



# TFN700B

November 2009

## PRODUCT DESCRIPTION

TFN700B provides the following product characteristics:

<b>Technology</b>	Tacky Flux
<b>Appearance</b>	Blue
<b>Product Benefits</b>	<ul style="list-style-type: none"><li>• No clean</li><li>• Halide-free</li></ul>
<b>Application</b>	Solder flux

TFN700B is a Newtonian tacky flux designed for PoP applications. The rheology has been optimized to aid process consistency where mass flux transfer is paramount. The flux is ideally suited for dip-transfer process. Solderability of Pb-free components onto Cu and Ni-Au based substrates has been achieved.

## FEATURES AND BENEFITS

- TFN700B can be formed into a thin film by doctor blading. For PoP builds, the components are dipped (dip-transfer) and placed.
- Newtonian material reduces process sensitivity (shear effect on viscosity is minimized). Constant viscosity allows customer to have control.
- Newtonian material allows more consistent flux mass pickup at different withdrawal rates; therefore, not as process sensitive.
- Consistent tack force over time (no rheological change).
- Addition of blue dye allows image recognition systems to ascertain flux existence.
- Drop-test reliability proven against traditional fluxes.
- Low voiding.
- Soft residues designed for easy removal in solvent or semi-aqueous cleaning processes.
- Suitable for reflow in air and nitrogen with a range of SAC based alloys.

## TYPICAL PROPERTIES

### Tacky Flux Typical Properties

Solids Content, %	80
Acid Value, mg KOH, g	108
Halide Content, %	<0.005
Tackiness (JIS standard), gf	175
Brookfield Viscosity, mPa·s (cP) TF Spinde, 25°C	47,000
Tack Life (JIS standard), hours	>24

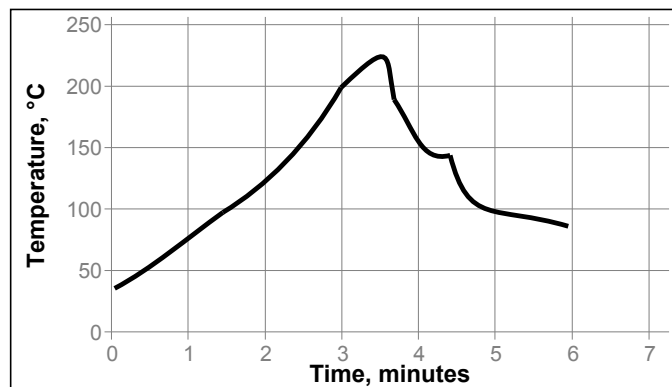
## DIRECTIONS FOR USE

### Fluxing

For solder sphere attach process, TFN700B is suitable for printing - by screen, stencil and for doctor blading. TFN700B flux is suitable for dip-transfer. In constant field application, it is suitable for at least 16 hours. Dip transfer conditions are available on request.

### Reflow:

- TFN700B flux is designed for reflow in both air and nitrogen atmospheres.
- The flux is designed for Pb-free alloys.
- For eutectic and non-eutectic SAC alloys, a recommended minimum peak temperature of 230 to 235 °C is required.
- The reflow profile shown has been used successfully for SAC eutectic alloys. Other profiles may also give good results. Customers using non-eutectic Pb-free alloys should always consider time above alloy liquidus for adequate reflow.



### Cleaning:

1. TFN700B residues are designed to be removed from assemblies in an aqueous cleaner without the use of any additional chemistries and/or saponifiers.
2. Incomplete removal of the residues can lead to reduced reliability of the device.
3. Hot deionised water is the preferred cleaning agent.
4. Residues are easily removed in batch and in-line aqueous cleaners even up to three days post reflow.
5. Cleaning of some assemblies is best conducted in an ultrasonic bath.
6. Tap water is not recommended for rinsing, since ionic impurities present in tap water can lead to reduced reliability of the assembly.

**RELIABILITY PROPERTIES**

TFN700B flux contains a stable resin system and includes solvents with high boiling ranges.

The flux has been tested in accordance to J-STD-004 (IPC-TM-650) and Telcordia.

Test	Specification	Results
Copper Mirror Corrosion	IPC TM-650	Pass
Chlorides & Bromides	IPC TM-650	Pass
Fluorides	IPC TM-650	Pass
Surface Insulation Resistance (without cleaning)	IPC TM-650 Telcordia GR-78-Core	Pass
Flux Activity Classification (without cleaning)	J-STD-004	ROLO

**PACKAGING**

**Containers:** TFN700B is supplied in:

- Jars
- 30cc cartridges (EFD type)

Other packaging types may be available on request; please contact your local technical service helpdesk for assistance.

**Storage:**

It is recommended to store TFN700B at 5 to 10°C. Cartridges of TFN700B should be stored tip down at <10°C.

**Shelf Life:**

Provided Multicore™ TFN700Bs are stored tightly sealed in the original container at 5 to 10°C, a minimum shelf life of 6 months can be expected. Air shipment is recommended to minimize the time the containers are exposed to higher temperatures.

**DATA RANGES**

The data contained herein may be reported as a typical value and/or a range. Values are based on actual test data and are verified on a periodic basis.

**GENERAL INFORMATION**

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

**Not for Product Specifications**

The technical information contained herein is intended for reference only. Please contact Henkel Technologies Technical Service for assistance and recommendations on specifications for this product.

**Conversions**

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

**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, **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.

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