens, Switzerland
- Suzhou, China



CORE  
PRODUCTS

KEY  
CAPABILITIES



## BIOTHERAPEUTICS

### Single Use Powder Containment

- 5-200 L 3D Powder Bags
- Drum Liners
- Continuous Liners

### Single Use Liquid Bags

- 50ml – 200 L 2D Bags

### Liquid/Powder Content

- Water For Injection (WFI)
- WFI based (Buffer) Solutions
- cGMP Materials
- Buffers, Salts, Amino Acids
- Reagents
- Media and Sera

### Fluid Transfer Assemblies

- Proprietary TPE & PCS tubing Line Sets
- Manifolds

### Isolators & Flexible Enclosures

- Aseptic Isolators
- ADC Isolators
- Custom Enclosures

### PAPRs

- High Visibility Hoods
- Sterilized Hoods

### Process Equipment

- Venturi Mixers for Powder Hydration
- Drum Transfer Systems

- Customized design
- Film forming, cutting & sealing
- Sterile liquid manufacturing
- Clean, low-particulate assembly

- cGMP repackaging, trusted weights
- ISO 7 cleanroom manufacturing
- cGMP & ISO 13485 certified



## PHARMACEUTICALS

### Single Use Powder Containment

- 1-850 L 3D Powder Bags
- Continuous Liners
- Drum Liners
- Stability Bags

### Isolators & Flexible Enclosures

- Aseptic Isolators
- ADC Isolators
- Custom Equipment Enclosures

### Liquid Content

- Water For Injection (WFI)
- WFI based (Buffer) Solutions

### Processing Equipment

- Mixing
- Sampling
- Dosing
- Weighing/Dispensing

### PAPRs

- High Visibility Hoods
- Explosion Proof Rated Systems
- Sterilized Hoods

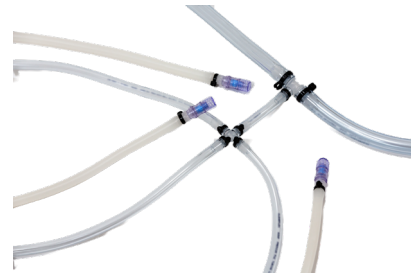
- Customized design
- Leak testing
- Equipment fabrication, installation and validation
- ISO 7 cleanroom manufacturing
- cGMP & ISO 9001 certified

## Liquid Handling: Components & Tubing



 **Flexan**

## Liquid Handling: Fluid Transfer Assemblies



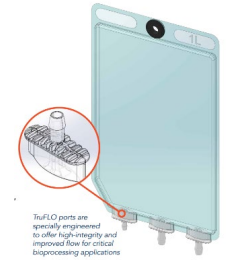
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## Integrated Solutions for Bioprocessing



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## Liquid Handling: Liquid Bags



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*Various sizes available*

## cGMP Raw Materials



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 **KSE**  
SCIENTIFIC

## Handle

For ergonomic handling and increased operator's safety

## Film

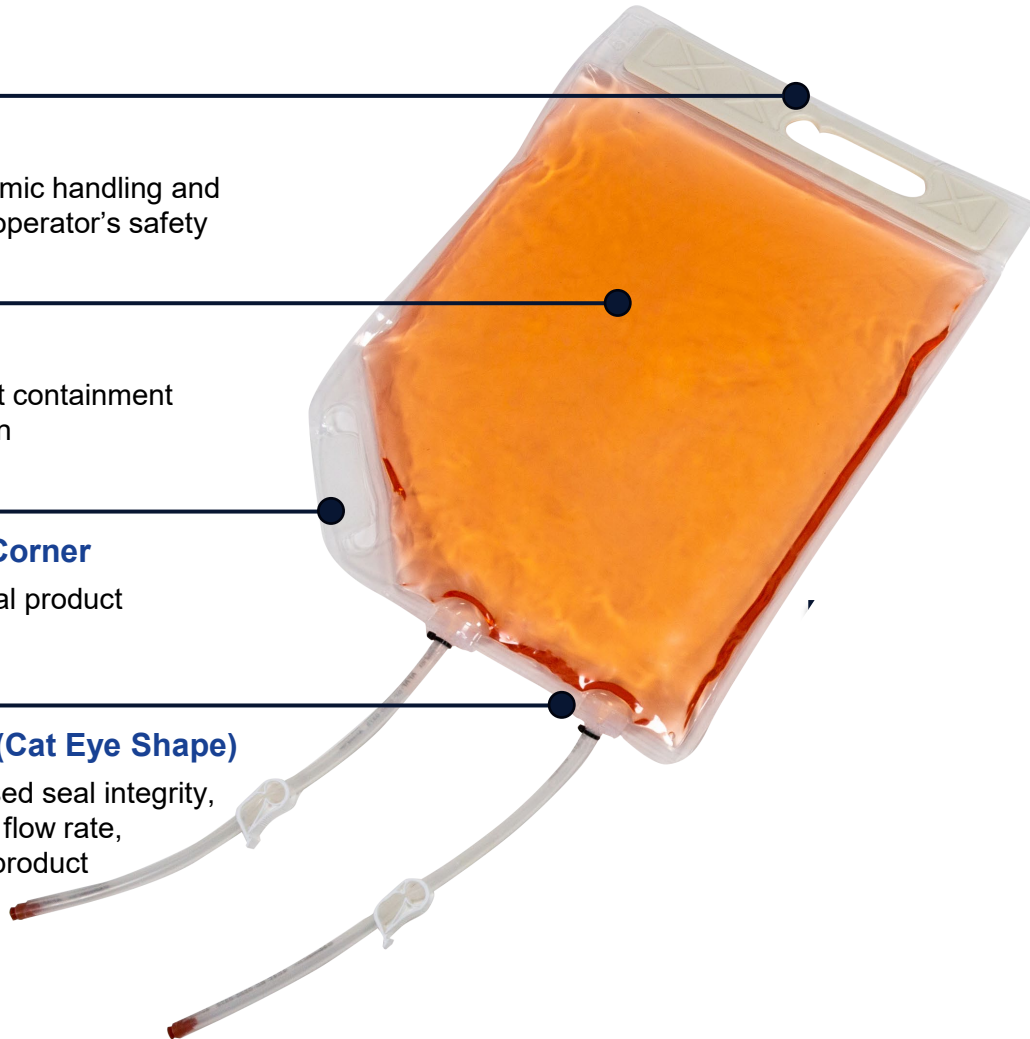
For product containment & protection

## Tapered Corner

For maximal product recovery

## TruFlo™ (Cat Eye Shape)

For increased seal integrity, maximized flow rate, increased product recovery



## APPLICATIONS

*Storage, transfer and sampling of:*

- ✓ Hydrated Cell Culture Media
- ✓ Hydrated Buffer
- ✓ Process Intermediate Fluids
- ✓ Bulk Drug Product
- ✓ WFI





## PATENTED TRUFLO PORT DESIGN

- Cat-eye design optimizes edge-seal integrity
- Unique internal funnel shape improves flow rates
- Low-profile design coupled with internal port design maximizes product recovery

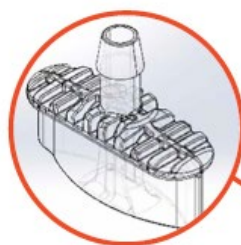
## AVAILABILITY

- 3-port configuration available in sizes 500mL-50L
- 4-port configuration available in sizes 2L-50L

## 50 mL – 200L 2D Bags

## 1-, 2-, 3-, and 4-ported

## Edge-port and Face-port Dependent on Size



*TruFLO ports are specially engineered to offer high-integrity and improved flow for critical bioprocessing application*



## APPLICATIONS

- Cell Culture Media / Buffer
- Chromatography / Filtration Buffer
- In-Process Sampling
- Bulk Product Collection & Storage



## FEATURES

- High degree of customization
- Agnostic to the component supplier
- TruFLO ports enable improved flow rates and product recovery
- Industry-proven Renolit 9101 PE film with low E&L profile
- Ergonomic handles on 2L+ enable easier handling for manufacturing
- Individual seals prevent leaks from developing during manipulation

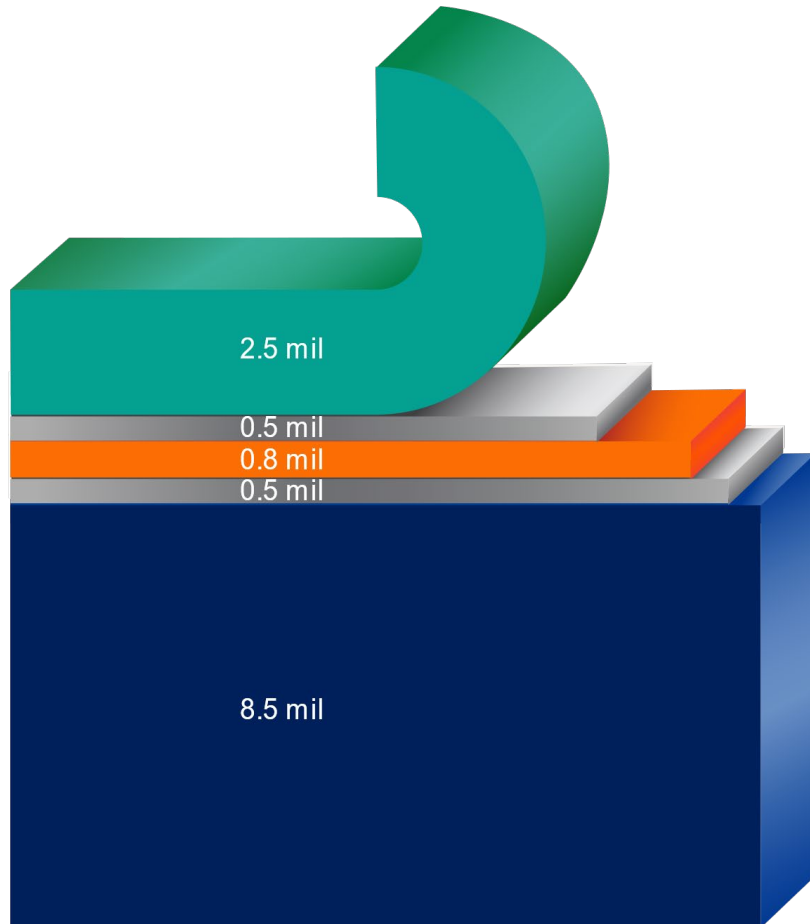


## COMPETITIVE ADVANTAGES

- Superior customer service, working closely with team to find best functional and well-priced design
- Value priced
- 6-8 week lead times on standard component library

Scan to learn more





Renolit 9101

■ ULDPE ■ Tie ■ EVOH ■ Tie ■ LDPE

## FEATURES

- Inert ultra-low density polyethylene (ULDPE) contact layer with **extremely low E&L profile**
- LDPE outer layer with **superior clarity, flexibility and strength**
- EVOH as **high oxygen barrier layer**
- Resistant** to a wide range of chemicals
- Stable** in temperature range of -45°C to 60 °C

## BENEFITS

- Avoid contamination
- Allow visual identification and inspection
- Protect your valuable goods and products
- Allow wide range of applications



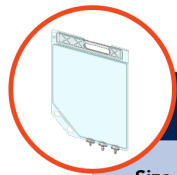
METHOD	DESCRIPTION
Visual Inspection	Bags met the dimensional tolerances and requirements of engineering drawings.
Volume Overage & Handling	Bags tolerated the nominal volumes with a 1.2x factor of safety.
Suspended Structural Capacity Test– 24 Hour Dwell	Bags tolerated being filled by 1.2x their nominal volume and hung for 24 hours without any signs of structural failure.
System Pressure Capability & Leakage	Bags and tubing tolerated pressures of 2 PSI without leakage.
Drainage & Flow	Bag drained 95% of contents (by mass) under free flow and 99% of contents (by mass) with manipulation.
Burst Test	Bags tolerated pressures greater than 2 PSI without leaking.
Pinch Clamp Integrity with Head Pressure	Bags tolerated pinch clamp at 2 PSI pressure without leaking.

ILC Dover team will send the validation guide and product data sheet upon request



## 2-Port Configurations

Size	Port Sizes	Dimensions (W x L)	Internal Surface Area	Connections*	Smart Part #
50 mL	1/4 in	6.25 x 6.25 in	51 in <sup>2</sup>	Luer (Body & Insert)	DF050M2PTL-G
100 mL	1/4 in	6.25 x 7.38 in	64 in <sup>2</sup>	Luer (Body & Insert)	DP100M2PTL-G
250 mL	1/4 in	6.25 x 9.25 in	86 in <sup>2</sup>	Luer (Body & Insert)	DF250M2PTL-G
500 mL	1/4 in	7.75 x 9.62 in	115 in <sup>2</sup>	Luer (Body & Insert)	DF500M2PTL-G
1000 mL	1/4 in	7.75 x 12.88 in	162 in <sup>2</sup>	Luer (Body & Insert)	DF001L2PTL-G
500 mL	3/8 in	7.75 x 9.62 in	115 in <sup>2</sup>	MPCs (F&M)	DF500M2PTM-G
1000 mL	3/8 in	7.75 x 12.88 in	162 in <sup>2</sup>	MPCs (F&M)	DF001L2PTM-G
2 L	3/8 in	14.00 x 15.88 in	320 in <sup>2</sup>	MPCs (F&M)	DF002L2PTM-G
5 L	3/8 in	14.00 x 19.12 in	408 in <sup>2</sup>	MPCs (F&M)	DF005L2PTM-G
10 L	3/8 in	16.50 x 23.62 in	610 in <sup>2</sup>	MPCs (F&M)	DF010L2PTM-G
20 L	3/8 in	16.50 x 31.88 in	874 in <sup>2</sup>	MPCs (F&M)	DF020L2PTM-G



## 3-Port Configurations

Size	Port Sizes	Dimensions (W x L)	Internal Surface Area	Connections*	Smart Part #
500 mL	3/8 in (2) & 1/4 in	7.75 x 9.62 in	115 in <sup>2</sup>	MPCs (F&M), Injection Cap	DF500M3PTM-G
1000 mL	3/8 in (2) & 1/4 in	7.75 x 12.88 in	162 in <sup>2</sup>	MPCs (F&M), Injection Cap	DF001L3PTM-G
2 L	3/8 in (2) & 1/4 in	14.00 x 15.88 in	320 in <sup>2</sup>	MPCs (F&M), Injection Cap	DF002L3PTM-G
5 L	3/8 in (2) & 1/4 in	14.00 x 19.12 in	408 in <sup>2</sup>	MPCs (F&M), Injection Cap	DF005L3PTM-G
10 L	3/8 in (2) & 1/4 in	16.50 x 23.62 in	610 in <sup>2</sup>	MPCs (F&M), Injection Cap	DF010L3PTM-G
20 L	3/8 in (2) & 1/4 in	16.50 x 31.88 in	874 in <sup>2</sup>	MPCs (F&M), Injection Cap	DF020L3PTM-G

\* via 12-inch TPE tubing

ILC Dover's liquid bags are configurable with a variety of sizes, ports and components to meet the needs of complex applications

Standard 2D chamber sizes from 50mL to 1L with a hanging grommet and 2L-50L with robust, ergonomic support handles

**Custom face-ported 2D bags are also available in 20L, 50L, 100L and 200L**



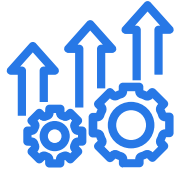
## Customization

- Standard offerings to full customization to fit your requirements



## Pricing

- Competitive market pricing
- Yearly pricing reviews



## Lead Times

- Standard offerings to full customization to fit your requirements



## Quality

- Patented designs
- Mindful of entire manufacturing process



## Full-Service Offering

- Liquid Bags
- Tubing, Componentry & FTAs
- cGMP Raw Materials

An exceptional team of employees work together via robust processes with one goal in mind:  
the customer is at the center of all that we do

## Partnership with ILC Dover

ILC Dover  
Accountability

Dedicated  
Team

Long Term  
Strategy

YOUR  
requirements,  
YOUR way

Expert  
Support from  
all ILC Dover  
Groups



Partnering with you every step of the way!