

ABLESTIK 104 RR FIL

April 2020

PRODUCT DESCRIPTION

ABLESTIK 104RR FIL provides the following product characteristics:

Technology	Epoxy
Appearance, Resin (Component A)	Black liquid
Appearance, Hardener (Component B)	White powder
Components	Two components - requires mixing
Mixing Ratio, by weight Component A: Component B	100 : 64
Product Benefits	<ul style="list-style-type: none"> • Excellent chemical resistance • High shear strength • High temperature resistance • Excellent adhesion
Cure	Heat cure
Application	Component assembly, Non-conductive adhesive
Key Substrates	Aluminium, Stainless steel, Carbon steel, Brass, Ceramic, Glass and Thermoset plastic
Operating Temperature - Continuous	-25 to 230 °C
Highest Operating Temp - Intermittent	290 °C

ABLESTIK 104 RR FIL is a two component epoxy adhesive which exhibits outstanding physical and dielectric properties. It contains no solvents or volatile matter and is suitable for bonding a wide variety of porous or non porous materials. The resistance of ABLESTIK 104RR FIL to a wide variety of solvents and chemicals is substantially better than can be obtained with more conventional adhesives.

TYPICAL UNCURED PROPERTIES

ABLESTIK 104RR (Resin)

Viscosity @ 25 °C, mPa·s (cP)	55,000
Density, g/cm ³	1.5
Pot Life @ room temperature, hours	12
Shelf Life @ 18 to 25°C, days	180

TYPICAL CURING PERFORMANCE

Cure Schedule

1 hour @ 200°C
2 hours @ 180°C
3 hours @ 150°C
6 hours @ 120°C

For optimum performance at temperature above 205°C, a post cure of 12 hours at 260°C is recommended.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Hardness, Shore D	90
Coefficient of Thermal Expansion, 10 ⁻⁶ K ⁻¹	49
Heat Distortion Temperature, °C	260

Electrical Properties

Volume Resistivity (Bulk), ohm-cm :	
@ 25°C	10 ¹⁵
@ 180°C	10 ¹³
Dielectric Strength, kV/mm	15.6

Outgassing Properties

Outgassing, per NASA Reference Publication 1124, %:	
sample cured 6 hours @ 120°C	
TML	0.52
CVM	0.08

Chemical Resistance

Typical Solvent and Chemical Resistance % Weight Change
After 7 days Immersion @ 24°C

Chemical	% Weight Change	Chemical	% Weight Change
30% H ₂ SO ₄	+ 0.19	10% NaCl	+ 0.21
3% H ₂ SO ₄	+ 0.26	5% Phenol	+ 0.23
10% NaOH	+ 0.11	Distilled H ₂ O	+ 0.20
1% NaOH	+ 0.22	10% HNO ₃	+ 0.23
95% C ₂ H ₅ OH	+ 0.7	10% HCl	+ 0.22
50% C ₂ H ₅ OH	+ 0.18	5% CH ₃ COOH	+ 0.24
Acetone	+ 0.06	10% NH ₄ OH	+ 0.76
Ethyl Acetate	+ 0.00	2% Na ₂ CO ₃	+ 0.22
CCl ₄	+ 0.04	3% H ₂ O ₂	+ 0.23
Toluene	+ 0.04	10% Citric Acid	+ 0.22
Heptane	+ 0.02	Oleic Acid	+ 0.09
JP-4	+ 0	JP-5	0

TYPICAL PERFORMANCE OF CURED MATERIAL**Shear Strength**

Tensile Lap Shear Strength :

Aluminium to aluminium:

Tested @ 25 °C	N/mm ²	10
	(psi)	(1,450)
Tested @ 150 °C	N/mm ²	12
	(psi)	(1,740)
Tested @ 230 °C	N/mm ²	6.8
	(psi)	(986)
Tested @ 290 °C	N/mm ²	4.2
	(psi)	(609)

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Part A is a medium viscosity black syrup which should be mixed to a uniform consistency before removing from the container. Part B is a white finely divided powder.
2. Weigh out the required amount of Part A and add 64 parts by weight of Part B for each 100 parts of Part A.
3. Complete cleaning of the substrates should be performed to remove contamination such as oxide layers, dust, moisture, salt and oils which can cause poor adhesion or corrosion in a bonded part.
4. Blend Part A and Part B to a uniform consistency. Modest heating of Part A, up to about 60°C will make blending easier. Heating above 60°C is not recommended as the pot life will be reduced substantially. The pot life of the blended material at room temperature is at least 12 hours.
5. Clean surfaces to be bonded. Roughening with emery paper and a wash with acetone or methyl ethyl ketone is recommended for optimum adhesion.
6. Apply adhesive to all surfaces to be bonded and join together.
7. In most applications only contact pressure is required.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

STORAGE:

Store in original, tightly covered containers in clean, dry areas. Storage information may be indicated on the product container labeling.

Optimal Storage : 18 to 25 °C

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

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