

LOCTITE ECCOBOND FIL 7010C

April 2020

PRODUCT DESCRIPTION

LOCTITE ECCOBOND FIL 7010C provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Components	One-component
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none"> Crack and thermal resistant Good chemical resistance Low thermal expansion High purity
Operating Temperature	-40 to 150°C
Application	Encapsulants, Potting
Typical Applications	Potting of stress sensitive electronic components

LOCTITE ECCOBOND FIL 7010C is a low viscosity, one component epoxy product designed for use as a potting or encapsulation resin protection for stress sensitive electronic components. It is specially formulated with a low thermal expansion and high Tg, along with a toughened polymer backbone making it ideally suited to survive severe thermal shock conditions with a high resistance to micro cracking.

LOCTITE ECCOBOND FIL 7010C is designed to survive constant service temperatures of 150°C, with peak temperatures of up to 180°C.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25 °C, mPa·s (cP):	
@ 15 s ⁻¹	20,000 to 30,000
Density, gm/cc	1.9
Shelf Life:	
@ -40 °C, days	180
@ 25°C, day	1
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Cure Schedule

2 hours @ 140°C

Low Stress Cure Schedule

1 hour @ 100°C plus 1 hour @ 150°C

The above cure profile is a guideline recommendation. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Hardness, Shore D	≥90
Glass Transition Temperature(Tg), °C:	
(Tg) by DMA	155 to 165
(Tg) by TMA	135 to 145
Coefficient of Thermal Expansion, 10 ⁻⁶ /°C:	
Below Tg	14 to 18
Above Tg	55 to 60
Young's modulus (E) @ 25 °C, GPa	11
Thermal Conductivity, W/(m-K)	0.72
Extractable Ionic Content @ °C, , ppm:	
Chloride (Cl-)	≤10
Potassium (K+)	≤10
Sodium (Na+)	≤10
Ammonia (NH3+)	≤10
Water Absorption , %:	
24-hour boil test by weight	0.63

Electrical Properties

Volume Resistivity , ohms-cm	9.6×10 ⁺¹⁵
Surface Resistivity, ohms	3.4×10 ⁺¹⁶
Dielectric Strength, kV/mm	>20
Dielectric Constant/Dissipation Factor @ 1 MHz	3.5/0.016

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

THAWING:

1. Allow container to reach room temperature before use.
2. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.
3. DO NOT re-freeze. Once thawed, the adhesive should not be re-frozen.

Directions for use

1. Cure the product per the cure schedule mentioned in the Typical Cure Schedule section of the document.
2. The surfaces on which the adhesive has to be applied should be clean, dry and free from all dust.
3. Initially dispense LOCTITE ECCOBOND FIL 7010C on the outline of the glob referred to as the "dam".
4. The dam is then filled in with LOCTITE ECCOBOND FIL 7010C material.
5. Both materials can be co-cured after dispense.

STORAGE:

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage : -40 °C

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$
 $\text{MPa} = \text{N/mm}^2$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Disclaimer**Note:**

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever

legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada, Inc. the following disclaimer is applicable:

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.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 1