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MLI, the Company

Founded in 1981, MLI is an innovator in the pellicle manufacturing industry and is the leading supplier of pellicles in the world. With three technologically advanced production facilities strategically located in the US and Asia, MLI can supply global demand for pellicles six times over. MLI's high end facilities are equipped with modern CAD/CAM equipment for the production of frames and engineering parts, automatic anodizing lines, and chemical labs for research and development efforts. With more than three decades of innovation and customer support experience, MLI can respond quickly to a variety of customer needs in addition to changing requirements in micro lithographic technology. To this day, MLI remains committed to the following:

- Highest Quality
- On-Time Delivery
- Strong Technical Support
- Wide Range of Products
- First Rate Customer Service

Because customer needs may vary, MLI works closely with each customer to ensure that pellicles are developed according to their required specifications. This strong emphasis on customer support and ongoing service has allowed MLI to become the primary supplier of pellicles to some of the world's leading corporations.
Introduction of MLI
(Micro Lithography Inc.)

1. Established since 1981
2. ISO-9001 certified (USA-1994 and Taiwan-1999)
3. More than 7 Million Pellicles produced
4. Current manufacturing capacity: 40,000 Pellicles per Month
5. One manufacturing facility in USA
6. One manufacturing facility in Taiwan
7. More than 250 employees worldwide
Why MLI

MLI’s major historical achievements

1. MLI holds several Patents for the development of materials, processes, packages and tooling relating to the manufacturing and use of Pellicles.

2. First in the industry to produce Organic Fluorocarbon AR (Anti-Reflecting) coated Pellicle film.


5. MLI’s ArF-193nm Pellicle (Film 703) is the ONLY Pellicle available in the industry that offers minimum 99% on multiple wavelengths 193nm, 248nm and 365nm.

6. Advanced ArF-193nm pellicle (Film 801) for High NA Technology 32nm & 22nm nodes
Pellicle Introduction

1. What Pellicle do
2. Cross–section of MLI’s Pellicle
3. Pellicle Films
4. Adhesive
5. Liquid Coating (LC)
What Pellicle Do

Optical Projection System

Top Contaminant
Object Plane
Pellicle Frame
Pellicle Film

Bottom Contaminant
Lens System
Image Plane
Bottom Film Image

Light
Photomask
Standoff
Mask Pattern

UNFOCUSED Contaminant Image
Wafer Surface
Bottom Contaminant Image
Cross-section of MLI’s Pellicle

[Diagram showing the cross-section of a pellicle with labels for AR Coating, Frame, Mounting Adhesive, Liquid Coating, Glue, Frame Filter, and Backside Cover.]

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MLI’s Film types

- Film 801: For high NA 32nm and 22nm immersion technology
- Film 703: For Multiple wavelengths with 99% @ ArF-193nm, KrF-248nm and I-Line-365nm
- Film 602: For KrF-248nm, I-Line-365nm
- Film 201: For I-Line-365nm, G-Line-436nm (with Broadband down to Mid-UV)
- Film 122: For I-Line-365nm, G-Line-436nm
Pellicle film for high NA 32nm and 22nm immersion technology

MLI Film type 801

Transmission (T%) vs. Angle graph
Pellicle film for high NA 32nm and 22nm immersion technology

Transmission %

Wavelength (nm)
Pellicle film for multiple ArF-193nm, 248nm, 365nm wavelengths
Pellicle film for multiple KrF-248nm and 365nm (i-line) wavelengths

Graph showing transmission percentage (%) against wavelength (nm) for Film 602.
Pellicle film for g/i-lines wavelengths
(Down to Mid-UV Broadband)
Pellicle film for g/i-lines wavelengths

MLI Film type 122
MLI’s #17 vs. Carrier Adhesive

Non-carrier adhesive (MLI’s #17) Carrier adhesive (3M-701)

Advantage of MLI’s #17 non-carrier adhesive

- Easy to mount and remove
- Years of field testing
- Acrylic material
- UV resistant
MLI’s Liquid Coating (LC)

**Advantage of MLI’s Liquid Coating for Inner Frame**

- Continuous, smooth application
- High tackiness Acrylic
- Minimum Outgassing
- UV resistant
Pellicle Mounting Tool
8000 series

"NEW" Pellicle Mounting System

Model 8001

General
- Cutting edge technology
- High mounting accuracy
- High productivity
- User friendly machine
- Fast delivery
- Affordable price

Features
- Cleaner
  - Washable components
  - Vertical mounting
  - Smooth moving
- Better sealing
  - Mounting force distributes evenly on Mask
  - Tie control of mounting forces aply to Mask
  - Mounting forces and/or speeds controllable by User
  - No film “bulging”
MLI Quality System

1. Quality System
2. Quality Policy
3. Basic Beliefs
Our Quality System

1. ISO9001-2008 certified quality system
   Documented quality system for management and control, with good traceability

2. Extensive product testing
   Chemical analysis and life-time testing of all new pellicle components, including all films, glues, mounting adhesives, liquid coatings and filters

3. Continuous process improvement
   Commitment to the principle of quality through process, not through inspection
Our Quality Policy

1. Basic Beliefs
   Customer Satisfaction
   Continuous Improvement
   Quality Through Process

2. Product Quality
   Cleanliness
   High Transmission
   Long Useful Life
   Easy To Use

3. Cleanliness
   Born Clean
   Shipped Clean
   Stays Clean
Our Basic Beliefs

1. **Customer Satisfaction**
   Provide Quality Product to Customer
   Delivery Product on Schedule
   Provide Timely Feedback

2. **Product Quality**
   Box Design Change
   BSC Change
   Package Change

3. **Quality Through Process**
   Fully or Semi-automation equipments
   Hand-Free Process and Hand-Free Tool