

SmartStack® Cushions

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

Decreased wafer thicknesses, driven by 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 & BENEFITS

- 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
- Online packing calculator determines the proper number of cushions to use, based on the number of wafers, to maintain wafer integrity

<https://www.entegris.com/en/home/resources/technical-information/calculators-and-tools.html>

WAFER SIZES

Part number	Wafer size
HWS150-100-CCPF	150 mm
HWS200-100-CCPF	200 mm
HWS300-100-CCPF	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

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 ¹²
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	lbf/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 ng/g
Bromide (Br)	<500 ng/g
Chloride (Cl)	<800 ng/g
Nitrite (NO ₂)	<500 ng/g
Sodium (Na)	800 ng/g
Ammonium (NH ₄)	<600 ng/g
Magnesium (Mg)	<800 ng/g
Calcium (Ca)	<2500 ng/g
Potassium (K)	<1800 ng/g
Nitrate (NO ₃)	<800 ng/g
Sulfate (SO ₄)	<1400 ng/g
Phosphate (PO ₄)	<500 ng/g

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