Technical Data Sheet

DE025 Re-Enterable Encapsulant

1. Introduction

DE025 reacts with Part B to form a 60 Shore A polyurethane. The product exhibits very low shrinkage during cure and the fully cured material can be readily broken and removed.

This is a development product and therefore information about the behaviour and properties of the components and the cured product is limited. Please direct any queries to Adhesive Brokers Ltd.

2. Applications

DE025 has been formulated for use primarily as an electronic encapsulant where the possibility of re-work of the electronic components may be necessary. As such DE025 cures to form a weak and easily penetrated product, and can therefore be removed from the electronic assembly if required. In addition the very low viscosity of the mixed system enables the product to penetrate narrow gaps and crevices ensuring complete encapsulation, and subsequent air release.

3. Specification

Property	Units	Minimum	Maximum
Gel Time (100g 20°C)	Minutes	5	15
Hardness at full cure	Shore A	55	65

4. Mix Ratios

By Weight:	1.00	parts DE025 to 1.00 parts Part B
By Volume:	1.15	parts DE025 to 1.00 parts Part B

The components should be measured to an accuracy of 2% or better. Care should be taking when measuring by volume as this is an inherently inaccurate method unless specific volumetric measuring equipment is used.

5.

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Typical Properties

Property		Typical Value	Units
Colour	Part A	Cloudy, off white	-
	Part B	Pale straw	-
	Mixed	Cloudy, off white	-
S.G.	Part A	1.00	-
	Part B	1.13	-
	Mixed	1.07	-
Gel Time (100g 20°C)		10	Minutes
Demould Time (100g 20°C)		50	Hours
Full Cure (100g 20°C)		2.5	Hours
Hardness at full cure		58	Shore A

6. Preparation of Components

DE025 polyol may show slight settling over time and should be thoroughly mixed prior to removal of any product.

Part B can be used directly from the container without mixing.

The components may be mixed and cast at room temperature and require no pre-warming prior to use. If the mould needs to be pre-warmed details will be given in the PREPARATION OF MOULDS section. If the product requires a postcure details will be given in the METHOD OF USE section.

7. Preparation of Moulds

Moulds should be clean and dry and generally a good quality release agent should be used and allowed to dry fully. For details of suitable release agents please contact Adhesive Brokers.

Moulds should require no pre-warming, though if ambient conditions are particularly cold and metal moulds are being used then warming to a temperature of 15-20°C will assist the cure of the material. Be aware that cold temperatures will result in longer cure and demould times.

8. Method of Use

Weighing

The components should be weighed on equipment capable of an accuracy of ±2% or better. The larger quantity (usually polyol or resin component) should be weighed into a vessel of sufficient capacity to accommodate the entire mix and allow room for mixing, and degassing if required.

All components should be weighed directly into the one vessel. Do not weigh each component into a separate vessel and then combine them, as this will not give the desired mix ratio due to losses

and wastage in each container. In turn this will lead to cure problems such as incorrect cure time or hardness.

Mixing
The components should be mixed together thoroughly by hand use a flat blade such as a palette knife or with a Jiffy type mixer if using a drill. The mixing should be carried out with care to avoid the inclusion of air and also to ensure that material on the sides and bottom of the vessel is removed and mixed in.

To avoid patches of unmixed components in the finished product the mixed material may then be transferred to a second container and mixed again.

Degassing
If degassing is required it should be done immediately after mixing. It is important to remember that degassing is only possible if the material has a sufficiently long pot life or gel time to allow for mixing, degassing and pouring.

The degassing chamber should be large enough to accommodate the mixing vessel and the vacuum pump should ideally be able to create sufficient vacuum in the chamber to start degassing within one minute. Once the violent bubbling ceases degassing is complete for most applications. Further degassing removes only a tiny proportion of air and is only necessary in critical applications.

Please note that increasing the quantity of mix or working at higher ambient temperatures (eg. in the summer) can reduce the pot life of the material. Where possible trials should be carried out to establish these parameters.

Pouring
Care during pouring is essential to avoid entrapped air. Pour the material slowly allowing it to flow gently over the mould surface and to fill cavities and channels from the bottom up.

Take care not to scrape the sides of the mixing vessel to remove the last of the product. This very frequently results in an undercured or soft area in the finished casting.

Postcure
This material will cure satisfactorily at ambient temperatures. Whilst the material can be demoulded with care after 2 hours, full hardness will develop after 3-4 hours.

9. Handling and Storage

The relevant Safety Data Sheets should be read carefully before using this material.

Good housekeeping is important with this material as with all chemicals. Spillages should be wiped up immediately and containers wiped clean after use. Isocyanate spillages can be especially hazardous and the Safety Data Sheet should be consulted for the correct cleaning up procedure.

Both components will absorb moisture, which will detract from obtaining satisfactory product. Exposure to atmosphere should therefore be minimised and containers sealed as soon as possible after use. Ideally part-used containers should be purged with dry nitrogen before resealing.

Both components should be stored in their original containers and in a dry place at 5-25°C.

Both components have a minimum shelf life of 12 months from the date of manufacture.

10. Health and Safety

Neither component is classified as hazardous according to the CHIP hazard classification. The Safety Data Sheet provides information on the health and safety aspects of this material. Please contact Adhesive Brokers if you do not have a Safety Data Sheet for each of the components of this material.

Part B is an isocyanate prepolymer with a free isocyanate content of less than 0.5%. Vapour hazard is therefore minimal however care should be taken not to allow vapours to accumulate, especially if the product is heated. Avoid direct contact with skin and eyes by means of gloves, goggles and impervious overalls.

11. Suitability for Use

The information in this datasheet is given to the best of our knowledge and belief but without warranty or liability.

The user must establish the suitability of the material for the intended application by carrying out any appropriate tests.

The user must subject finished products produced from any batch of our materials to comprehensive standards of quality control.

12. Additional Information

Please note that this is a development material and as such the amount of information regarding this product is limited. The product has not been tested for all applications and it is strongly recommended that customers carry out adequate trials to determine the suitability of this material for the intended use.

No liability will be accepted for direct or consequential losses arising from the use of this material. However any comments or suggestions relating to improving the processing or characteristics of this material will be very welcome.