

# ARATHANE® 7762-1 Thermal Transfer Adhesive

## Product Description

ARATHANE® 7762-1 Adhesive is a mercury-free, single-component polyurethane specifically formulated as a thermal transfer adhesive (TTA). It is formulated to have high purity and very low outgassing characteristics. It features extremely good thermal shock resistance combined with excellent hydrolytic stability and resistance to solder processing temperatures, and most common printed wiring board cleaning chemicals. ARATHANE® 7762-1 Adhesive can be automatically dispensed for high output applications and reduced handling.

ARATHANE® 7762-1 Adhesive is a variant of ARATHANE® 7760-1 Adhesive, designed to give a controlled bond line thickness (5 mil). It is ideally suited for the bonding of “flat packs,” PLCC’s, and other devices where control of bond line thickness is critical or desired. It can be used for bonding, filleting, and protection of components on printed wiring boards or in other applications where high thermal expansion mismatches are problematic.

## Features

- One component, 100% solids, solvent free
- Excellent thermal shock resistance giving improved reliability
- High purity and very low outgassing (meet NASA requirements)
- Easy to re-work
- Excellent hydrolytic stability
- Good thermal conductivity
- High thixotropy/non-slump capability offering excellent process control
- Controlled bond line thickness (5 mil)
- Bonds well to a variety of substances
- Automatically dispensable, offering reduced handling and improved production output

## Typical Properties

Property	Value	Test Method
Appearance	Pink paste	Visual
Density g/cm <sup>3</sup>	2.0 - 2.3	ASTM D-792
Viscosity at 25°C, cP	300,000 - 500,000	ASTM D-2393

Flash point, °C	>94	ASTM D93
Percent Solids	100	ASTM D2369
Operating Temperature, °C		ASTM D-2393
Continuous	115	
Intermittent	220	

Note: Unless otherwise stated, the data were determined with typical production batches using standard test methods. They are typical values only, and do not constitute a product specification.

## Processing

ARATHANE® 7762-1 Adhesive is frozen and packed in dry ice at the factory to minimize the possibility of exposure to high temperatures during shipment. Avoid handling dry ice or frozen syringes with bare hands.

Remove syringe(s) from freezer storage and allow it to equilibrate at room temperature (30°C maximum) only. Do not attempt to quick thaw by heating, as this will greatly reduce working life. Typical thawing time for 10cc syringe is 15 minutes at 25°C.

## Processing Data

Property	Value
Working Life at 23°C, hours	≥2
Gel time at 100°C, min	5
Typical Cure Cycle	60 minutes at 100°C

## Typical Physical Properties

Unless otherwise stated, the data were determined with typical production batches using standard test methods. They are typical values only, and do not constitute a product specification.

Property	Value	Test Method
Hardness, Shore A	65 - 90	Shore A
Glass transition temperature, °C	-63	ISO 11359
Thermal conductivity, W/m·K	0.80	ISO 8894/90
Coefficient of thermal expansion, ppm/K		ISO 11359
Alpha 1	29 x 10 <sup>-6</sup>	
Alpha 2	88 x 10 <sup>-6</sup>	
Lap Shear Strength at 25°C, psi		ASTM D1002

Aluminum substrate	270	
Ajax Scrubbed Nickel Plate	300	
Freon Degreased Nickel Plate	130	
Freon Degreased Solder Plate	220	
Freon Degreased Polyamide	230	
Solvent Resistance, at 25°C (77°F)		ASTM D543
Immersion in IPA	Excellent/No Effect	
Freon Vapor Test	Excellent/No Effect	
Outgassing at 10 <sup>-6</sup> Torr		ASTM E595
Total Mass Loss, %	0.28	
Collectible Volatile Condensable Materials, %	0.03	

## Typical Electrical Properties

Property	Value	Test Method
Dielectric Strength, V/mil	600 - 660	IEC 60243
Volume Resistivity, Ω·cm	2.9 x 10 <sup>14</sup>	IEC 60093
Dielectric constant		IEC 60250
at 1 kHz	5.1	
at 10 kHz	5.0	
at 100 kHz	4.8	
at 1 MHz	4.6	
Dissipation factor		IEC 60250
at 10 kHz	0.0176	
at 100 kHz	0.0196	
at 1 MHz	0.0202	

## Storage

**ARATHANE® 7762-1 Adhesive** should be stored in a dry place, in the sealed original container, at temperatures below <-40°C (<-40°F). Under these storage conditions, the standard shelf life is **3 months** (from date of shipment). The product should not be exposed to direct sunlight.

For shipment this product is packaged in special Styrofoam cartons containing enough dry ice for a limited storage life of approximately 48 to 96 hours during shipment. Upon receipt, frozen syringes must be transferred to freezer storage at temperatures below -40°C (<-40°F) to ensure product shelf life reliability. Special care should be taken when handling dry ice to avoid severe skin damage or potential of asphyxiation in unventilated areas.

## **Precautionary Statement**

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

### **First Aid!**

Refer to SDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN**

**FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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