



## SMARTSTACK® CUSHIONS

*Safely protect and transport finished wafers in full, thin or ultra-thin thicknesses*

### Overview

Decreased wafer thicknesses, driven by smart card and thin profile or stacked IC applications, require superior shock absorption performance in materials used in “horizontal” wafer or “coin stack” shipping applications.

SmartStack® cushions provide the mechanical, ionic and outgassing performance essential to maintain wafer integrity during transport, storage or shipping.

### Features

- ESD safe for maximum wafer/device protection
- Automation-friendly
- Closed-cell, low-particle, low-ionic, amine-free material for increased protection against die bond corrosion and particle contamination
- Optimized density and thickness accommodates any wafer thickness
- Non-sloughing properties for reduced particles
- Compatible with many wafer process technologies, e.g. copper
- *devicecare.com* online packing calculator determines the proper number of cushions to use, based on the number of wafers, to maintain wafer integrity



### Wafer Sizes

- 150 mm
- 200 mm
- 300 mm

### Specifications

- Thickness: 3.0 mm (0.118")
- Packaged double-bagged, heat-sealed
- Sold in full bag quantity (100)
- Material: closed-cell polyethylene, antistatic
- Color: pink

### Ordering Information

Part Number	Wafer Size	Description
HWS150-100-CCPF	150 mm	SmartStack (pink)
HWS200-100-CCPF	200 mm	
HWS300-100-CCPF	300 mm	

## Physical Specifications

Property	Test Method	Units	Typical Values
Material	–	–	Closed-cell polyethylene
Color	–	–	Pink
Density (nominal)	ASTM D3575-91	PCF	1.7–3.1
Surface resistivity	STM 11.11 @25% Rh	ohms/sq.	<10 <sup>12</sup>
Static decay	101C M4046.1 MIL-B-81705C	volts	<2 sec
Tensile strength	ASTM D882	MPa	72.2 PSI/min
Elongation at break	ASTM D882	percent	100
Tear strength	ASTM D1004	lbs/in	18.7 min

*The information on physical properties included in this document is based on our experience to date, and we believe it to be reliable. Data is obtained from specimens molded under controlled conditions from representative samples of the compound described. Properties may be affected by the molding techniques and by the size and shape of the item molded. We cannot guarantee favorable results and no assurances can be implied that all molded articles have the sample properties as those listed.*

### Organic Contamination Limits

Outgassing	<210 µg/g
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### Ion Contamination Limits\*

Fluoride (F)	<500
Bromide (Br)	<500
Chloride (Cl)	<800
Nitrite (NO <sub>2</sub> )	<500
Sodium (Na)	800
Ammonium (NH <sub>4</sub> )	<600
Magnesium (Mg)	<800
Calcium (Ca)	<2500
Potassium (K)	<1800
Nitrate (NO <sub>3</sub> )	<800
Sulfate (SO <sub>4</sub> )	<1400
Phosphate (PO <sub>4</sub> )	<500

\*Values are measured in ng/g

## For More Information

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