PRODUCT DESCRIPTION
FP4650 is a high purity, liquid epoxy encapsulant. FP4650 features very low thermal expansion properties while retaining syringe dispense capabilities. It is based on FP4450 chemistry, which features improved moisture absorption and corrosion resistance properties.

TYPICAL APPLICATIONS
Liquid encapsulant

PROPERTIES OF UNCURED MATERIAL
- Color: Black
- Filler content, (%): 83
- Specific gravity, (ITM9A): 1.91
- Shelf Life @-40°C, (-40°F), months: 6

Typical Value
- Viscosity (ITM2A)
  - Brookfield RVT @ 25°C (77°F)
    - Spindle 7, Speed 4, Cp: 325,000
  - @60°C (140°F)
    - Spindle 7, Speed 20, Cp: 17,000

PHYSICAL PROPERTIES, CURED MATERIAL
- Color: Black
- Glass Transition (Tg), °C, (ITM65B): 140
- Coefficient of Linear Thermal Expansion, (ITM65B)
  - in/in/°C, (40°C-120°C): 15 x 10^-6
- Filler content, %: 83
- Extractable Ionic Content, @ 121°C (ITM107B)
  - Chloride (Cl-), ppm: 13
  - Sodium (Na+), ppm: 5
  - Potassium (K+), ppm: 5

Handling
- Gel Time @ 121°C, (250°F), minutes, (ITM10N): 13
- Pot Life @ 25°C, (77°F), days, (ITM10T), (time required to double viscosity): 8

Frozen storage at approximately –40°C or lower is required for maximum shelf life. Frozen packages must be completely thawed before use. Warm at room temperature until no longer cool to the touch (normally 20-60 minutes). Do not thaw in an oven. For best results, FP4650 should be dispensed onto a substrate warmed to approximately 80°C. This will help minimize air entrapment. Warm FP4650 to 40°C for faster dispensing. Elevated temperature reduce working life. Do not store above –40°C.

GENERAL INFORMATION
For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or their strong oxidizing materials.

Cure Schedule
- Recommended Cure: 1 hour @ 120°C plus 2 hours @ 160°C
- Alternate Cure: 3 hours @ 170°C

Designed to be used with packaged which are affected by higher levels of stress. This cure recommended for optimum properties.

Use suggested cure conditions as general guidelines. Other cure conditions may yield satisfactory results.

Note
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user’s responsibility to determine suitability for the user’s purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation’s products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.