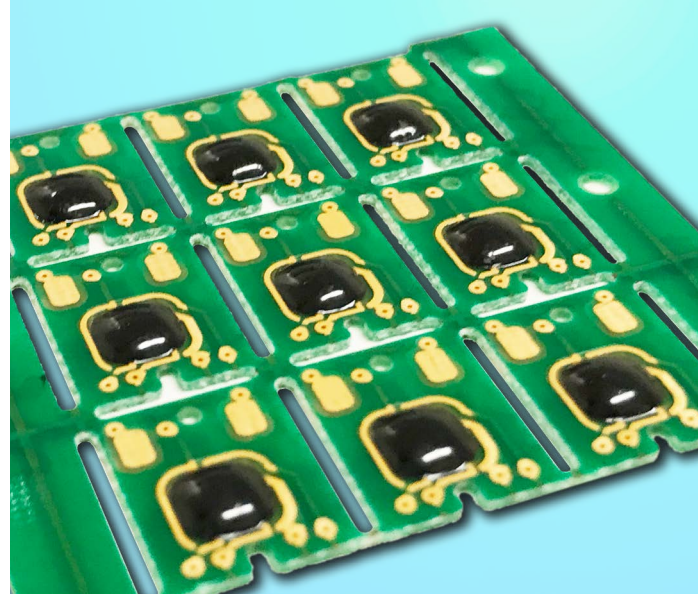
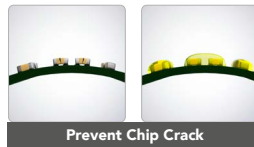
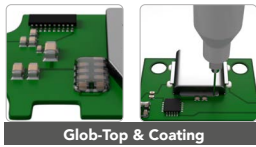
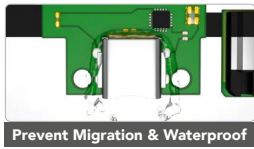


# ALPHA<sup>®</sup> HiTech<sup>™</sup> Encapsulants

One Component, Intermediate Temperature, Fast Heat Curable Materials

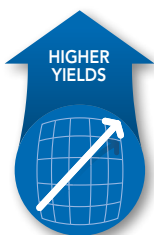
## Encapsulate Assembled Chips and IC Devices

ALPHA HiTech Encapsulants are one component, intermediate temperature, fast heat curable materials which are designed to mechanically protect assembled chips and encapsulated IC devices from dropping off or cracking. These encapsulants are formulated for applications in portables (e.g. smartphones) requiring extra reliability protection.



## KEY FEATURES

- Specially formulated Thixotropic Index (TI) for optimal dispensing performance
- Excellent non-sagging property to minimize spread after dispensing process
- Exhibit excellent water proofing protection
- Prevent migration formation
- Excellent adhesion property on FR4, flexible polyimide and chip components
- Halogen Free



alpha 

ASSEMBLY SOLUTIONS

# ALPHA<sup>®</sup> HiTech<sup>™</sup> Encapsulants

One Component, Intermediate Temperature, Fast Heat Curable Materials

## ALPHA HiTech EN31- 4007 Series

Its excellent flexibility allows it to dynamically flex in tandem with components and prevent cracking, especially in FPCB assembly process. These products have been tested to provide excellent adhesion on FR4, flexible polyimide (FPC) and PET substrates. Users of ALPHA HiTech EN31-4007 Series of encapsulants have the option to perform rework as needed as the products are highly reworkable.

### Key Benefits

- Excellent impact bending
- Excellent drop shock
- Excellent impact resistance
- Highly reworkable
- Imparts water proofing property
- Complies with RoHS Directive 2011/65/EU
- Halogen Free
- Available in pale yellow, black and fluorescent colors

## ALPHA HiTech EN21- 4210

It has a high hardness property which makes it very suitable for assembly of components requiring excellent reinforcement strength. ALPHA HiTech EN21-4210 is a non-reworkable encapsulant product option.

### Key Benefits

- Excellent impact bending
- Excellent drop shock
- Excellent impact resistance
- Halogen Free
- Impart water proofing property
- Complies with RoHS Directive 2011/65/EU

## Material Properties Comparison

ALPHA HiTech		EN31- 4007 Series	EN21- 4210
Typical Uncured Material Properties			
Color		Pale Yellow, Black and Fluorescent	Pale Yellow and Fluorescent
Malcom	rpm	30	30
PC-10A Viscosity	kcps/25°C	17.0 - 23.0	8.0 - 15.0
Thixotropic Index		≥ 3.5	≥ 3.0
6 months Storage Temperature, °C		1 -10	1 -10
Pot Life, days		20	3
Cure Condition, °C/min		135/5	150/10; 130/20
Typical Cured Materials Properties			
Tg (°C)		20 - 30	45 - 55
CTE, TMA (ppm)	α1	50 - 80	50 - 80
	α2	175 - 225	185 - 235
SIR per J-STD-004B (40°C/90%RH, 168hrs)		> 1 X 10 <sup>8</sup>	> 1 X 10 <sup>8</sup>
Shore D Hardness (25°C)		30 - 40	75 - 85



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