Dispersant for encapsulants

2025.10 (Ver. 1)

MALIALIM® SC Series/ ESLEAM® AD Series ESLEAM® C series

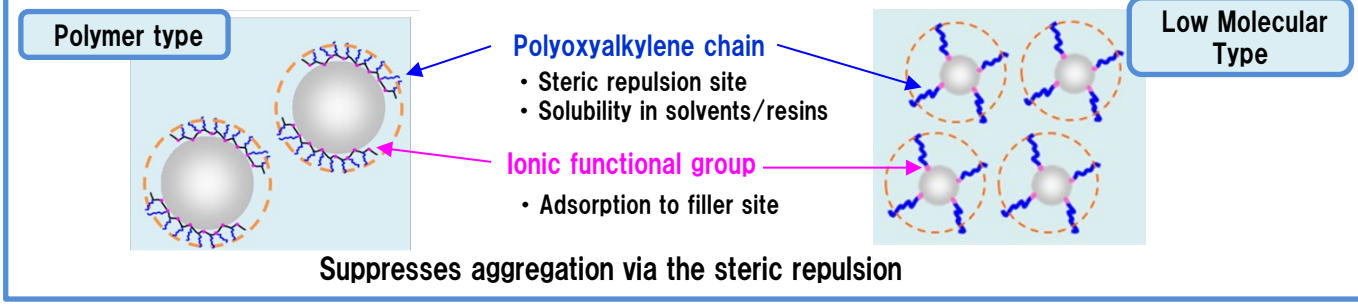
1. Feature

- Possesses excellent dispersing properties for inorganic oxides such as Silica and Alumina, and provides efficacy such as preventing filler aggregation, lowering slurry viscosity, and stabilizing dispersion system.
- Has a high concentration (100%) of active component and does not contain impurities such as alkali metals.
- Modification of chemical structure is available to conform with various resins (e.g., epoxy type), such as changing the polarity of the dispersant.

2. Lineup

Product name	Type	Acid-Base	Features	Applicable Filler
MALIALIM® SC-0505K	Polymer type	Acidity	High polarity product of SC-1015F	Alumina Silica
MALIALIM® SC-1015F			-	
MALIALIM® SC-0708A			Low polarity product of SC-1015F	
ESLEAM® AD-3172M		Basic	-	Silica
ESLEAM® AD-374M			Low polarity product of AD-3172M	
ESLEAM® AD-3284M (Make to order)			High molecular weight product of AD-3172M	
ESLEAM® C-2091I (Make to order)	Low molecular weight type	Acidity	High polarity product of C-2093I	Alumina
ESLEAM® C-2093I			-	
ESLEAM® C-2095I (Developed product)			Low polarity product of C-2093I	

Dispersant's structure and dispersion mechanism



3. Recommended dosage

The recommended amount of dispersant is 0.1 to 5 wt% by the filler weight.
Since the optimal amount of dispersant depends greatly on various factors such as particle size and surface area, we recommend to test at different concentration of dispersant to determine the optimal dosage.

4. Regulatory information*1

Product name	ENCS (Japan)	TSCA (US)	IECSC (China)	ECL (Korea)	ECN (Taiwan)
MALIALIM® SC-0505K	✓	✓	✓	✓*4	✓
MALIALIM® SC-1015F	✓	✓	—*2	—*2	✓
MALIALIM® SC-0708A	✓	—	—*2	—*2	✓
ESLEAM® AD-3172M	✓	✓	✓	—*3	✓*4
ESLEAM® AD-374M	✓	✓	✓	—*3	✓*4
ESLEAM® AD-3284M (Make to order)	✓	✓	✓	—*3	✓*4
ESLEAM® C-2091I (Make to order)	✓	—	—*2	—*3	✓*4
ESLEAM® C-2093I	✓	—	—*2	—*3	✓*4
ESLEAM® C-2095I (Developed product)	✓	—	—*2	—*3	✓*4

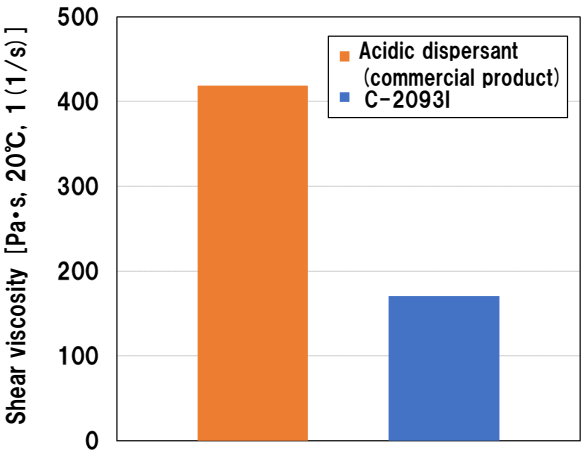
*1 ✓:On list, —:Not on list. Please ask us regarding the registration status of REACH for each product.
*2 Record (Polymer of Low Concern). If exporting to China, please contact our sales representative as exporters/importers are limited.
*3 Polymer of Low Concern. If exporting to Korea, please contact our sales representative as importers are limited.
*4 Please contact our sales representative for declaration or registration depending on quantity.

5. Result of dispersion test

Formulation 1

Materials		Concentration
Filler	Alumina (particle size: 1 μm)	70wt%
Resin	Epoxy resin*1	17wt%
Curing agent	Phenol resin*2	13wt%
Dispersant	No addition Acidic dispersant (commercial product) ESLEAM® C-2093I	1wt% (for filler weight)

*1 Biphenyl novolac epoxy resin
*2 Biphenyl novolac phenol resin



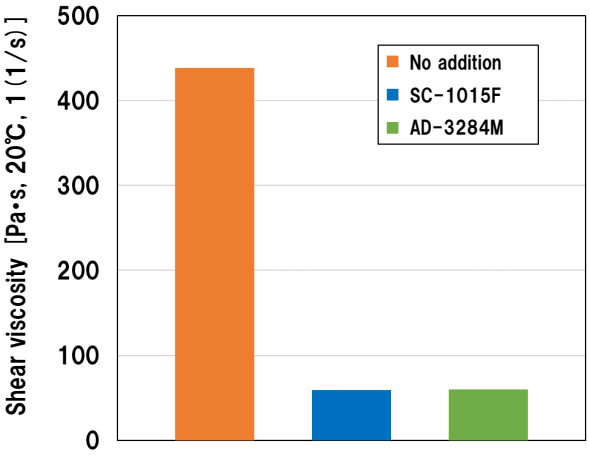
*No flowability when no dispersant was added.

It is possible to lower the viscosity of the epoxy resin with alumina filler.

Formulation 2

Materials		Concentration
Filler	Silica (particle size: 12 μm)	80wt%
Resin	Epoxy resin*3	10.5wt%
Curing agent	Carboxylic anhydride*4	9.5wt%
Dispersant	No addition MALIALIM® SC-1015F ESLEAM® AD-3284M	1wt% (for filler weight)

*3 Bisphenol F epoxy resin
*4 4-Methylcyclohexane-1,2-dicarboxylic anhydride



It is possible to lower the viscosity of the epoxy resin with silica filler.

6. Handling precautions

Please check the latest Material Safety Data Sheet (SDS).

7. Other

This catalogue is made by NOF CORPORATION based on our best knowledge and all of listed data are reference only. (not guaranteed) We recommend to refer our SDS before using our products and special attention should be paid in handing because all chemicals have unknown hazard.

Please contact us when you have any other question.

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