Technical Data Sheet

BONDERITE® B-DC 5100

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PRODUCT DESCRIPTION

BONDERITE® B-DC 5100 provides the following product characteristics:

Technology	UV acrylate
Appearance	Blue
Coating type	Liquid
Cure	UV cure
Application	Dielectric coating
Thickness ASTM D374, mm	0.075 - 0.125
Operating temperature range, °C	-40 to 125
Flammability rating, UL	UL 94 V-0

BONDERITE® B-DC 5100 is a dielectric coating with high bond strength enabling battery-to-pack and battery-to-body assembly.

FEATURES AND BENEFITS

- Low specific gravity of dry coating
- Uniform, thin coating layer with optimized edge coverage
- High surface energy ensures excellent adhesion to the next layer like 2 component polyurethan, 2 component epoxy, 2K silicone, acrylates and MMA
- Highly sag resistant and ideal for complex parts such as battery cell cans
- Compatible with multiple application methods

BONDERITE® B-DC 5100 is a UV-curable, acrylate-based dielectric coating. It is a liquid-applied functional layer designed to provide reliable electrical insulation together with enhanced bond strength enabling battery-to-pack and battery-to-body assembly. The coating is applied as a liquid and forms a robust, uniform protective film upon curing. With a typical applied thickness 0.075 to 0.125 mm, the material delivers consistent dielectric reliability.

TYPICAL APPLICATIONS

- Battery cells
- Side plates

TYPICAL PROPERTIES OF UNCURED MATERIAL

Density, ASTM D792, g/cm^3	1,2 - 1,3
Viscosity Brookfield, @ 25°C, mPa.s	
LV Spindle 3	1000 - 6000
Shelf life @ 25°C, months	10

TYPICAL PROPERTIES OF CURED MATERIAL

Pencil hardness	H
Flexibility (Mandrel) 25mm bar	180°
Thermal conductivity, ASTM D5470, W/(m-K)	0,3-0,4
Tensile strength, ISO 527, MPa @ 25°C	10
Shear strength, ASTM D1002, MPa Alu @ 25°C	10

Electrical properties

Dielectric strength, AC, ASTM D 149, kV/mm	> 80
Dielectric constant, ASTM D150 @ 50 Hz – 1 MHz	< 4
Volume resistivity, DC, ASTM D257 Ω·m	>1x10^{12}

TYPICAL CURING PERFORMANCE

Typical curing steps for 125 mm thickness	2
Final cure: H+ or D (FE-doped) Hg lamps	

Final cure: Fe-doped Hg Lamp (D)		
	Dosage (mJ/cm^2)	**Intensity (mW/cm^2)**
UVA	Minimum 1800	Recommend ~6400
UVB	Minimum 1200	Recommend ~2300
UVC	Minimum 300	Recommend ~575

Final cure: H+ Hg Lamp		
	Dosage (mJ/cm^2)	**Intensity (mW/cm^2)**
UVA	Minimum 1800	Recommend ~2700
UVB	Minimum 1800	Recommend ~2500
UVC	Minimum 700	Recommend ~900

The above cure profiles are guideline recommendations.
UV cure conditions (dosage and intensity) may vary based on customers' experience and their application requirements, as well as customer UV curing equipment and oven loading.

Application

Method	Air atomized spray/ Airless spray/ Drop on demand
Temperature of coating	Preheat to 50-70°C
Air temperature	18-70°C; Preheating air is not necessary, if used should be close to coating temperature
Air pressure	0.6 – 1.0 bar with HVLP; range depends on spray gun
Booth temperature	16-30°C
Booth humidity	< 80% RH
Part temperature	16-30°C
Filtration, Mesh size	83 microns
Cleaning solvents	MEK, Acetone, Ethyl acetate, Butyl acetate

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

Directions for use
1. For high strength structural bonds, remove surface contaminants such as paint, oxide films, oils, dust, mold release agents and all other surface contaminants.
2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.

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 the specifications of this product.

Configurations available
BONDERITE® B-DC 5100 is available in the following configurations:

Pails	23 kg pails
Drums	200 liter drums

Storage
Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.
Optimal storage: 5 to 25°C in a sealed and dark container.

Material removed from containers may be contaminated during use. Do not return products 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.

Conversions
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer
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