



ALH Project File

# UGR - FORMULA STUDENT RACING TEAM

NP1003 Two Part Epoxy Resin

\*\*\*\*\*



UGR Formula Student

# The NP1003 Epoxy Resin Solution Application

**Driver Cockpit : Fire Retardant Firewall .** The team needed a two part resin that was load resistant, flame retardant and capable of withstanding a puncture test conducted at each competition.

ALH-Systems has partnered with the University of Glasgow Racing Team (UGR) for Formula Student, Europe's most established educational engineering competition that aims to encourage more young people to take up a career in engineering.

Formula Student is an annual competition run by the Institution of Mechanical Engineers where student teams race small-scale formula-style cars judged on various criteria. The competition allows students to demonstrate their engineering knowledge and skills, test and improve their capabilities, and gain experience in teamwork, time management, project management, budgeting, and presentation.

The UGR team competed in the EV power train class in 2023 and had a successful first year with an electric vehicle, placing 15th/~65 overall in the competition and 3rd in the design event.

The UGR team used the NP1003 resin in testing towards the end of their car build last year. They are looking to implement it into their fire-retardant firewall within the driver cockpit for the season 2024, having carried out some load and flame testing over the past few weeks with successful results. The firewall must withstand puncture tests at the competition, so various layup patterns and layers using the resin were tested with a successful outcome.

ALH Systems produces a two-part epoxy resin called NP1003 that is approved by UL 94 V-0. This resin cures at room temperature and has a high gloss finish. It is flame-retardant, thermally conductive, and slightly flexible to accommodate thermal changes. It is ideal for outdoor use and is a great fit for the UGR 2024 Formula Student car.

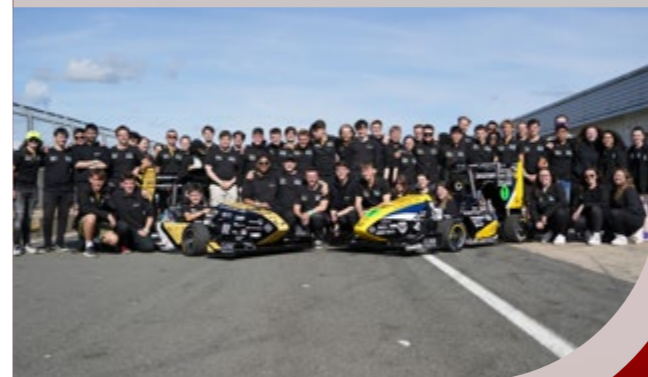


## Formula Student

Formula Student (FS) is Europe's most established educational engineering competition and celebrated its 25th anniversary in 2023. The competition is run by the Institute of Mechanical Engineers.

Backed by industry and high-profile engineers such as Patron, Ross Brawn OBE, the competition aims to develop enterprising and innovative young engineers and encourage more young people to take up a career in engineering, with over 100 university teams taking part every year.

The project usually forms part of a degree-level project and is viewed by the motorsport industry as the standard for engineering graduates to meet, transitioning them from university to the workplace. It is a kite-mark for real-world engineering experience, combining practical engineering experience with soft skills including business planning and project management.



## NP1003 Resin

NP1003 General Purpose Epoxy Resin System UL 94 V-0 Approved

NP1003 is a two part epoxy resin system that has been given UL 94 V-0 Approval. The system cures at room temperature to a high gloss finish. It is flame retardant and thermally conductive. The resin system is slightly flexible to allow for thermal fluctuations.

## Key Features

- **High Gloss Finish**
- **Ambient or Elevated Temperature Dispensing and Curing**
- **Contains No Halogens and is Non-Toxic.**
- **Good Thermal Conductivity to Dissipate Heat**
- **UL 94 V-0 Approved**

The NP1003 epoxy system offers an internationally recognized solution to many power supply problems. The water uptake is minimal (0.1%/30 days) and the slight flexibility makes NP1003 useful in most outdoor applications. The excellent thermal conductivity of 0.9 W/m/°K and low expansion coefficient (40 ppm/°C) provide the necessary performance.

# Get In Touch With Us

ALH Systems Limited



+44 (0) 1373 858234  
sales@alh-systems.co.uk  
alh-systems.co.uk



1 Kingdom Avenue  
Northacre Industrial Park  
Westbury  
Wiltshire  
BA13 4WE

Pipe Equipment Specialists



Tel: +44 (0) 1642 769789  
enquiries@pipe-equipment.co.uk  
pipe-equipment.co.uk



66 Dukesway  
Teesside Industrial Estate  
Thornaby  
Stockton-on-Tees  
TS17 9LT

Flowstop Limited



Tel: +44 (0) 1373 858234  
sales@alh-systems.co.uk  
flowstop.co.uk



Unit 3  
Shepcote Business Park  
Europa Drive  
Sheffield  
South Yorkshire  
S9 1XT

