



## Application Note

# Tputty™ 910 Dispensing Guideline

Date: Feb/17/2023

*This application guideline provides general instructions for use for Tputty™ 910.*

## Overview

Tputty™ 910 is a soft, compliant, very high thermal conductivity, one-part dispensable gap filler providing a low thermal resistance and high reliability.

## Use

### Recommended Use:

Tputty™ 910 is ideal for applications that can benefit from automation, and providing application flexibility and variable gap adaptation, Tputty™ 910 will exert minimum stress on your component while maintaining interface contact to maximize thermal transfer.

## Shipping and Storage

### Shelf Life:

Shelf life for Tputty™ 910 stored in unopened original package is currently set at 6 months from date of production.

*Note: A limited flow rate decrease can be seen after storage time. It does not impact functional performance.*

### Storage Conditions:

Tputty™ 910 should be stored in original product packaging until ready for use. Recommended storage conditions are up to 35°C, with no special requirements on relative humidity when stored in original packaging. It's very important to keep the correct storage direction following the note of the packaging. For cartridges, the direction to store the material is referred to the arrow from carton or sticker as in vertical tip-down dispense orientation).

### Storage under High Pressure:

Tputty™ 910 should not be stored under high pressure dispensing conditions. If stored for long periods under pressure some separation may be noticed.

### Open package after start of using

The general guideline is that you can finish one packaging product within one shift continued production line running or at least you can finish one packaging product within 3 days with discontinuous production line running. It's not recommended to use a big packaging for small using volume, there is some risk of material flow rate evolution and of oil bleeding if the material remains under high pressure for too long time.

## Preparation and Clean-up

**Preparation for Use:** Tputty™ 910 is ready to use out of the container and no post-cure is needed. Make sure surfaces to be covered are clean and dry. Mixing before use is not recommended; however, the flow rate may be lower than specified on the datasheet if dispensed at temperatures below 23°C.

**Clean-up:** Excess material can be cleaned up using a dry rag. Residual silicone oil can be removed using a clean rag and acetone solvent.

**Exposure to solvents:** Tputty 910 is a silicone material filled with thermally conductive fillers. Exposure to organic solvents and strong bases can result in swelling or removal of the silicone carrier material resulting in degradation or loss of performance. For specific chemical resistance consult Chemical Resistance Tables for silicone materials such as the one listed at the following web address:

[https://www.engineeringtoolbox.com/silicone-chemical-resistance-d\\_1879.html](https://www.engineeringtoolbox.com/silicone-chemical-resistance-d_1879.html)

## First Aid

### First Aid:

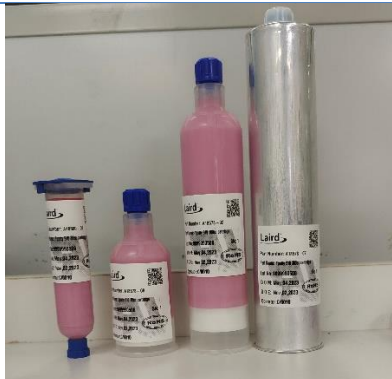
Safe handling, disposal, and first aid measures are included in the SDS. Please read the SDS before using or handling this product. For further questions, please contact Laird.

## Packaging:

Tputty™ 910 can be provided in various packages according the list below. For special packaging, please contact Laird.

### Table

PACKAGING SIZE	FILL VOLUME
30cc plastic syringe	30cc(96g)
75cc plastic cartridge with sealed piston	56cc(180g)
180cc plastic cartridge with sealed piston	159cc(510g)
300cc Aluminum cartridge	300cc(963g)
1gallon pail	4000cc(12.8kg)



Cartridges



1gallon pails

## Dispensing Recommendations & Equipment

Tputty™ 910 can be dispensed with a variety of dispensing systems. The following is a partial list of example equipment for low and high volume dispensing and typical results that can be expected.

### ➤ Prototype & Low Volume Dispensing Method

The manual dispensing gun or EFD Performus II Dispenser is recommended for the prototype and low volume dispensing.



30cc Manual Dispenser



Nordson EFD Performus II Dispenser

### ➤ High Volume Dispensing Methods

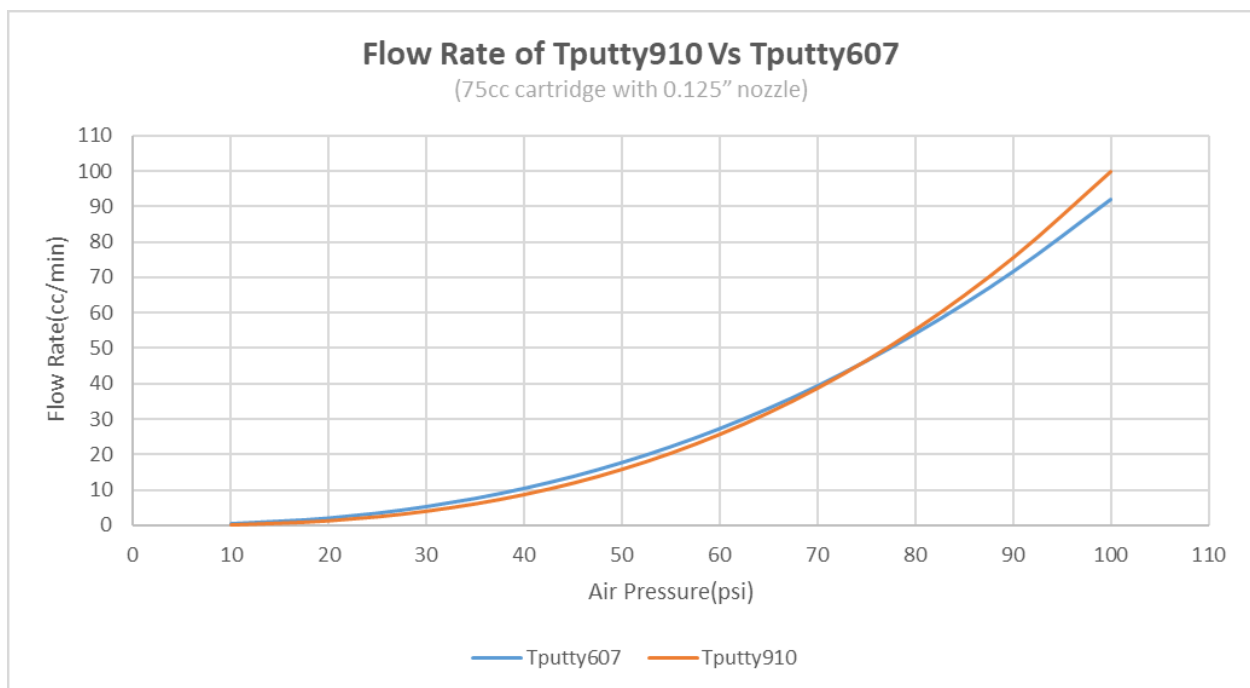
Normally the dispensing system include the raw material supply system, dispensing platform and the dispensing valves:

	Raw Material Supply System	Dispensing Platform	Dispensing Valve
Simple Solution	<p>75cc/180cc/300cc cartridge dispensing by directly high pressure or an air cylinder</p>  <p>75cc/180cc/300cc cartridge Worked with high pressure screw pump</p>	 <p>3 axis robot</p>  <p>Multiple axis robot</p>	 <p>No Valve or a kind of Time/pressure control valve</p>
High Precision Solution	 <p>A90 material feeding system for 300cc cartridge</p>  <p>Dynamite heavy pump with 1gallon pail or 300cc cartridge products</p>	 <p>Scheugenpflug Dispenser</p>  <p>Graco C300/C500 System</p>	 <p>Customized Metering Valve from Scheugenpflug DOS P016-1C/01 TCA</p>  <p>Upgraded PCP from Graco + Upgraded Pressure Adapter</p>

## Flow Rate:

As a high thermal conductive material, Tputty™ 910 is a highly filled material; therefore, the viscosity of this paste will be seen higher as a lower conductive material and the stickiness will be seen as less sticky when compared to lower conductive putty. We recommend having a first trial with a sample 30cc cartridge to get a better feel of the product behavior.

The flow rate of Tputty™ 910 measured with a 75cc cartridge with 0.125" nozzle:



Notes: Tputty™ 910 shows similar flow ability than Tputty™ 607 despite higher Tc performance.

## Troubleshooting Guideline

Problems	Recommendations
<b>Material not coming out fast enough</b>	<ol style="list-style-type: none"> <li>1. A kind of higher-pressure material supply pump will be very helpful to improve it.</li> <li>2. Try to reduce the resistance force of the material supply pipe, for example, reduce the length of the material pipe or increase the diameter of the material supply pipe or avoiding a rectangle of the material supply pipe.</li> <li>3. Heating the material to 60 °C ~80 °C when dispensing by a kind of heating control dispensing valve.</li> </ol>
<b>A small dot cannot sticky on the surface, but it is taken off with the dispensing nozzle</b>	<ol style="list-style-type: none"> <li>1. Try to reduce the inner diameter of the dispensing nozzle.</li> <li>2. Optimize the distance from the surface to the dispensing nozzle, not too far and not too close.</li> <li>3. Try to add about 0.3s~0.5s waiting time before the dispensing nozzle moving to another position.</li> <li>4. Not moving the dispensing nozzle up directly but moving it to left and right before up.</li> <li>5. Using a kind of heating control dispensing valve to heat the material 60°C~80°C when dispensing</li> </ol>
<b>The dispensing weight Cpk not very good</b>	<ol style="list-style-type: none"> <li>1. A kind of metering dispensing valve will be needed.</li> <li>2. Selected a proper metering valve model, not too big but can meet the capacity, for example a cylinder piston metering valve with bigger diameter will decrease the dispensing precision.</li> <li>3. Increase the dispensing pressure for screw metering dispensing valve or reduce the rotational speed of the screw.</li> <li>4. Using a kind of heating control dispensing valve to heat the material 60°C~80°C when dispensing, it will be positive for Cpk.</li> </ol>
<b>Cartridge broken during dispensing</b>	<ol style="list-style-type: none"> <li>1. Maybe the dispensing pressure is too high, try to reduce the dispensing pressure or reduce the diameter of the air cylinder.</li> <li>2. Try to use a metal protection fixture outside the cartridge, contact Laird for technical supporting of these fixture if needed.</li> </ol>