CALT-5089

Hand Lay-up and Cured at Room Temperature Epoxy Resin System

（Germanischer Lloyd (GL) certified）

Applications

- Applied for hand lay-up manufacturing process.
- Suitable for wind turbine blades, marine and automobile body manufacture.
- Suitable for use with carbon fiber

Properties

- Fast curing; get 60%curedunder low temperature in 24 h to proceeding the grinding or bearing operations.
- Fast/ Slow hardener can be freely dispensed to meet the required curing speed.
- Summer/ Winter formulas reduces the affections on viscosity against the temperature.
- Certified by Germanischer Lloyd (GL).

Properties of the Resin			
	CALT-5089A(Summer)	**CALT-5089A(Winter)**	**Standard**
Appearance	Colorless or yellowish viscous liquid		
Viscosity at 25℃[cps]	4,500-6,500	2,200-3,200	GB/T 22314-2008
Density at 25℃[g/cm3]	1.1-1.2	1.1-1.2	GB/T 15223-2008
Epoxide Equivalent[g/eq]	165~175	165-175	GB/T 4612-2008
Properties of the Hardener			
	Harderner 1B	**Harderner 2B**	**Harderner 3B**
Appearance	Light brown liquid	Light brown liquid	Yellowish transparent liquid
Viscosity at 25℃[cps]	100-300	100-300	9-14[cps]
Density at 25℃[g/cm3]	0.95-1.05	0.95-1.05	0.90-1.00
Acid Equivalent [mgKOH/g]	450-550	450-550	450-550

Processing Data	
Resin:Hardener	Ratio by weight
CALT-5089A: hardener 1B	100:30
CALT-5089A: hardener 2B	100:30
CALT-5089A: hardener 3B	100:30

Pot life

	Mix type	Hardener 1B	Hardener 2B	Hardener 3B
Pot life (in minutes) GB/T 22134-2008	10℃	28±8	30±8	-
	25℃	18±8	20±8	60±20
	35℃	-	——	28±5

Initial Mix Viscosity

	Mix type / Resin type	Hardener 1B	Hardener 2B	Hardener 3B
Initial Mix Viscosity (in cps) GB/T 22134-2008	LT-5089A(Summer)	1,000-2,000	1,000-2,000	1,000-2,000
	LT-5089A(Winter)	800-1,500	800-1,500	800-1,500

Properties of the cured Resin

Epoxy/Hardener combination	LT-5089A + hardener 1B	LT-5089A + hardener 2B	LT-5089A + hardener 3B	Standard
Flexural strength [MPa]	100-120	110-135	105-125	GB/T 2567-2008
Flexural modulus [MPa]	2,800-3,200	3,000-3,500	2,800-3,300	GB/T 2567-2008
Tensile strength [MPa]	65-80	70-85	70-85	GB/T 2567-2008
Tensile modulus [MPa]	2,800-3,200	2,800-3,500	2,800-3,500	GB/T 2567-2008
Elongation at tensile strength[%]	>4	>4	>5	GB/T 2567-2008
Compressive strength[MPa]	90-105	100-120	95-110	GB/T 2567-2008
Glass transition temperature Tg [℃]	>70	>75	>75	GB/T 19466.2-2004
HOREhardness[D]	>75	>80	>80	

Properties of GFRP				
Reinforced materials	1,200 GSM Triaxial Glass fiber Cloth			
Product type	LT-5089A + hardener 1B	LT-5089A + hardener 2B	LT-5089A + hardener 3B	-
Tensile strengthat @ 0°[MPa]	135-160	135-160	135-160	ISO 14125-1998
Tensile modulus@ 0°[MPa]	6,000-8,000	6,000-8,000	6,000-8,000	ISO 14125-1998
Tensile strength @ 0°[MPa]	80-100	80-100	80-100	ISO 527-4-1997
Tensile modulus @ 0°[MPa]	6,000-7,500	6,000-8,000	6,000-7,500	ISO 527-4-1997
Longitudinal-transverse shear strength[MPa]	42-52	45-55	42-52	ISO 14129-1997
Longitudinal-transverse shear modulus[MPa]	2,800-3,200	3,000-3,500	2,800-3,300	ISO 14129-1997
Resin content [%]	35-40	35-40	33-38	ISO 1172-1996
Manufacturing process	Hand Lay-up			
Curing condition:	25℃×24h+70℃×6h or 50℃×4h+70℃×6h			

Storage and Packaging

Packaging	
Resin:	Steel Drum:200kg/ea; Steel Drum, PlasticBucket: 20kg/ea; Plastic Bottle: 5kg/ea.
Hardener	Steel Drum:200kg/ea; Steel Drum, PlasticBucket: 20kg/ea; Plastic Bottle: 5kg/ea.
Note：	Customized package is available
Storage	
1. Store between**5-30**℃.	
2. Do not expose under sunlight tand store in clean, cool and dry place.	
3. Seal immediately after use.	
4. Recommended product shelf life -12 months.	