

TECHNICAL DATA SHEET

Description

IML EASYCORE 109FL is a low viscosity, semi-rigid polyurethane resin system exhibiting high electrical strength, dimensional stability and low shrinkage. The system has been designed for the encapsulation and potting of cores for IML applications. IML EASYCORE 109FL is standard available in a twinpack package. IML EASYCORE 109FL developed for the Simco IML systems and is available in the standard colour grey

Features

Anti-static electrical characteristics
Non-toxic Flame retardant
Low viscosity
Long pot life

Specification

Property	Resin	Hardener	Mixed
Colour	Grey	Brown	Grey
Specific Gravity g/ml	1,55	1,24	1,52
Viscosity m.Pa.s @ 25°C	4200	200	2400

Mix Ratio by Weight 10,4: 1
Mix Ratio by Volume 8,3 : 1
Pot life 150g mass @ 25°C 20 - 40 minutes
Gel time 150g mass @ 25°C 40 - 80 minutes

Cure Schedule	Minimum cure	Full cure
	24 hours @ 20°C	1 week @ 20°C
	2 hours @ 60°C	4 hours @ 60°C
	1 hour @ 80°C	2 hours @ 80°C

Typical Properties

Water absorption (24 hrs @ 23°C) 0.11%
Water absorption (168 hrs @ 23°C) 0.33%
Flame retardant Yes
Shore A hardness 78
Thermal conductivity 0.45 W/m.K
Coefficient of thermal expansion 60 – 80 ppm/°C
Weight loss (168hrs @ 130°C) 0.6%
Operating temperature range * -40 to +100°C (continuous service)
Maximum service temperature * 130°C (short term exposure)
Electric strength 16 kV/mm
Dielectric constant @ 100 Hz 4.5
Dielectric constant @ 1 kHz 4.3
Dielectric constant @ 10 kHz 4.1

*application & geometry dependent

The above are typical values and will vary depending on the cured mass and application. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing is suggested to avoid side effects. For maximum properties a post cure may be required.

Combustion

Polyurethanes generally ignite at approx. 415°C. Decomposition is by depolymerisation, liberating the polyol and isocyanate. Pyrolysis decomposition products will consist of: carbon, carbon dioxide, carbon monoxide, hydrogen cyanide, nitriles and water.

Disposal

Provided the resin and hardener have been properly mixed, as per instructions, the resultant material will be chemically inert and therefore able to be land filled subject to local government regulations.

Packaging

IML EASYCORE 109FL is supplied in twinpack form.

Availability

Available through distribution and general@simco.nl

Twinpacks

Twinpacks are pre-weighed resin and hardener components contained in a tough flexible film, separated by a removable clip and rail. Once the clip and rail is removed the resin and hardener is thoroughly mixed within the bag and is immediately ready for use. Mixing will normally take ~ 1 minute due to the low viscosity; but pay special attention to the corners. Twinpacks are ideal for small to medium production runs, prototyping and onsite or field use.

Bulk Material

The resin has been formulated to minimise sedimentation, however as the resin contains solid particles sedimentation will occur on standing. The sediment however is easily redistributed by simple mixing, i.e. rolling the container or gentle stirring until a uniform colour is achieved. This must be done before removal of any material from the container. Sedimentation is aggravated by time and increasing temperature. The resin is supplied evacuated and care should be taken when homogenising or mixing not to stir in large amounts of air. If this is unavoidable, the mixed material should be re-evacuated for best results. In bulk form the resins (part A) should be mixed with the hardener (part B).

Note: Incomplete mixing will be characterised by erratic or partially incomplete cure even after extended time periods.

Storage and Shelf Life

Material stored in the original unopened containers under cool dry condition between 15° and 35°C will have a shelf life of at least one year. Once used the containers must be kept sealed to prevent effects from water, air or contaminants.

Health and Safety

Polyurethane resin systems may cause sensitisation by skin contact or inhalation may be corrosive, harmful or toxic. It is therefore strongly recommended that skin and eye contact is avoided by the using of appropriate personal protective equipment; such as gloves, safety glasses or goggles and overalls. Wash any contamination from the skin immediately and thoroughly and do not eat, smoke or drink in the working vicinity. Under normal working conditions a good source of ventilation is adequate, however if the material is heated, or where vapour levels are likely to exceed the occupational exposure limits appropriate respiratory protection must be worn. Local exhaust ventilation (LEV) may be required especially for curing ovens or where large volumes of material are curing. The above is given as a guide only.

Copyright Simco (Nederland) BV

The results and information above does not constitute a specification and is given in good faith and without warranty. The information is derived from test / or extrapolations believed to be reliable and is quoted for guidance only. The product is offered for evaluation on the understanding the customer satisfies himself that the product is suitable for his intended by proper evaluation and testing.