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| 3 | Frequently Asked Questions |
1. LOCTITE GC 18

Background

- Shipment contains cold packs
- Intermittent supply chain quality

Traditional Logistics of Solder Paste

- Paste stored in refrigerated warehouse
- Paste temp conditioning prior to production line

- LOCTITE GC 18 solder paste is temperature stable for 6 months at 5-25°C (41-77°F)
- LOCTITE GC 18 offers product shipments & storage without refrigeration but maintained stability
- To have a QA tool for LOCTITE GC 18 shipments, temperature indicator labels will be added to the secondary packaging to monitor transit conditions and ensure high quality supply of solder paste
Content

1. Background

2. Temperature Indicator Labels
   - Comparison of Traditional vs LOCTITE GC 18 Shipments
   - Introducing AE Temperature Indicator Labels
   - Defining the Purpose
   - Customer Interpretation of Labels – Time & Temperature
   - Actions Required of the Customer

3. Frequently Asked Questions
## 2. Temperature Indicator Labels

### Comparison of Traditional vs LOCTITE GC 18 shipments

<table>
<thead>
<tr>
<th>Traditional Solder Packaging</th>
<th>LOCTITE GC 18 Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>No quality indicator on shipments unless customer requests temperature recorders in shipment</td>
<td>All LOCTITE GC 18 shipments will contact a temperature indicator label</td>
</tr>
<tr>
<td>Cartridges, syringes and jars have no indicator</td>
<td>Jars and cartridges have no indicator</td>
</tr>
<tr>
<td>Primary box has no indicator</td>
<td>Primary box has an indicator</td>
</tr>
<tr>
<td>Secondary box has no indicator but has directions printed (see next slide)</td>
<td>Secondary box has indicator on the inside flap of the box</td>
</tr>
</tbody>
</table>

![Image of Traditional Solder Packaging](image1.png)
![Image of LOCTITE GC 18 Packaging](image2.png)
2. Temperature Indicator Labels
Introducing Henkel Temperature Indicator Labels

Traditional Solder Packaging

LOCTITE GC 18 Packaging

This label has 6 temperature range indicators from 37-54°C (100-130 °F)

The colour on the label will maintain the grey colour if the temperature of shipments from Henkel to customer is < 37°C (100°F)

If the temperature increases beyond 37°C (100°F), depending on the temperature it reaches during shipment, there will be a colour change from grey to black.
2. Temperature Indicator Labels
Defining the Purpose

Creating a QA Tool

- Standard shipments have no recording temperature for quality control
- The temperature indicator label gives both Henkel and the customer confidence of solder paste arriving in optimal condition
- The temperature indicator label will change colour if it is subjected to temperatures ranging from 37–54°C (100-130°F)

**LOCTITE GC 18** is stable at temperatures up to 40°C ± 2.0°C (105°F ± 35.6°F). The temperature indicator label will highlight the maximum exposure temperature during shipment.
### 2. Temperature Indicator Labels

**Customer Interpretation of Temp Indicator Labels**

<table>
<thead>
<tr>
<th>How does the Temperature Indicator Label look?</th>
<th><strong>Assumption that the paste has been exposed to temperatures for no longer than 1 month</strong></th>
<th>What to do next?</th>
</tr>
</thead>
<tbody>
<tr>
<td>All indicators are grey</td>
<td></td>
<td>No action LOCTITE GC 18 is good</td>
</tr>
<tr>
<td>Indicator has changed colour at 37°C (100 °F)</td>
<td></td>
<td>No action LOCTITE GC 18 is good</td>
</tr>
<tr>
<td>Indicator has changed color at 40°C</td>
<td></td>
<td>No action LOCTITE GC 18 is good</td>
</tr>
<tr>
<td>Indicator has changed color at 43°C</td>
<td></td>
<td>Action required – see the following slide</td>
</tr>
<tr>
<td>Indicator has changed color &gt;43°C</td>
<td></td>
<td>Action required – see the following slide</td>
</tr>
</tbody>
</table>
## 2. Temperature Indicator Labels
### Actions Required of the Customers

**What happens if the Temperature Indicator Label reaches 43°C (110°F) or above?**

*The customer should reach out to Henkel point of contact*
  - Henkel Customer Services
  - Henkel Technical Service
  - Henkel Operations
  - Henkel Sales

**What should the customer do with the LOCTITE GC 18 if the temperature indicator Label reaches 43 °C (110°F) or above?**

1. **Take a photograph of the temperature indicator label and the jar or cartridge immediately upon receipt**
   - Customer must time-stamp the photo with the batch number
   - Place the LOCTITE GC 18 in accordance with directions on the TDS and handling guide (5-25°C/41-77°F)

2. **Call the Henkel point of contact detailing batch number, temperature, and quantity impacted**
   - Henkel may request samples to check quality of the shipment in accordance with quality accordance
   - Henkel will notify the customer based on the QC results whether the LOCTITE GC 18 remains in optimal condition
1. Background

2. Temperature Indicator Labels
   - Comparison of Traditional vs LOCTITE GC 18 Shipments
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3. Frequently Asked Questions
3. Frequently Asked Questions

1. When should cold packs be placed in LOCTITE GC 18 shipments?

   *All shipments be shipped without cold packs unless specified by the customers.*

2. How do customers/distributors interpret the temperature indicator labels?

   *Refer to slide 7*

3. If the temperature indicator label reaches 43°C (110°F) or above, what are the next steps?

   *Refer to slide 8*

4. How do we analyse customer complaints with the new temperature indicator labels?

   *Henkel will follow its current internal CCMS (Customer Complaint Management System) procedures.*

5. How many labels are used per shipment?

   *There should only be one temperature indicator label on the inside flap of the box containing the jars or cartridges and one such labelled box per secondary box in the shipment.*
3. Frequently Asked Questions

6. What is the maximum temperature that the LOCTITE GC 18 will remain stable?

LOCTITE GC 18 will remain stable below 40°C for 1 month.

7. How should LOCTITE GC 18 be stored and what documentation can we provide to support this?

The LOCTITE GC 18 should be placed in an optimal location either in refrigeration or in ambient temperatures (5-25°C / 41-77°F) as indicated by the TDS, handling guidelines and SDS. Cartridges should be placed vertically tipped down.

8. When will Henkel place the temperature indicator label on the boxes?

The temperature indicator label will be placed on the inside flap of the box containing the jars or cartridges immediately prior to shipping.
9. Should distributors add a temperature indicator label when shipping to their customers?

Distributors may wish to place extra temperature indicator labels on the primary packaging at customers’ request.

10. Will Henkel use the temperature indicator labels on sample shipments?

Sample shipments will not use temperature indicator labels unless specifically requested.

11. If the secondary packaging gets wet, will the temperature indicator labels continue to work?

Yes, the temperature indicator labels are water, steam and oil resistant.

12. If the colour on the temperature indicator label indicates 43°C (110°F) or above has been reached, will this impact the quality of LOCTITE GC 18?

This will not affect the quality of LOCTITE GC 18. Please refer to the TDS and handling guidelines.
3. Frequently Asked Questions

13. What will the shelf life of LOCTITE GC 18 be if the colour on the temperature indicator label indicates 40°C has been reached?

Assuming transit duration of less than one month, the shelf life will remain as per original specifications 6 months @ 5-25°C (41-77°F).

14. Who should the customer contact if the colour on the temperature indicator labels indicates 43°C (110°F)?

Refer to slide 8

15. If I request the paste to be shipped with cold packs and the material reaches <0°C what is the shelf life?

The shelf life will remain as per original specifications 6 months at 5-25°C (41-77°F).

16. How long does it take the temperature indicator label to change colour?

The temperature indicator label changes colour within one minute of exposure to the indicated temperature.
3. Frequently Asked Questions

17. What temperature should LOCTITE GC 18 be stored at prior to shipment?

   *LOCTITE GC 18 should be stored at 5-25°C (41-77°F).*

18. How long is the shelf life for the GC 18 if it reaches 43°C or above?

   *If the temperature label indicates 43°C or above during transit, contact your local Henkel representative. Additional testing must be performed to determine if the material can still be used.*
Thank you!