

HNS259 EPOXY PREPREG PRODUCT DATASHEET



PRODUCT DESCRIPTION

HNS259 epoxy prepreg contains a reinforced matrix specifically designed for advanced structural composites applications.

Designed for vacuum bagging and compression molding processes. It tends to create a more flawless and high-quality surface than the H469 prepreg system. It stands out with its time saving and easy shaping feature in process applications.

BENEFITS AND FEATURES

- Excellent tack life, minimum 30 days at 23°C.
- Versatile cure temperature 90 - 140°C (194 – 284 °F)
- High mechanical properties.
- Excellent surface finish
- Provides safe performance in various industrial environments.
- Suitable for vacuum and autoclave curing and low pressure curing. (1bar)
- Long storing life, 4-6 weeks @ 20-23°C
- At RT, it passes to the B-staging in 2 days at most.

TYPICAL REINFORCEMENTS

Fabric*	SM Carbon	E-Glass	Silica Plain
FAW and Product Form	<ul style="list-style-type: none">• 300-600 TF** UD,• 200-1600 Stitched Fabric (Biaxial, Triaxial)	<ul style="list-style-type: none">• 100-600 PW/2x2Twill	<ul style="list-style-type: none">• 300-600 PW

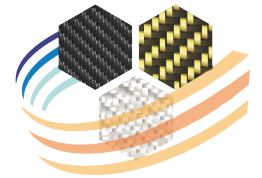
*Please contact with us for further option.

**Thermal Fixed

TYPICAL APPLICATIONS

- Wind Applications
- Marine Application
- Automotive
- Recreational Composites
- High Performance Sports Equipments.

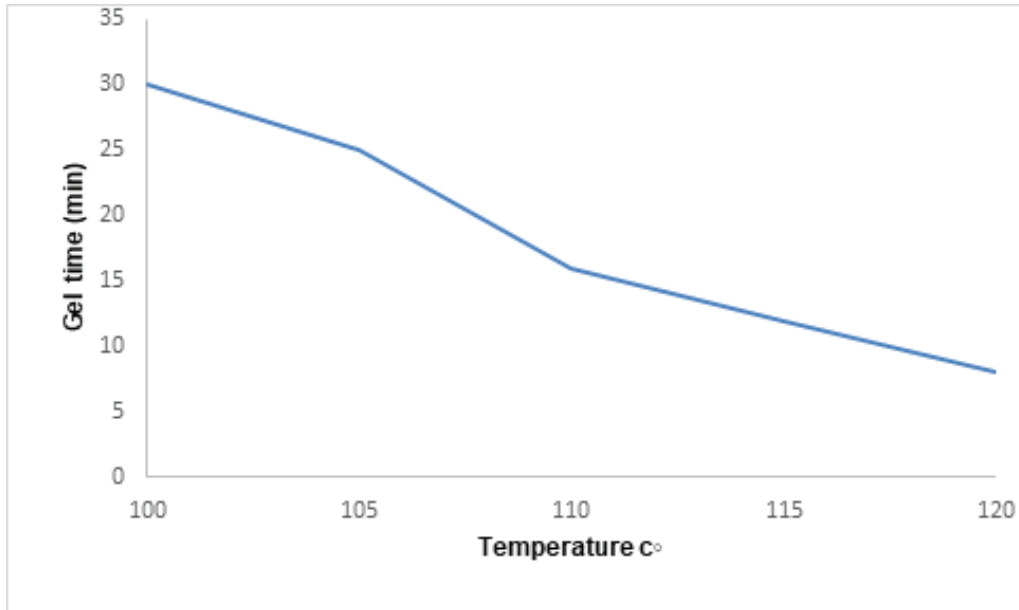
This technical datasheet is not a specification. All information is believed to be accurate with the performance, storage, and other characteristics of the product without acceptance of liability. Users are held to do their tests to check the suitability of the product for its particular purpose.



GCI KOMPOZİT

RESIN PROPERTIES

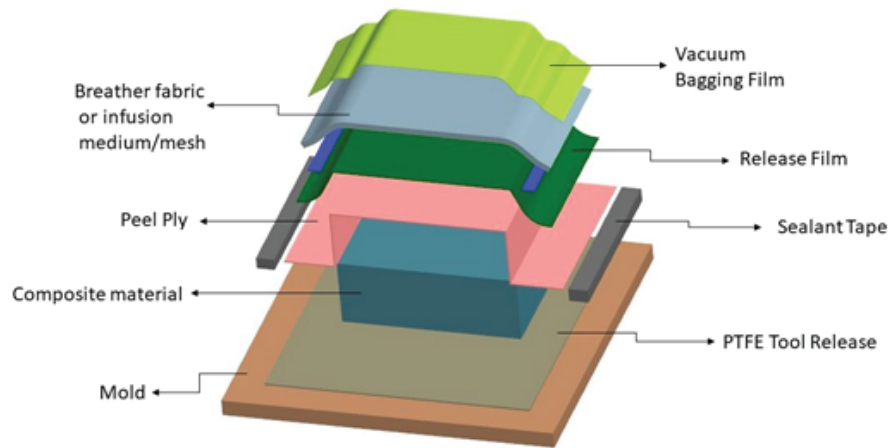
The HNS259 resin system is a hardened epoxy system. (With prescribed 140 °C curing conditions)
The resin system is mainly intended for industrial applications and is suitable for carrying high loads.



CURING SPECIFICATIONS

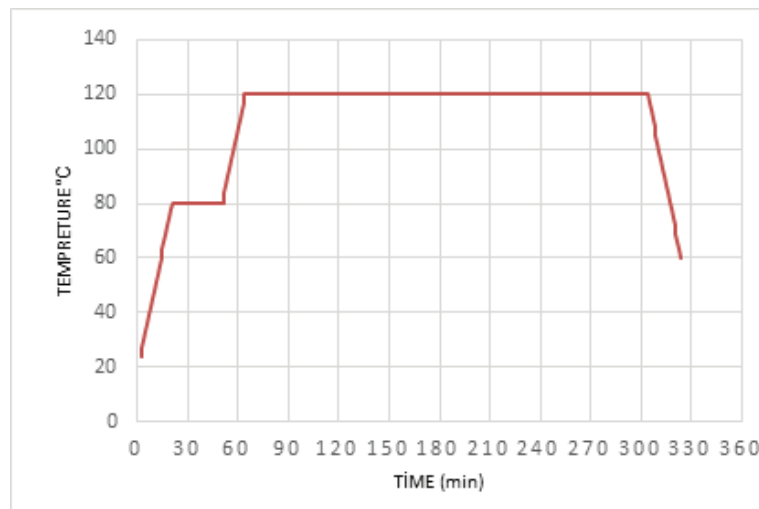
Specification	Minimum	Method
Curing temperature (°C)	160°C	DSC
Curing time (Hr) @ minimum curing temperature	40 min	DSC
Glass transition temp. T _g (°C)	102°C	DSC

TYPICAL OVEN VACUUM CURING CYCLE



- Apply a 24" Hg vacuum for 5 minutes before beginning the heat cycle.
- Raise laminate temperature from room temperature to 80°C (176°F) within 30-40 min.
- Hold laminate at 80°C (176°F) for 30 min.
- Raise laminate temperature from 80°C (176°F) to 120°C (248°F).
- Hold laminate at 120°C (248°F) for 240 min.
- Cool the laminate to at least 80°C (176°F), before releasing vacuum pressure.

Notice: It should be understood that the curing period will begin only after the pre-impregnation temperature reaches the recommended temperature.



PRESS MOLDING CURING CYCLE (140 °C)

- 1) Preheat the press to 140 °C
- 2) Place the laminate in the hot press and keep the laminate at this temperature by applying 3 - 7 bar (0.3-0.7 MPa) pressure for 60 minutes.
- 3) Remove the laminate from the mold (cool below 95-100 °C if possible)

ALTERNATIVE CURING CYCLES

Temperature (°C)	Gel time (mins)	Dwell time (Hrs:mins)	DSC Tg (°C)
90	-	10:00 h	101-111
100	26-28	-	-
110	12-14	4:00 h	122-132
120	5-7	4:00 h	127-132
140	-	1:00 h	-

SHELF LIFE, STORAGE CONDITIONS AND HANDLING

HNS259 prepregs are wrapped in a barrier film immediately after impregnation. During storage and transportation:

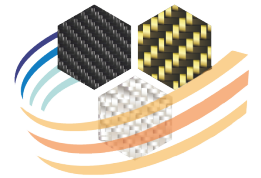
Notes should be taken into account:

- It is preferred to store HNS259 prepregs in the original packaging barrier film at -18°C or +4°C. Preparation before use

The roll should be removed from the refrigerator and kept tightly closed until it reaches room temperature.

- It is highly recommended to process the prepreg in a clean area where the relative humidity is $\leq 52\%$ and the ambient temperature is $\leq 52\%$.

Temperature	Time
4°C (40°F)	6 months
-18°C (0°F)	12 months
Working Life at 24°C (75°C)	4 weeks



GCI KOMPOZİT

MECHANICAL PROPERTIES

VACUUM CURED STITCHED FIBER LAMINATES

Reinforcement	Fiber Direction	Test Method	MI/MA	Units	Mechanical Properties Dry
Tensile Strength	0°	TS EN ISO 527-4	MI MA	MPa	548,037
Tensile Modulus	0°	TS EN ISO 527-4	MI MA	MPa	49376
Compression Strength	0°	ASTM D695	MI MA	MPa	>118
Flexural Strength	45°	TS EN ISO 14125	MI MA	MPa	721
Flexural Modulus	45° 0°	TS EN ISO 14125	MI MA	GPa	41808

SAFETY NOTES

Usual precautions, as follows, must be considered:

- During lamination, workers must avoid skin contact by wearing appropriate disposable protective gloves.
- Clean protective coveralls or equivalent clothes must be worn before laminating and also sanding.
- Protective glasses must be worn to avoid eye contamination. In case of contamination, eyes must be flushed for 15 min and then medical treatment must be applied.
- After working, hands and contaminated skin, if any, have to be washed with soap and warm water. This has to be implemented as a routine practice.