

## Description

LM95 is a low-melt metal alloy with a sharp 95°C melting point suitable for casting melt-out metal cores/mandrels for hollow composites moulding processes.

## Key Features

- Low melt at 95°C
- Low Volume Change
- Reusable once melted out
- Suitable for pre-preg processes

## Typical Uses

- Fusible core / lost core / melt-out core in composites or injection moulding
- Thermal protection / safety devices
- Work holding / anchoring and support
- Radiation shielding

LM95 is most typically used for casting solid cores or mandrels for a 'lost core' moulding process, in particular prepregs, but also resin infusion, RTM and injection moulding providing that the resin systems used in the process will not be damaged by being heated to the 95°C melting point of the alloy.

Due to its low melting point, low shrinkage and good mechanical properties, LM95 also finds uses in thermal protection devices, as anchoring or support material and in radiation shielding.

## Specification

The recommended casting temperature for LM95 is 125°C - 150°C.

LM95 has excellent ductility and good fluidity. In common with all bismuth alloys, it undergoes gradual equilibrium following solidification, exhibiting slow dimensions changes, the rate of which is dependent on post solidification treatment.

## Safety

Unlike other low-melting point alloys such as 'Woods metal', LM95 does not contain harmful cadmium.

LM95 does contain lead but in normal use (melting, casting, and recovering) the alloy will stay well below the 500°C temperature at which lead vapour or fumes are generated and therefore the exposure and risk is minimal although normal lead-handling

precautions should be followed. Suitable protective gloves and equipment should always be used when handling hot liquid metal.

## Mechanical Properties

The table below shows typical properties:

Property	Unit	Value
Density	g/cm <sup>3</sup>	9.7
Brinell Hardness	-	9
Melting Point	°C	95
Solidification Point	°C	95
Specific Heat (solid)	J/g°C	0.151
Specific Heat (liquid)	J/g°C	0.167
Thermal Conductivity	W/cm°C	0.188
Electrical Resistivity	mΩ.cm	71.4
Latent Heat of Fusion	J/g	30.9
Compressive Strength	MPa	24.1
Tensile Strength	MPa	19.0
Coefficient of Thermal Expansion	mm/°C	0.0005
Volume Change (liquid to solid)	%	-1.5
Dimensional Change After Solidification	%	0.02% 10 mins 0.06% 30 mins 0.07% 2 hour 0.08% 24 hour

Material composition:

Bismuth	52.5%
Lead	32%
Tin	15.5%

## Disclaimer

This data is not to be used for specifications. Values listed are for typical properties and should not be considered minimum or maximum. Our technical advice, whether verbal or in writing, is given in good faith but Easy Composites Ltd gives no warranty; express or implied, and all products are sold upon condition that purchasers will make their own tests to determine the quality and suitability of the product for their particular application and circumstances.

Easy Composites Ltd shall be in no way responsible for the proper use and service of the product, nor for the safeguarding of personnel or property, all of which is the duty of the user. Any information or suggestions are without warranty of any kind and purchasers are solely responsible for any loss arising from the use of such information or suggestions. No information or suggestions given by us shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Before using any of our products, users should familiarise themselves with the relevant technical and safety datasheets provided by Easy Composites Ltd.

LM95 is a trademark of Easy Composites Ltd.

Leaders in materials, equipment and training for advanced composites