



200 MM RETICLE SMIF POD
USER MANUAL

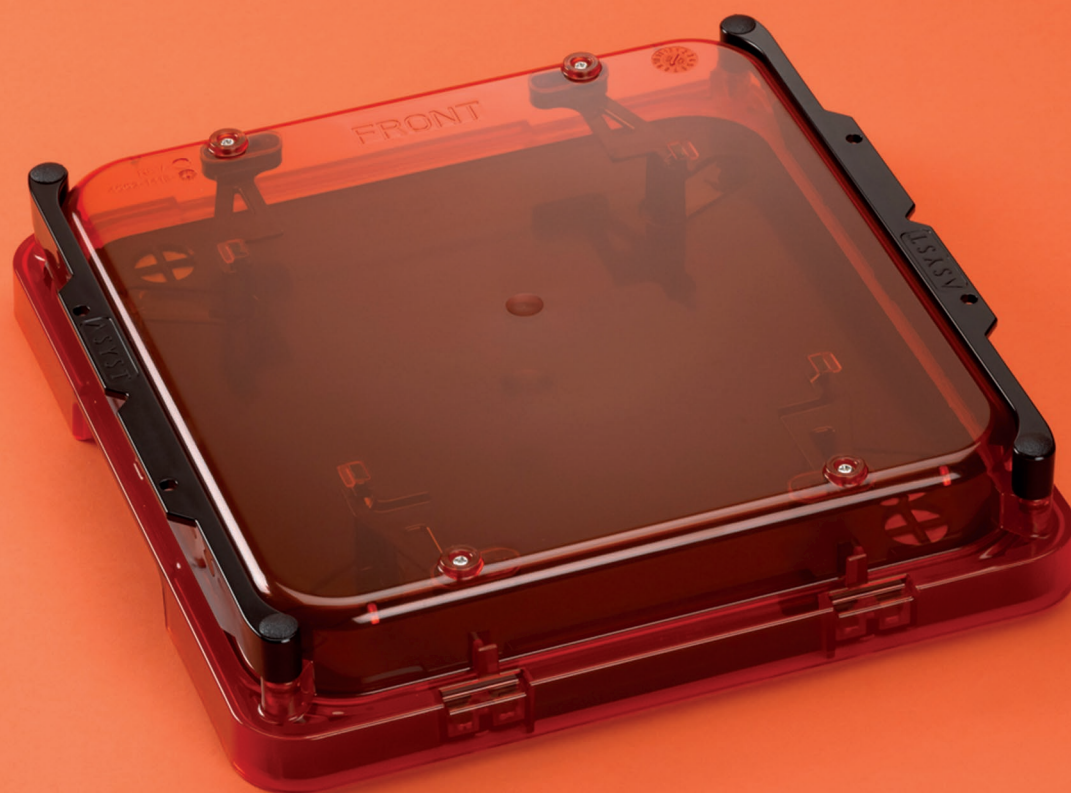


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Introduction

The 200 mm Reticle SMIF Pod (RSP) provides mask shops and reticle users with a standard mechanical interface (SMIF) to the safe handling, storage and transport of 150 mm reticles with or without pellicles. The product is based on provisional SEMI® Standards. The 200 mm RSP interfaces with SEMI Standard SMIF equipment. The RSP provides both static protection and ultraviolet light protection for masks and reticles. The RSP has inert gas purge capability via an inlet valve and outlet valve located in the door. In addition, the RSP has info pads that provide protection to users with respect to improper placement on incorrect process equipment. Optional stacking features are available.

Reference Documents – Reticle Compliance Requirements

SEMI E100-0302 Specification for a Reticle SMIF Pod (RSP) used to transport and store 6 inch.

General Specifications

Specification	Metric
Capacity:	One (1) 150mm Reticle
UV transmissivity (all colors):	~0 % @ \leq 470 nm
ESD performance:	< 2 seconds
Weight:	1.38kg
Reliability:	> 50K MCBF @ 90% c.l.
Washability:	No disassembly required
Serialization:	Permanent unique serialization labels
Door flatness:	0.5 mm

Part Numbers

Please contact your Entegris representative to determine part numbers and configurations.

Standard Option

Item	Options
Transparent dome:	Amber UV protection
Lock-out:	FEOL / BEOL
Lot tracking:	RF Micro-Tag

A paperwork pouch for carrying traveler documents with the pod is available from Sunrise Packaging, Inc. (www.sunpack.com).

Serialization

Standard products include a unique serial number label located on the underside of each RSP door.

Documentation

Entegris provides a complete set of "Developer Kit" drawings outlining SEMI Standard interface dimensions. Revision level and manufacture date will be maintained in one database.

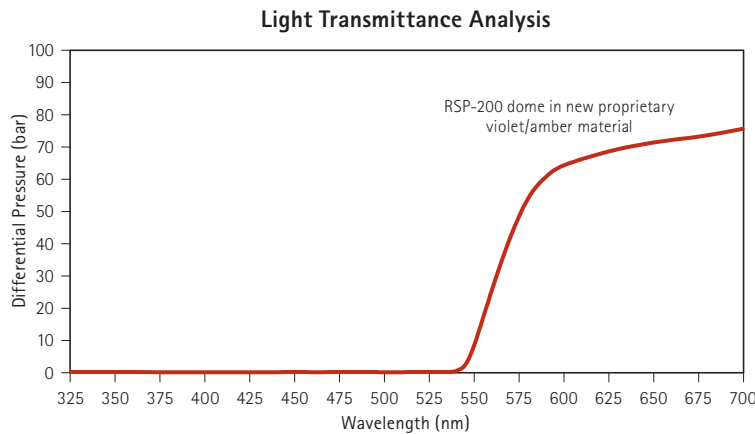
Materials of Construction

RSP Component	Material
Shell:	Inherently static-dissipative ABS, or inherently static-dissipative proprietary polymer
Door/cover:	Polycarbonate/polycarbonate with carbon filler
Reticle retainer:	PEEK with carbon filler
Breather filter:	PTFE
Breather body:	Polycarbonate
Latch plates:	Anodized aluminum
Door seal:	Fluoroelastomer or thermoplastic elastomer

Material Properties

UV Light Protection

The transparent dome has a color additive to minimize ultraviolet light transmission to protect photo sensitive materials used in photolithography applications. The transmissibility curve outlines the percentage of light transmission at various wavelengths. Entegris' specification is zero light transmission at <470 nm wavelength. The curve below represents typical light transmittance performance.



ESD Protection

The RSP provides an electrical path to ground from all the reticle contact points and from all manual or automated pick-up points, including the manual handles.

To achieve this requirement, the plastic resins are filled with a conductive additive (i.e., carbon or stainless steel fibers). The conductive additives provide the electrical conductivity measured in surface resistivity (Ohms/Sq) and/or static decay time (seconds).

Raw resin certification includes conductive fiber loading and random sampling on molded components.

SURFACE RESISTIVITY

RSP Component	Surface Resistivity (Ohms/Sq)
Door	<10 ⁶

STATIC DECAY

RSP Conductive Path	Static Decay Time (5K Volts to 500 Volts in Seconds)
Automation handle to dome to door	<2 seconds

Inspection Criteria

Visual

Each sub-component and finished RSP assembly is inspected based on plastics industry standards, Entegris capability and semiconductor wafer carrier standards.

Mechanical Interface Dimensions

RSP is inspected and checked against select SEMI mechanical interface dimensions defined as control dimensions.

Entegris' plan of record is to measure control dimensions using both dial height indicators gauging and surface plates in Class 1000 or better environment.

Testing

Cycle

Upon completion of an RSP assembly, it will cycle test the RSP on a 200 mm Indexer in a Class 10 cleanroom to ensure proper functionality.

FUNCTIONALITY TEST

RSP Component	Number of Cycles	Operation
RSP assembly	10	Placement on KC pins, RSP clamping, RSP docking to FIMS, smooth door open/close and placement

PERFORMANCE TEST

Reliability	Number of Cycles	Pre-Measurement	Post-Measurement	Visible Wear
On-going	>50K	SEMI compliant	SEMI compliant	Limited – CAM only with no effect on functionality

Flammability Test

RSP material of construction does not comply with 4910 approved materials outlined by Factory Mutual (FM) flammability requirements.

RSP Cleanliness and Cleaning

Entegris 200 mm reticle SMIF Pod is designed for cleanability—minimal water or moisture traps in either door or shell.

No disassembly is required, including gaskets and breather filters. We recommend cleaning the RSP as a dome assembly and door assembly. We recommend no disassembly of components. Purge valves (if used) are also designed to be effectively cleaned and dried without any disassembly. A special tool is required to insert/remove filters.

Dry Criteria

No visible water droplets or visible moisture on any RSP component.

Temperatures

We recommend cleaning and drying temperatures not to exceed 60°C.

Matching Door to Dome

We recommend cleaning the door and the dome at the same time and in the same cleaning process to minimize cross contamination and simplify mating the two components with matching serialization, post cleaning.

Cleaning Compatibility

We recommend cleaning and drying with commercially available RSP cleaners. D.I. water systems are acceptable, with or without surfactants.

Configurable Info Pads

The door bottom is designed to the 200 mm RSP SEMI standards and has info pads to provide the user with lock-out capability on process tool load-ports. Four info pads are identified as A, B, C & D per SEMI standards and are designed to be user-configurable. Info pad “plugs” snap into the desired info pad hole to configure the pod for lock-out on process tools.

Standard product has A & B open and C & D closed (plugged).

World-class Manufacturing Program

Entegris Product Documentation/Specification

Entegris adheres to the strictest manufacturing standards and is ISO compliant to the latest industry requirements.

Recommended Periodic Maintenance

Entegris recommends routine replacement of the following components on the RSP every 12 months:

Replacement Item	Part Number	Qty per RSP	Qty per Kit
Door seal	9700-4246-03	1	20
Breather filters (inlet & outlet)	9790-0017-01	2	100

NOTE: The door seal and wafer locks are sold in kits of 20 pieces and the breather filter is sold in kits of 100.



Service Options

Entegris will consider working with users to provide on-site service support utilizing the users cleaning equipment and facilities, with Entegris providing the people resources to maintain the RSPs.

For More Information

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit www.entegris.com and select the Customer Service link for the center nearest you.

Terms and Conditions of Sale

All purchases are subject to Entegris' Terms and Conditions of Sale. To view and print this information, visit www.entegris.com and select the Legal Notices link from the footer.

Product Warranties

For Product Warranties, visit www.entegris.com and select the Legal Notices link from the footer.

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