NIGHTINGALE SUPPLY

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TECHNICAL DATA SHEET

EPOXY: ER300 TROPICAL

- **DESCRIPTION:**

Epoxy ER300 TROPICAL is a low viscosity laminating system especially developed for the production of complex composite parts. The system produces excellent profiling and can be cured at ambient temperature and post cured to provide additional cross-linking and higher physical properties. The system is completely colour coded to provide easy visual identification of mixing when used in the workshop, as well as allowing easy viewing of any air entrapment in laminates with white backgrounds, etc.

- **MIXING & HANDLING:**

Epoxy ER300 RESIN and ER300H HARDENERS should be combined in the following ratio.

	Parts by weight
ER300 Resin	4 : 1

The system should only be mixed by weight using digital scales. The resin is available in low viscosity and high thixed versions to allow for various working conditions and laminates.
Hardeners are available in 4 gel times and may be blended to provide specific work times.
*Note: The mix must remain 4 : 1 by weight.

- **GEL TIMES:**

ER300H FAST HARDENER	30 minutes
ER300H SLOW HARDENER	200 minutes
ER300H STANDARD HARDENER	68 minutes
ER300H ULTRA SLOW HARDENER	300 minutes

- **SYSTEM IDENTIFICATION:**

The system has been colour coded for ease of identification of working time of batches used in the workshop as many workshops may have several mixes on the go with various working times required for each mix. This also ensures that hardeners have been added to the resin as often, in busy periods of laminating, a batch is not catalysed.

- **COLOURS:**

ER300 RESIN	BLUE
ER300H FAST HARDENER	RED
ER300H STANDARD HARDENER	ORANGE
ER300H SLOW HARDENER	YELLOW
ER300H ULTRA SLOW HARDENER	GREEN

*Note: When the RESIN and HARDENER are mixed the colour of mix will be visual and will remain in cured laminate.

- **PROPERTIES:**

The following table shows typical properties of system at different cure schedules:-

SYSTEM	CURE	FLEX. Strength Mpa	FLEX. Modulus Mpa	HDT °C	TENSILE Strength Mpa	TENSILE % elongation
ER300/H300 FAST	5hours @ 80°C 16hours @ 50°C 28days @ 20°C	145 110 80	3400 3400 3800	73 62 50	34 35 30	7.3 8.0 6.0
ER300/H300 STANDARD	5hours @ 80°C 16hours @ 50°C 28days @ 20°C	137 116 76	3000 3400 3700	76 63 50	42 43 40	7.0 8.0 7.3
ER300/H300 SLOW	5hours @ 80°C 16hours @ 50°C 28days @ 20°C	123 104 60	3000 3200 3700	72 63 48	40 48 23	7.0 9.0 6.3
ER300/H300 ULTRA SLOW	5hours @ 80°C 16hours @ 50°C 28days @ 20°C	118 103 90	2600 2700 3000	72 62 48	73 35 35	9.0 8.0 8.3

- **SURFACE PREPARATION:**

Suggested pre-treatments for various surfaces are as follows:

TIMBER:
Abrade with sandpaper, ensuring the surface is clean, dry (moisture content of 8-12%) and dust free. Wood free of grease and oils require no pre-treatment.

EPOXY GLASS LAMINATES:
Degrease and abrade with medium sandpaper and degrease again prior to laminating.

POLYESTER LAMINATES:
Abrade the laminate with medium to coarse sandpaper and clean free of dust. Surface may be washed with detergent and dried prior to laminating.

STEEL:
Remove loose, flaky rust and any loose paint. Sand down surfaces with coarse sandpaper or sand blast and degrease.

ALUMINIUM:
Treat in similar fashion as steel for preparation. Bonding of laminating to aluminum should commence as quickly as possible after surface treatment due to rapid oxidization of the aluminum.

PVC FOAM:
Simply ensure that the surface is dry and totally free of dust and grease prior to bonding or laminating.

ADDITIVES:
Fillers such as Q-Cells, Glass Bubbles, Microballoons as well as Aerosil can be added to form filling, fairing and bonding compounds. The amount of filler to be added will depend on the nature of the job.

Care should be taken not to over fill the resin as this will result in a very dry mix thus lowering the adhesive qualities of the compound.

DEGREASERS:
Trichlorethylene, Acetone and Methylene Chloride Tetrachloroethylene are good degreasing agents. Alcohol, petrol and paint thinners ARE NOT.

- **WORKING CONDITIONS:**

The ideal working environment is between 15°C and 25°C. At these temperatures pot life and the resultant cured material will exhibit good physical properties. Additional heat will accelerate the cure.

PACK SIZES:

ER300 RESIN: 200kg drum, 20kg pail , 4kg bottle
H300 HARDENERS: 10kg pail, 5kg bottle, 1kg bottle

Note: (5) pails of hardener will come with a 200kg drum of resin. These may be ordered in the different geltimes to suit varied applications of a project.

NB: Hardeners are sold separately to resin.

- **STORAGE:**

Store the components at 15° – 20°C, in a dry and covered area. Under these conditions the product will have a shelf life of at least 18 months. After this date the product may be processed only following re-validation. Partly empty containers should be closed tightly immediately after use.

- **HANDLING PRECAUTIONS:**

These products have been formulated with the objective of being as safe as possible, however in common with most epoxy resins and hardeners, consistent skin contact with uncured materials may cause irritation of sensitive skins. For this reason contact with the uncured materials should be avoided at all times.

Recommended working procedures are as follows:

1 Before commencing work make sure that there is a good supply of:-
- Clean overalls, rubber gloves, thin cotton inner gloves and face shields
- Barrier cream
- Waterless hand cream
- Water
- Apply barrier cream to exposed skin

2 During work:-
- If material comes in contact with skin, wipe off immediately with paper towel or rags and wash with water (use waterless hand cleaner if necessary).
- DO NOT use solvents to wash skin
- If overalls or inside of gloves become contaminated, remove immediately and replace with clean overalls and gloves.
- Re-apply barrier cream after washing.
- If the material is used in fully confined spaces, a means of removing fumes should also be provided as well. It is recommended to wear a respirator.

Note: All mandatory and recommended industrial hygiene procedures should be followed.

- **FIRST AID:**

If material enters eyes, flood with water for at least 15 minutes and then consult a doctor.
If skin rashes or allergic responses (such as wheezing or swelling) occur, consult a doctor.
If swallowed DO NOT induce vomiting. Drink copious amounts of water and contact a doctor or the Poisons Information Centre.