



## SMARTSTACK® 300 MM HWS CONTACTLESS SHIPPER

*Advanced contactless wafer shipping solution enabling safe transport and storage of wafers without risk of contamination*

### Overview

Semiconductor manufacturers demand advanced solutions for safe storage and transport of highly sensitive wafers with an emphasis on solving wafer quality issues, such as contamination, scratches, imprints and stains. The SmartStack® 300 mm contactless horizontal wafer shipper (HWS) offers the right solution for contactless shipment and storage of 25 lens or bumped wafers of varying thicknesses in a clean, safe environment. Constructed of engineering-grade polymers, the rugged design eliminates the need for TYVEK® interleaf wafer separators or PE foam. Wafers are placed on rings eliminating the need for ESD-coated TYVEK inserts and pink foam. The perimeter support ring also reduces surface area damage and interleaves contamination to finished wafers.

Along with the superior protection of the 300 mm contactless HWS, Entegris also offers secondary packaging to further ensure that wafers arrive safely and damage-free. This secondary packaging complies with the ISTA® 2A Standard.

### Applications

- Advanced chip designs for 3D, 2.5D, MEMS, LED and power semiconductors
- Thin 3D, lens or bumped wafers

### Features and Benefits

Features	Benefits
Stackable configuration	Increases shipping density Safely stores and transports up to 25 wafers of varying thicknesses Enables automation compatibility
Rugged, engineering-grade polymer construction	Design eliminates the need for TYVEK interleaf wafer separators or PE foam Perimeter support ring <ul style="list-style-type: none"> <li>• Minimizes the potential for surface area damage and interleaves contamination to finished wafers</li> <li>• Eliminates the likelihood of scuffed or marred wafers or bump damage on finished wafers</li> </ul>



### Specifications

Wafer size:	300 mm	
Wafer capacity:	25	
Wafer thickness:	Variable (150 µm to 1100 µm)	
Wafer shipper dimensions:	Length	328 mm (6.93")
	Width	328 mm (6.93")
	Height	111 mm (3.55")
	Weight*	1.752 kg (3.86 lb)

\*Includes 26 rings

## Performance Data

The performance data and physical properties in the following table are based on internal product testing. Each sample was loaded with 26 perimeter support rings and 25 wafers. Single-pack secondary packaging was used. Other details about the testing are as follows:

- Performed internal drop tests on two samples using both 150 micron and 775 micron thick wafers
- Passing results rendered for both samples with standard thickness and thin Si wafers for all drop heights tested
- No unlatching or visual damage to the shippers or rings
- ISTA 2A testing performed with passing results

Property	Test Method	Typical Values
Specific gravity	ASTM D-792	0.97 g/cc
Tensile strength	ASTM D-638	33.3 MPa
Tensile modulus	ASTM D-638	2,207 MPa
Tensile elongation	ASTM D-638	9.7%
Flexural modulus	ASTM D-790	2,069 MPa
Notched izod	ASTM D-256	42.4 J/m
Unnotched izod	ASTM D-256	742 J/m
Volume resistivity	ASTM D-257	10 <sup>1</sup> -10 <sup>3</sup> ohms-cm
Surface resistivity	ASTM D-257	10 <sup>3</sup> -10 <sup>8</sup> ohms/sq.

*Note: Properties may be affected by the molding techniques and by the size and shape of each item molded. Favorable results are not guaranteed, and assurances cannot be implied that all molded articles have the sample properties as those listed in the previous table.*

## Ordering Information

Part Number	Description
HWS300C-101-61C02M	Horizontal wafer shipper including 26 rings
HWR300-26PK-61C02M	26-pack replacement rings
HWS300C-1PK-KIT	1-pack kit – secondary packaging
HWS300C-1PK-CUSH	Cushion – secondary packaging
HWS300C-1PK-BOX	Box – secondary packaging

## For More Information

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [www.entegris.com](http://www.entegris.com) and select the Customer Service link for the center nearest you.

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