

# ORMET® SMT 8120



## PRODUCT DESCRIPTION

**Ormet SMT 8120** is designed for double-sided assembly applications as a replacement for solder paste and SMT adhesive. **Ormet SMT 8120** is applied and processed like solder paste, but does not remelt, so it can be used to produce double-sided assemblies without the need for an SMT adhesive.

## DEPOSITION GUIDELINES

Ormet SMT 8120 is designed for stencil printing using standard SMT printing equipment.

Typical dispense parameters are:

- Stencil: SS or E-Formed
- Stencil Thickness: 0.003" - 0.006" (75μ - 150μ)
- Aperture Reduction: 5-20%
- Squeegee: Stainless Steel
- Squeegee Angle: 60 degrees
- Squeegee Speed: 0.75 in/s
- Squeegee Force: 1.0-1.25 lb/linear inch
- Stencil Life: 6 hours continuous print

## FEATURES AND ADVANTAGES

- SAC 305 solder paste-like handling and processing
- Low bleed/slump formulation for tight component spacing
- Type 5 alloy size
- **No remelt in secondary reflow**
- Excellent volume resistivity
- High mechanical strength

## SINTERING METHOD

Ormet SMT 8120 is designed to be sintered in an inert environment with an oxygen content less than 500 ppm and a dwell temperature of 220°C (or greater) for a minimum of 60 seconds. An SMT reflow oven can be used to achieve desired performance. A recommended reflow profile is shown in Figure 1.

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## TYPICAL PROPERTIES, PRE-SINTERED

PROPERTY	UNIT OF MEASURE	TYPICAL VALUE
Paste Color "As Received"	Visual	Copper
Filler Type		Copper and Tin Alloy
Nominal Particle Size	Micron	<33
Viscosity at 10 RPM	Malcolm, Pa·s	170
Work Life at 25°C	Hours	24
Storage Life, < -10°C	Months	12

## TYPICAL PROPERTIES, POST-SINTERED

PROPERTY	UNIT OF MEASURE	TYPICAL VALUE
<b>Metal Loading</b>	weight percent	92
<b>Volume Resistivity</b>	$\mu\Omega \cdot \text{cm}$	24
<b>Effective Thermal Conductivity</b>	W/mK	20
<b>Coefficient Thermal Expansion</b>	ppm/C	22
<b>Shear Strength, Room Temp</b>	kg/mm <sup>2</sup>	4.0
<b>Shear Strength, 260°C</b>	kg/mm <sup>2</sup>	2.5

## POST-SINTERING METHOD

Ormet SMT 8120 is designed for no-clean applications and will leave benign, electrically inert residues on surfaces. Ormet recommends testing adhesion compatibility with molding compounds and coating materials to determine if a post sintering cleaning process is required.

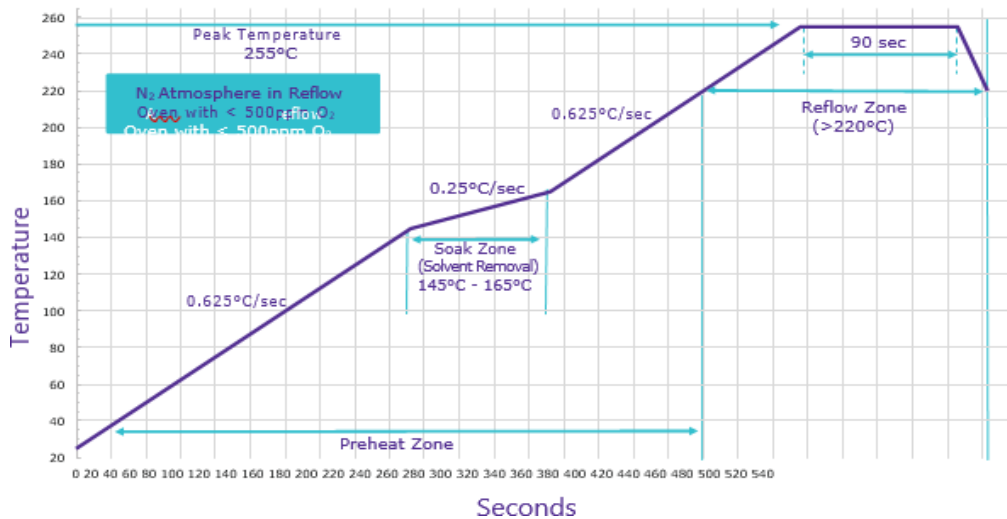
## PACKAGING AND SHIPPING

Ormet SMT 8120 is available in 100g, 250g and 500g jars or 250g and 500g cartridges. The Ormet SMT 8120 is shipped in low-temperature containers and should be placed into cold storage (-10°C or below) immediately upon receipt. Shipping temperature indicators are available upon request.

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**FIGURE 1**  
**Recommended Reflow Profile**



## STORAGE AND HANDLING

For best results, Ormet SMT 8120 should be stored at or below -10°C and containers should be kept tightly closed to avoid moisture contamination. Ormet SMT 8120 must be warmed to and held at ambient temperature for a minimum time of 45 minutes prior to use. Ormet does not recommend the use of mixers or centrifuges to accelerate the warm-up time. Ormet also does not recommend refreezing and reusing the paste.

## HEALTH AND SAFETY

Product safety information is available in safety datasheets. Before handling, read safety datasheets and labels on product. Ormet has a comprehensive team of product safety and regulatory compliance specialists available in each area. For further information please see our website, [www.ormetcircuits.com](http://www.ormetcircuits.com), or consult with your local representative.

## GENERAL INFORMATION

The information within the technical datasheet is based upon internal testing conducted by Ormet Circuits, Inc. The application and use of the product is dependent on the customer and is beyond the control of Ormet. Ormet recommends that customers completely characterize this product for use within their applications. Ormet's sole warranty is the product will meet the sales specification in effect at the time of shipment. Specification writers should contact Ormet for sales specification prior specifying material.

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