

## EpoxiFoam Series

The EpoxiFoam Series of materials are epoxy systems that contain hollow micro-balloons that allow the cured material to yield low cured densities while retaining good mechanical properties. The electrical, mechanical, and chemical properties of the cured syntactic foams can be varied to meet many requirements. These systems may be of interest for casting low density mechanical parts, for structural potting, and for electrical encapsulation.

Presented here is information on a handful of commercialized systems. Several other experimental or in-development systems are being evaluated and many custom variations are possible.

### **EpoxiFoam #2 A/B**

*Easily Spreadable, formable, soft-paste, room temperature curing, low cost. Good Mechanical Properties up to 100°C*

**Color:** Natural (off-white), Pink, Black, or by request

**Mix Ratio:** 100A:22B part by weight

**Work-life at 25°C:** > 60 minutes

**Cured Density:** 0.30g/ml – 0.50 g/ml\* (\*hand mixing results in lower densities)

**Suggested Cure:** 24 hours at 25°C

### **EpoxiFoam #3 A/B**

*Pourable, heat and chemical resistant foam. Rigid Foam with good mechanical properties up to 150°C when fully cured.*

**Color:** Natural (off-white), Green, Black, or by request

**Mix Ratio:** 100A:22B part by weight

**Work-life at 25°C:** > 60 minutes

**Cured Density:** 0.60g/ml – 0.70g/ml

**Suggested Cure:** 2hours at 95°C + 3 hours at 150°C

### **EpoxiFoam #4 A/B**

*Flexible, impact resistant, foam with very low embedment stress of encapsulated electronics.*

**Color:** Gray, Black, or by request

**Mix Ratio:** 2A:1B part by weight

**Cured Density:** ~0.70g/ml

**Work-life at 25°C:** > 3 hours

**Suggested Cure:** 2-4 hours at 80°C or 1 hour at 100°C

### **EpoxiFoam #6 A/B**

*Pourable, heat and chemical resistant foam. Rigid Foam with good mechanical properties up to 150C when fully cured.*

**Color:** Natural (off-white), Green, Black, or by request

**Mix Ratio:** 100A:25B part by weight

**Work-life @ 25°C:** > 90 minutes

**Cured Density:** 0.50g/ml – 0.60g/ml

**Suggested Cure:** 2hours @ 95°C + 3 hours @ 150°C

For lower densities, all the EpoxiFoam Systems mentioned above can be used with an additional foaming agent that is added to the part A just prior to mixing with the part B. Levels from 0.1% to 3% of the Foaming agent is called EpoxiFoam FA and allows the density of the cured parts by we reduced by producing carbon monoxide bubbles within the cast part. High levels of bubbles may affect the mechanical strength of the part and the surface evenness, so keeping levels below 1% by weight of the mixture is recommended. Typical density reduction is 10% - 20%, but this can vary with curing temperature, viscosity of the Epoxifoam system, and the geometry of the parts.

The foaming agent can be pre-mixed into most of the part A's, but will instantly react with the part B's to produce gas, so must not be exposed to the part B's until the final mix of the part A & part B.

## **STORAGE AND SHELF LIFE**

Shelf life is at least 1 year from date of shipment. Separation will occur during storage and transportation. Thoroughly re-mixed the part A if more than a day has passed between used or any separation is visible. Using a paint shaker may add in obtaining a complete mixed of the part A. Do NOT use a high shear mixer bladed such as a Cowles blade as this may crush the hollow micro-balloons and increase the density of the cured casting.

## **HANDLING PRECAUTIONS:**

Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

## **PERSONAL HYGIENE:**

### **EpoxiFoam #2A, #3A, #4A & #6A**

WARNING!!! May cause eye and skin possible allergic reaction. Harmful if inhaled. Harmful if swallowed. Wear Eye & skin protection when handling.

### **EpoxiFoam #2B, #3B, #4B & #6B**

WARNING!!! May cause eye and skin possible allergic reaction. Harmful if inhaled. Harmful if swallowed. Wear Eye & skin protection when handling.

## **FIRST AID**

In case of contact:

Skin – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather.

Eyes – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention.

Inhalation - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

Ingestion - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

## **DISCLAIMER:**

IMPORTANT: The following supercedes Buyer's documents. SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to

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# Product Datasheet



infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended

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