PRODUCT DESCRIPTION
Hysol® FP4460 is a high purity, low stress glob top semiconductor encapsulant with improved moisture resistance and working life compared to earlier generation products. Pressure pot performance on live devices is up to 500 hours with no failures, depending upon device and package type. This material is designed for temperature cycling ranges up to –65°C to 150°C. Hysol® FP4460 may be suitable for bare chip protection in a variety of advanced packages such as IC memory cards, chip carriers, hybrid circuits, chip-on-board, multi-chip modules, ball grid arrays and pin grid arrays. The high temperature performance; and excellent resistance to chemicals, moisture and handling damage is also advantageous for automotive applications.

TYPICAL APPLICATIONS
Glob top

PROPERTIES OF UNCURED MATERIAL
Color Black
Filler Content, %, (ITM3A) 75
Specific Gravity, (ITM9A) 1.78
Shelf Life @-40°C (-40°F), months 9

Typical Value
Viscosity @ 25°C, (77°F) (ITM2A) Brookfield RVT, Spindle 7, Speed 4, Cp 420,000
Spindle 7, Speed 10, Cp 300,000

PHYSICAL PROPERTIES, CURED MATERIAL
Coefficient of Thermal Expansion, in/in/°C (ITM65B) (40°C-120°C) 20 x 10^-6
Glass Transition, (Tg), °C, (ITM65B) 165
Glob Height, 0.2 gram mass, mm (ITM22G) 2.0
Linear Shrinkage, % (ITM90G) 0.135
Extractable Ionic Content (ITM107B)
Chloride (Cl-), ppm 20
Sodium (Na+), ppm 20
Potassium (K+), ppm 20

HANDLING
Pot Life @ 25°C, 77°F, hours (ITM10T), (Time to double viscosity) 24
Gel Time @ 121°C, (250°F), minutes (ITM10N) 9

Do not store above –40°C. 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. Elevated temperatures reduce working life. reduces working life.

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 @ 125°C plus 2 hours @ 165°C
Alternate Cure 3 hours @ 170°C

Use suggested cure schedules as general guidelines; other cure schedules 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, Loctite Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Loctite Corporation's products. Loctite 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 Loctite 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.