

# Encapsulation Characteristics for WLP & PLP Taskforce TC Meeting Report

## Taskforce Leaders:

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October 22, 2021

# Background

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- Mold resin material characteristics are specified for leadframe package/ BGA packages, but there is no specification for encapsulation characteristics for PLP panel.
- PLP encapsulant can be used three different types of encapsulation such as Liquid, Granular and sheet material. So, the characteristics between PLP and BGA/Leadframe packages are required differently.
- The measurement/ testing method for these material characteristics are unknown right now. Need to discuss it under TF activities.
  - The measurement/ testing method needs to be specified for these materials.

## Taskforce Objective

- Charter:

This taskforce will work on the development of standard for WLP/PLP encapsulation characteristics and measurement methodology.
- Scope:
  - This taskforce will develop the WLP/PLP encapsulants characteristics and testing methods of key properties. These include:
  - Material Characteristics. This includes the list of key characteristics of all types of encapsulate.
  - Property measurement methods. This includes flowability or curability of materials.
  - Measurement of key behaviors which related to encapsulated WLP wafers and PLP panels, etc. This includes the warpage measurement methods of wafer or panel.

# Activities Update

- Taskforce Kick-off: November 18, 2020
- Meeting Frequency: Bi-Weekly Meetings:
- Activities Overview:
  - Under development of standard document drafts for 8 encapsulate materials characteristics
  - SNARFs approved for 8 material characteristics on Jan 2021
- Next Step:
  - 7 ballots will be submitted to Cycle8-2021.

# Encapsulate Materials Characteristics for WLP/PLP

Characteristics	Main members	Document Description	Remarks
A1: Wettability	Kamimura	New Standard: SPECIFICATION FOR WETTABILITY OF ENCAPSULATION OFR WAFER LEVEL PACKAGING AND PANEL LEVEL PACKAGING	
A2: Gel Time	Kamimura	New Standard: SPECIFICATION FOR GEL TIME OF ENCAPSULATION FOR WAFER LEVEL PACKAGING AND PANEL LEVEL PACKAGING	
A3: CTE	Matsumoto	New Standard: SPECIFICATION FOR CO-EFFICIENT TEMPERATURE EXPANSION (CTE) OF ENCAPSULATION OFR WAFER LEVEL PACKAGING AND PANEL LEVEL PACKAGING	
A4: Flowability	Kuroda Misawa	New Standard: SPECIFICATION FOR FLOWABILITY OF ENCAPSULATION OFR WAFER LEVEL PACKAGING AND PANEL LEVEL PACKAGING	
A5: Modulus	Kuroda	New Standard: SPECIFICATION FOR MODULUS OF ENCAPSULATION OFR WAFER LEVEL PACKAGING AND PANEL LEVEL PACKAGING	
A6: Viscosity	Kuroda Matsumoto	New Standard: SPECIFICATION FOR VISCOSITY OF ENCAPSULATION OFR WAFER LEVEL PACKAGING AND PANEL LEVEL PACKAGING	
A7: Shear Strength	Matsumoto	New Standard: SPECIFICATION FOR SHEAR STRENGTH OF ENCAPSULATION OFR WAFER LEVEL PACKAGING and PANEL LEVEL PACKAGING	

# Task Force Members

Name		Organization
Last	First	
Tsuriya	Masahiro	iNEMI
Arai	Hidetoshi	Apic-Yamada
Shimamoto	Haruo	AIST
Nakazawa	Jun	Apic-Yamada
Saito	Takashi	Apic-Yamada
Kamimura	Tsuyoshi	Namics
Okoshi	Kodai	Namics
Takashi	Miyasaka	NIDEC-READ
Matsumoto	Takakage	Panasonic
Kanagawa	Naoki	Panasonic
Misawa	Hideki	Shin-Etsu Chemical
Kuroda	Hirofumi	Sumitomo Bakelite
Hatano	Akito	Screen
Yokoe	Yoshiyuki	Toray Engineering
Yamada	Tetsuya	Towa
Hayashiguchi	Shinya	Towa

## **3D Packaging & Integration Technical Committee**

### **Encapsulation Characteristics for WLP and PLP TF**

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