

# LOCTITE ABLESTIK ICP 3920

July 2013

## PRODUCT DESCRIPTION

LOCTITE ABLESTIK ICP 3920 provides the following product characteristics:

|                         |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technology</b>       | Epoxy                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Appearance</b>       | Silver                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Product Benefits</b> | <ul style="list-style-type: none"> <li>• One component</li> <li>• Electrically conductive</li> <li>• Thermosetting</li> <li>• Pb-free alternative to solder</li> <li>• Low viscosity</li> <li>• Low CTE</li> <li>• No post cure required</li> <li>• Low temperature cure</li> <li>• Long work life</li> <li>• Stencil or screen printable</li> <li>• Improved dispensability</li> </ul> |
| <b>Cure</b>             | Heat cure                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Application</b>      | Assembly                                                                                                                                                                                                                                                                                                                                                                                |

LOCTITE ABLESTIK ICP 3920 is designed for fine dispense or printing applications and SMT assembly processes. The long work life minimizes product waste and clean-up time, providing increased production efficiency.

LOCTITE ABLESTIK ICP 3920 is an improved version of CE3920. It can be used with finer dispensing needles without clogging.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Cone & Plate, Angle 3°, mPa·s (cP):

|                                           |        |
|-------------------------------------------|--------|
| @ Speed 5 rpm                             | 26,100 |
| Thixotropic Index @ 25°C, Speed 0.5/5 rpm | 5.7    |
| Shelf Life @ -40°C, months                | 6      |
| Flash Point - See MSDS                    |        |

## TYPICAL CURING PERFORMANCE

### Cure Schedule

5 minutes @ 150°C (Batch Cure)

The above cure profiles are guideline recommendations. 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

|                                                                            |     |
|----------------------------------------------------------------------------|-----|
| Coefficient of Thermal Expansion, TMA, Sample cured 30 mins @ 150°C:       |     |
| Below Tg, ppm/°C                                                           | 29  |
| Above Tg, ppm/°C                                                           | 130 |
| Glass Transition Temperature (Tg) by TMA, Sample cured 30 mins @ 150°C, °C | 119 |
| Extractable Ionic Content, Sample cured 15 mins @ 150°C, ppm:              |     |
| Chloride (Cl-)                                                             | 5.1 |
| Sodium (Na+)                                                               | 0.6 |
| Potassium (K+)                                                             | 0.2 |

### Electrical Properties

|                                                                 |        |
|-----------------------------------------------------------------|--------|
| Volume Resistivity @ 25 °C, Sample cured 5 mins @ 150°C, ohm-cm | 0.0003 |
|-----------------------------------------------------------------|--------|

## TYPICAL PERFORMANCE OF CURED MATERIAL

Sample cured 5 minutes @ 150°C

### Miscellaneous

Die Shear Strength:

2 X 2 mm (80 x 80 mil) Si die on Ag Plated Leadframe:

|                                  |                   |         |
|----------------------------------|-------------------|---------|
| @ 25°C                           | N/mm <sup>2</sup> | 36.5    |
|                                  | (psi)             | (5,290) |
| @ 25°C, After 30 seconds @ 250°C | N/mm <sup>2</sup> | 22.7    |
|                                  | (psi)             | (3,290) |
| @ 250°C                          | N/mm <sup>2</sup> | 1.7     |
|                                  | (psi)             | (250)   |

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. The surfaces on which the adhesive has to be applied should be clean, dry and free from all dust.
2. Bring LOCTITE ABLESTIK ICP 3920 to room temperature before using.

### 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.

## 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. Storage below -40°C can adversely affect product properties.**

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

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

## 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.

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