Technical Process Bulletin

BONDERITE S-FN 213 ACHESON DRYFILM COATING

(KNOWN AS DAG 213)

Issued
7/2/2014

DESCRIPTION

BONDERITE S-FN 213 ACHESON (known as DAG 213) is designed to provide controlled electrical resistance properties. **BONDERITE S-FN 213 ACHESON** is a dispersion of finely divided graphite pigment in an epoxy resin solution. When properly cured, it has excellent adhesion to epoxy circuit boards, bushings, plastics and ceramics. **BONDERITE S-FN 213 ACHESON** also has excellent wearing properties. It provides chemical resistance to oils and many solvents, but not to enamel strippers.

BONDERITE S-FN 213 ACHESON as a lubricant coating provides clean, dry, long-wearing, and superior maintenance-free lubrication for a wide range of light to medium load applications. A thin film of **BONDERITE S-FN 213 ACHESON** keeps wear uniform and reduces friction on mating metal parts without requiring increased manufacturing tolerances. Components are protected from metal-to-metal contact even in applications approaching boundary lubrication, reducing the risk of damage due to partial or complete seizure. Formulated from processed micro-graphite and epoxy resin, **BONDERITE S-FN 213 ACHESON** forms tightly adherent coatings on many types of substrates. In addition to high lubricity, **BONDERITE S-FN 213 ACHESON** coatings exhibit extremely good wear resistance to oils and solvents (except enamel strippers).

FEATURES

- Finely sized graphite particles
- Superior adhesion to epoxy, metals, plastics and ceramics
- Compatibility with Acheson electrical coatings
- Excellent adhesion to many substrates
- Resistant to a variety of solvents
- Remains flexible over a wide range of temperatures
- Good release properties with a low coefficient of friction
- Consistent and uniform dip spin or spray application performance
- High degree of lubricity

BENEFITS

- Provides repeatable controlled electrical resistance properties based on formulation and film thickness
- Multiple utilization to reduce inventory, handling and production costs for producing multiple items
- Provides easy customization of blends in order to achieve desired electrical properties
- Minimal pre-treatment required to achieve coating adhesion, thereby reducing processing costs
- Broad component application for a variety of environments, providing an economical choice for versatility of applications
- Application for a variety of environmental performance requirements
- Ability to meet lubrication and assembly requirements for the component and application
- Versatile application techniques to minimize operation costs for application
- Extended wear resistance of components that will allow for lower warranty and repair costs

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TYPICAL APPLICATIONS

- Static bleed on epoxy glass laminates
- High voltage corona preventative
- Heat generating coating on high voltage electrical bushings Issued 6/26/2013
- Lubrication of cylinders and pistons, lock mechanisms
- Lubrication of plungers, sliding rails and any light load mechanism

TYPICAL PROPERTIES (of wet product)

Color:	black
Pigment:	graphite
Binder:	thermoset resins
Carrier:	Acheson SB-2
Diluent:	Acheson SB-2
Consistency:	liquid
Viscosity:	2800 mPa s
Density:	0.98 kg/l (8.2 lb/gal)
Solids	content by weight: 28%
Flash point:	7°C (45 °F)
VOC:	709 g/l (5.9 lb/gal)
Theoretical coverage:	8.4 m2/l @ 25µm (338 ft2/gal @ 1 mil)

TYPICAL PROPERTIES (as cured)

Color	black
Sheet resistance:	< 1000 ohms/sq @ 25µm (1 mil) dry film thickness
Service temperature	
-continuous:	150°C (302°F)
-intermittent:	260°C (500°F)
Coefficient of friction:	0.114 static
Salt spray resistance*:	> 96 hours over zinc phosphated surface, 25 micron film thickness

METHOD OF USE

Surface Preparation

Substrates should be clean and dry. A chemical rinse or sandblast is usually sufficient to key the surface properly. However, if maximum adhesion is required, the combination of cleaning and surface pre-treatment by mechanical or chemical means is essential.

Mixing/Blending/Dilution

BONDERITE S-FN 213 ACHESON is supplied as a concentrate. Add a small amount of the diluent slowly while stirring. The dilution ratio will depend on the viscosity required by the application method chosen, but in no case should the ratio exceed 1:2 (product:diluent).

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Application

BONDERITE S-FN 213 ACHESON should be thoroughly mixed prior to use and agitated periodically during use. The material can be applied by standard spray or dip methods. An external atomizing type spray gun is recommended with air pressure in the range of 25 to 40 psi (2 to 3 metric atmospheres). For maximum corrosion resistance use the appropriate surface pre-treatment, then spray apply multiple coats with a ten minute air dry between coats. Allow the final coat to air dry before oven curing.

Note: Handle **BONDERITE S-FN 213 ACHESON** as you would a quality automotive coating.

AVOID DRY SPRAY, as this will cause poor adhesion. To reduce over spray, use the minimum atomization pressure required for adequate coverage.

Curing

The applied film should be air dried for about 10 minutes before baking to avoid trapping any solvents. The recommended cure cycle is 177°C (350°F) for 60 minutes or 220°C (425°F) for 20 minutes.

STORAGE/ HANDLING

Shelf life for this product is 2 years from date of qualification under original seal. Keep container tightly closed when not in use. Store in a cool, well-ventilated area. Empty containers may retain hazardous properties. Follow all MSDS/label warnings even after container is emptied.

APPLICATION ASSISTANCE

Acheson's Application Specialists are available to assist you in production start-up with **BONDERITE S-FN 213 ACHESON**. Visit our website www.achesonindustries.com for more information and for the Acheson global location nearest you.

HEALTH & SAFETY

Please consult Material Safety Data Sheet