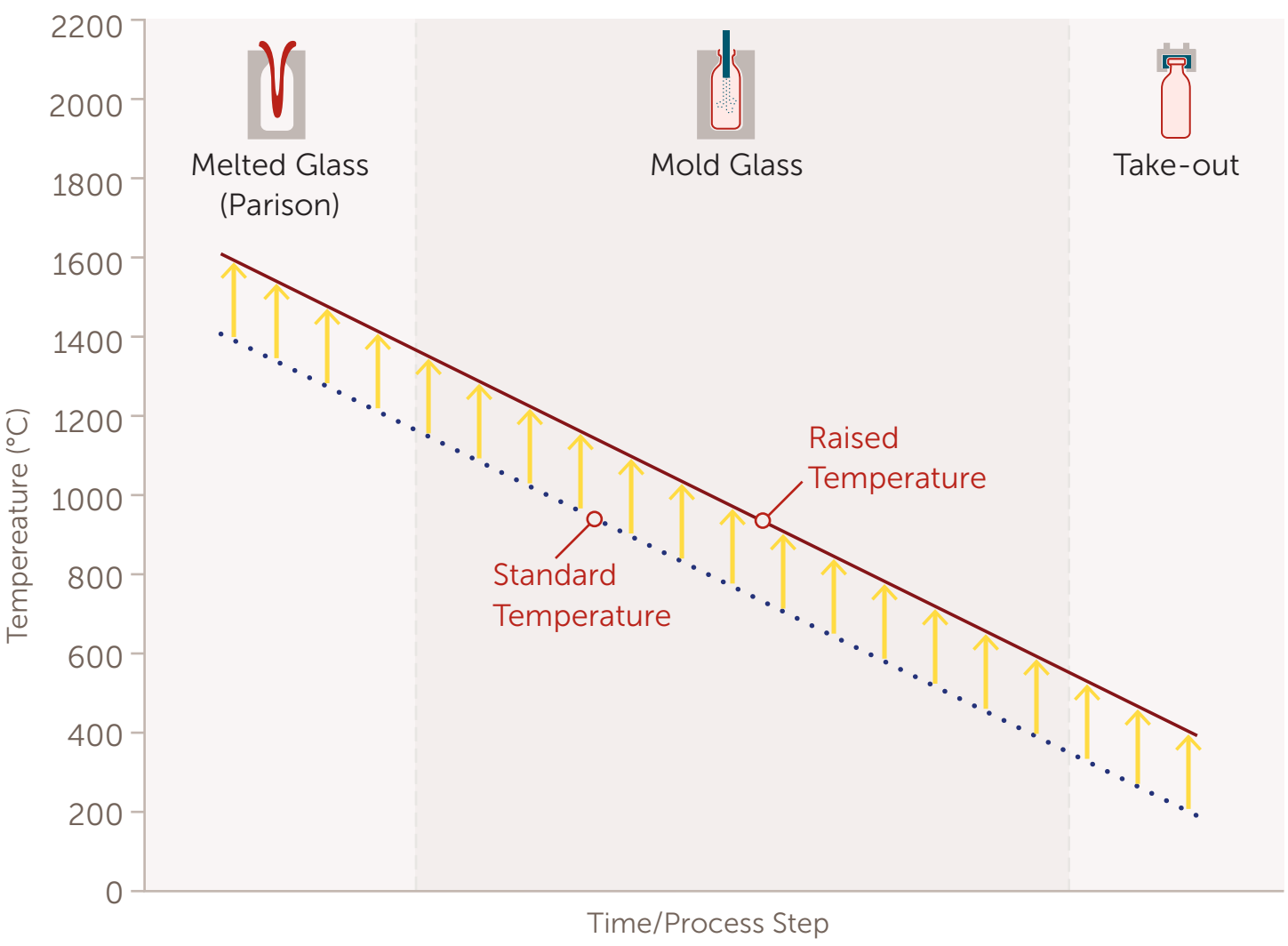


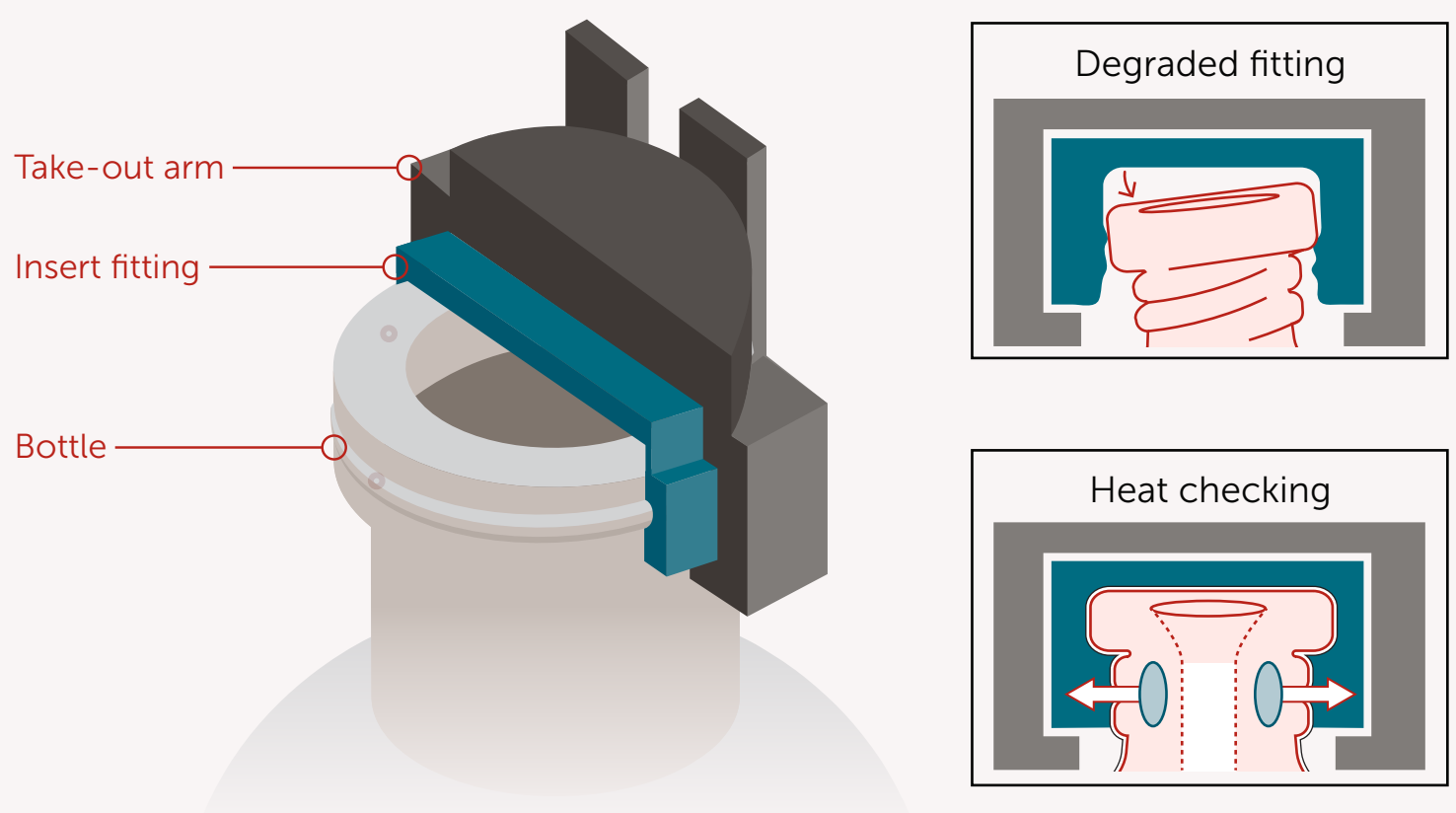
# Enabling Competitive Glass with Custom Graphite Inserts

By melting and molding glass at higher temperatures, manufacturers can create stronger, thinner, more lightweight bottles. However, extra heat at the beginning of the process leads to extra heat at the take-out step. Learn how Entegris' advanced materials science expertise provides a solution that withstands the heat and does not compromise yield or process speed.



## IMPACT OF THE TAKE-OUT INSERT MATERIAL

Increased heat during manufacturing increases lost product risk during the take-out process. There are two ways that the custom-fitted insert can lead to loss: droppage resulting from a degraded insert fitting poorly, and checking resulting from heat conductivity of the insert material.



## GLASS FITTING MATERIAL PERFORMANCE COMPARISON

### Plastic

Plastic fittings are not durable at higher temperatures.



Strength	?
Durability	✗
Withstands heat	✗
Prevents defects	✓
TCO	✗

### Brass

Brass fittings are durable at high temperatures, but high thermal conductivity leads to checking.



Strength	✓
Durability	✓
Withstands heat	✗
Prevents defects	✗
TCO	✗

### Standard Graphite

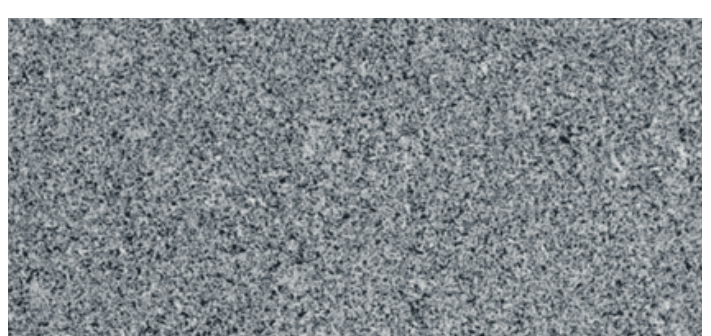
Graphite thermal conductivity goes down as the temperature goes up. However, standard graphite can be brittle and wears quickly.



Strength	✗
Durability	✗
Withstands heat	✓
Prevents defects	✓
TCO	✗

### GLASSMATE® Graphite

GLASSMATE graphite is resistant to and insulative at hot temperatures and is structurally consistent. Our graphite provides exceptional strength and durability.



Strength	✓
Durability	✓
Withstands heat	✓
Prevents defects	✓
TCO	✓

## ENTEGRIS' GLASSMATE GRAPHITE TAKE-OUT INSERTS ENABLE HIGHER YIELD

By enabling a high-temperature manufacturing process, GLASSMATE graphite take-out inserts help produce a more competitive, higher-quality glass product without sacrificing yield or process speed.

Learn More

[www.poco.entegris.com/glass-handling](http://www.poco.entegris.com/glass-handling)