

# Arathane<sup>®</sup> 5753-A/B (LV)

## Urethane Casting Compound

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**General**

Arathane 5753-A/B (LV) is a translucent, amber, two component polyurethane casting compound which, when cured, provides excellent electrical insulation to electrical/electronic parts.

Arathane 5753-A/B (LV) exhibits excellent reversion resistance under heat and high humidity conditions. As a cured system, this material meets NASA outgassing properties critical for applications in outer space and high vacuum environments.

Arathane 5753-A/B (LV) is typically recommended for encapsulating coils, trim pots, potentiometers and modules with complicated circuitry and/or stress sensitive components.

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**Applications**

Stress sensitive components  
Outer space encapsulating applications

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**Benefits**

Excellent hydrolytic stability giving improved reliability  
100% solids for improved ease of use and handling  
Low outgassing, meeting NASA requirements  
High thermal shock resistance offering greater component protection and reliability

<b>Typical Properties*</b>	<b>Arathane 5753 A</b>	
	Viscosity @ 25°C, cPs	25 – 55
	Specific gravity, g/cm <sup>3</sup>	1.21
	Flash point, °C	177
	Percent solids	100
	As supplied form	Amber Liquid
	Shelf life, unopened, months	6
	<b>Arathane 5753 B (LV)</b>	
	Viscosity @ 25°C, cPs	5,000 – 10,000
	Density, g/cm <sup>3</sup>	1.05
	Flash point, open cup, °C	232
	Percent solids	100
	As supplied form	Translucent Liquid
	Shelf life, unopened, months	6
	<b>Mixed</b>	
	Viscosity @ 25°C after 1h, cPs Spindle # 7 @ 10rpm	<= 250,000
	Hardness, Shore A	45 – 60

\* Typical properties are based on Huntsman's test methods. Copies are available upon request.

**Packaging & Storage** Arathane 5753-A/B (LV) is moisture sensitive and should be stored in a dry place and, whenever possible, in the tightly closed original containers at 25°-40°C. Under these conditions, shelf life will be 6 months from the date of shipping. Partial containers should be resealed using dry nitrogen or argon. Contact Customer Service for packaging information.

**System Preparation** Exposure of Part A to low temperatures for prolonged periods may cause crystallization. Part A must be reliquified by heating to 70°C (158°F). Heat Part A until clear amber solution is achieved. Remove container from oven. Do not disturb contents. Allow material to cool to 25°-40°C in a controlled environment; do not force cool.

Measure height of the precipitate from outside of bottle. Do not use if level of precipitate is above 3/8 inches (0.6 cm), or if liquid remains cloudy or contains gelled particles. Contact our Customer Service Department with lot number, date received and condition of bottle.

Material is ready for use if level of precipitate is below 3/8 inches. Do not agitate. Slowly decant clear resin out of the bottle without disturbing the precipitate. Enough material has been packaged to allow for any precipitate and to assure sufficient Part A. For best results, filter Part A through nylon tricot, 10-25 micron size.

Use entire bottle so remaining material will not be contaminated with moisture. If this is not possible, any remaining material must be will blanketed with dry nitrogen or argon and the cap tightened securely. Store at 25°-40°C for best long-term stability.

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**Mixing** Container should be plastic, glass, or metal. Paper and wooden containers or utensils are not recommended because of high moisture content. Weigh Part B into container first. Add Part A to container. (Do not use Part A if precipitate level is greater than 3/8 inches.)

Slow machine mixing or hand stirring will minimize air entrapment. Complete and thorough mixing of Parts A and B is essential for optimum end properties.

Mixture may be vacuumed by drawing 29-29.5 inches of Hg for 2-3 minutes. Material will rise and "break" so allow enough room for expansion inside the container.

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<b>Mix ratio</b>	Parts by weight
Arathane 5753 A	20
Arathane 5753 B (LV)	100

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<b>Processing</b>	Initial viscosity, cPs	6000
	Pot life @ 25°C (100g), min	30
	Recommended cure times*	24 hours at 25°C (or) 8 hours at 95°C

\* Cure schedule results in approximately 90% properties, additional room temperature or elevated temperature cure is required for 100% properties

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<b>Physical Properties (typical values)</b>	Hardness Shore A,	45
	Tensile strength at break, psi (N/mm <sup>2</sup> )	350 (2.4)
	Elongation, %	250
	Tensile modulus, psi	140
	Tg, °C	< -69
	Thermal conductivity, Cal/sec.cm.°C	3.9 x 10 <sup>-4</sup>
	Coefficient of thermal expansion, ppm/°C	
	Alpha 1	76
	Alpha 2	170
	Fungus resistance	Non-nutrient
	Maximum continuous use temperature, °C	130
	<b>Outgassing at 10<sup>-6</sup> Torr</b>	
	Total Mass loss, %	0.41
	Collectible volatile condensable materials, %	0.03

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**Electrical Properties  
(typical values)**

During testing, avg., $\Omega$	$> 1 \times 10^9$
After testing, avg., $\Omega$	$> 2.5 \times 10^{12}$
Volume resistivity, ohms-cm	
@ 25°C	$9.3 \times 10^{15}$
@ 95°C	$2.0 \times 10^{13}$
Dielectric strength, volts/mil	350
Dielectric constant	
@ 25°C, 60 Hz	3.33
@ 25°C, 1 MHz	2.90
Dissipation factor	
@ 25°C, 60 Hz	0.027
@ 25°C, 1 MHz	0.025
Arc resistance, sec.	75

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**Handling/Safety  
Precautions**

Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding material safety data sheets

**Arathane 5753 A**

**Warning!** Causes severe eye and skin irritation and possible eye burns. Vapor or mist harmful if inhaled. Harmful if swallowed. May cause allergic respiratory and skin reaction.

**Arathane 5753 B(LV)**

**Caution!** May cause eye irritation. Prolonged or repeated skin contact may cause irritation and may cause allergic skin reaction. Harmful if inhaled. Harmful if swallowed.

Work in a well-ventilated area and use clean, dry tools for mixing and applying. For two component systems, combine the resin and hardener according to mix ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

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**First Aid****In case of contact:**

**Skin:** Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Discard contaminated shoes.

**Eyes:** Immediately flush with water for at least 15 minutes. Call a physician.

**Ingestion:** If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

**Inhalation:** Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

**Other:** Referral to physician is recommended if there is any question about the seriousness of an injury

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**Note**

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**Huntsman Advanced Materials  
Americas Inc.**

Arathane 5753-A/B (LV)  
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