



## SynSpand<sup>®</sup> EA 9890

### Expanding Syntactic Film

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#### Description

SynSpand EA 9890 is an expanding modified epoxy film that cures @ 250°F/121°C. Commonly used for abradable seals, which require high abrasion and corrosion resistance. Additional features include expansion and low density upon cure. SynSpand EA 9890 is supplied as a continuous film of controlled areal weight and width.

#### Features

250°F/121°C Cure  
Abrasion & Erosion Resistance  
Expanding, Low Density  
User Friendly Processing

#### Product Forms

Film Areal Weight: 0.40 +/- 0.04 lbs/ft<sup>3</sup> (1.95 +/- 0.2 kg/m<sup>2</sup>)  
Film Widths: Standard 16 in (40.7 cm) nominal  
Roll Lengths: Standard 50 feet (15.2 m)

#### Handling

Store @ 0°F/-18°C.

This product is in film form and is ready to use as received. Material should be removed from cold storage and allowed to warm to room temperature before removing the protective packaging. This material has protective liners on it which must be removed prior to parts assembly (see "Applying" below). The liners will always be a contrasting color from the material to allow the user easy confirmation of removal.

#### Application

**Warranty Life** – SynSpand EA 9890 requires refrigerated storage. Store @ 0°F/-18°C or below for maximum storage life. Warranted life @ 0°F/-18°C or below is 12 months. Store in sealed desiccated MIL B 131 H Class 1 Type 1 bag provided. Allow adequate time for the container to warm to room temperature before opening for use.

**Applying** - SynSpand EA 9890 is a pliable film with tack and drape. SynSpand EA 9890 can be cut to any desired shape using ordinary razor knives or scissors. Razor knives using templates as guides work best. After cutting the material, you can remove the polyethylene release film by peeling them back from a corner.

**Open Assembly Time** - SynSpand EA 9890 must be used within the following schedule after removing from cold storage:

- @ 77°F/25°C - at least 15 days
- @ 90°F/32°C - 5 days

**Curing** - Cure is accomplished in 2 hours @ 250°F/121°C.

**Cleanup** - Little cleanup should be required. However, uncured material may be removed effectively with ketone solvents in well ventilated areas. Saturate cloth or industrial wipes with solvent and apply just enough to do the job. Avoid contaminating uncured parts with spray or spillage. Wear respirators equipped with organic vapor cartridges, impervious rubber gloves, and safety goggles when handling solvents. Consult solvent container labels for skin and flame warnings.

## Typical Mechanical Performance Properties

### Typical Uncured Properties

Pliable and drapable @ 77°F/25°C  
 15 day working life @ 77°F/25°C  
 4% minimum flow at 30 psi/0.21 MPa, 250°F/121°C

### Typical Cured Properties\*\*

Density (ASTM D792) 25lbs/ft<sup>3</sup> (0.40 g/cm<sup>3</sup>)  
 Flexural Strength, psi (MPa) (ASTM D790)\*\*

| Test Temperature              | 77°F/24°C    | 180°F/82°C   |
|-------------------------------|--------------|--------------|
| Dry, psi (MPa)                | 1600 (11.0)  | 800 (5.5)    |
| Wet <sup>1</sup>              | 1600 (11.0)  | 500 (3.4)    |
| Fluid Exposures <sup>2</sup>  |              |              |
| Skydrol                       | 1600 (11.0)  | 700 (4.8)    |
| Cleaning Reference Fluid      | 1600 (11.0)  | 600 (4.1)    |
| Jet A Fuel                    | 1600 (11.0)  | 700 (4.8)    |
| Lubricating Fluid             | 1600 (11.0)  | 700 (4.8)    |
| De-icing Fluid                | 1600 (11.0)  | 700 (4.8)    |
| Flexural Modulus, ksi (MPa)** |              |              |
| Dry                           | 50.0 (344.8) | 28.0 (193.0) |
| Wet <sup>1</sup>              | 50.0 (344.8) | 7.0 (48.3)   |

<sup>1</sup> Immersing specimens in 75°F/24°C water for 14 days attained wet conditioning.

<sup>2</sup> Fluid exposure specimens were immersed for 7 days @ 75°F/24°C. De-icing fluid was at 32°F/0°C.

\*\* Specimen cure cycle was between 6°F and 9°F (3°C and 5°C)/minute heat-up, 120 ± 10 minutes @ 250°F ± 10°F (121°C ± 6°C) inside of a fixed volume cavity.

## Handling Precautions

Do not handle or use until the Material Safety Data Sheet has been read and understood.  
 For industrial use only.

**General:**

As with most epoxy based systems use this product with adequate ventilation. Do not get in eyes or on skin. Avoid breathing the vapors. Wash thoroughly with soap and water after handling. Empty containers retain product residue and vapors, so obey all precautions when handling empty containers.

ONE PART

**CAUTION!** This material may cause eye and skin irritation or allergic dermatitis. It contains epoxy resins.

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Users should review the Materials Safety Data Sheet (MSDS) and product label for the material to determine possible health hazards, appropriate engineering controls and precautions to be observed in using the material. Copies of the MSDS and label are available upon request.

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