Technical Data Sheet

ABLESTIK 104 STANDARD GRADE

September 2018

PRODUCT DESCRIPTION

ABLESTIK 104 Standard Grade provides the following product characteristics:

Technology	Epoxy
Technology (Part B)	Anhydride
Appearance, Resin (Component A)	Black syrup
Appearance, Hardener (Component B)	White powder
Components	Two component - requires mixing
Mixing Ratio, by weight Component A: Component B	100 : 64
Product Benefits	● Excellent chemical resistance ● Non-conductive ● High shear strength ● High temperature resistance ● Long pot life
Cure	Heat cure
Application	Assembly
Key Substrates	Metals , Glass, Ceramic and Thermoset plastic
Operating Temperature	-25 to 230ºC

ABLESTIK 104 Standard Grade adhesive is designed for applications requiring very high temperature exposures.This adhesive can withstand continuous exposure at temperatures as high as 230ºC. It may be used at temperatures up to 290ºC for short periods or intermittent use

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties

Viscosity @ 25 °C, mPa.s (cP)	35,000
Specific Gravity	1.35
Shelf Life @ 25°C, days	183
Flash Point - See SDS	

Part B Properties

Shelf Life @ 25°C, days	183

Mixed Properties

Working Time, 100 g mass @ 25 °C, hours	>12
Density , g/cm^3	1.4

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 temperatures above 205ºC, a post cure of 12 hours at 260ºC 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, minimum	90
Coefficient of Thermal Expansion TMA, ppm/°C	60
Glass Transition Temperature DSC/TMA, °C	>225
Heat Distortion Temperature, °C minimum	260

Electrical Properties

Volume Resistivity @ 25ºC, ohm-cm	10^{15}
Volume Resistivity @180ºC, ohm-cm	10^{13}
Dielectric Strength, kV/mm, 3mm sample	15.7

Outgassing Properties

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

TML	0.52
CVCM	0.08

Chemical Resistance

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

Chemical	% Weight Change	Chemical	% Weight Change
30% H2so4	+ 0.19	10% NaCl	+ 0.21
3% H2so4	+ 0.26	5% Phenol	+ 0.23
10% NaOH	+ 0.11	Distilled H2O	+ 0.20
1% NaOH	+ 0.22	10% Hno3	+ 0.23
95% c2h5oh	+ 0.7	10% HCl	+ 0.22
50% c2h5oh	+ 0.18	5% ch2cooh	+ 0.24
Acetone	+ 0.06	10% nh4oh	+ 0.76
Ethyl Acetate	+ 0.00	2% Na2CO3	+ 0.22
CCl4	+ 0.04	3% h2o2	+ 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 :

Aluminum to aluminum:

Tested @ 25 °C (minimuim)	N/mm²	10.0
	(psi)	(1,450)
Tested @150 °C (minimum)	N/mm²	12.0
	(psi)	(1,740)
Tested @ 230 °C (minimum)	N/mm²	6.8
	(psi)	(986)
Tested @290 °C (minimum)	N/mm²	4.2
	(psi)	(609)

GENERAL INFORMATION

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

DIRECTIONS FOR USE

Ablestik 104 Standard Grade Part A is a medium viscosity black syrup which should be mixed to a uniform consistency before removing from the container. Ablestik 104 RR Standard Grade Part B is a white finely divided powder.

1. 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.
2. Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.
3. Blend Part A and Part B to a uniform consistency. Modest heating of Part A up to around 60°C will make blending easier. Heating above 60°C is not recommended as the pot life will be reduced substantially. The pot life ot the blended material at room temperature is at least 12 hours.
4. If possible, power mix for an additional 2 to 3 minutes. Avoid high mixing speeds. This can entrap excessive amounts of air. It can also cause overheating of the mixture, resulting in reduced working life.
5. Apply adhesive to all surfaces to be bonded and join together.
6. 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 : 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.

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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Reference 0.0