Technical Data Sheet

# LOCTITE EDAG SP 413 E&C

September 2014

## PRODUCT DESCRIPTION

LOCTITE EDAG SP 413 E&C provides the following product characteristics:

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|---|---|
| **Technology** | Thermoplastic |
| Appearance | Silver |
| Operating Temperature-(Maximum) | 105ºC |
| Solvent | MEK |
| Product Benefits | • Electrically conductive<br>• High coverage<br>• Excellent electro-magnetic shielding<br>• Excellent environmental resistance<br>• Compatible with commonly used plastics |
| **Cure** | Air dry |
| **Application** | Conductive coating |
| Typical Assembly Applications | Plastic housing of consumer electronics and medical equipments, Scientific and medical equipment and Industrial applications |

LOCTITE EDAG SP 413 E&C shielding coating is designed to provide electromagnetic compatibility (EMC) on plastic enclosures for electronic equipment housing

This material provides excellent shielding against radiated electromagnetic interference (EMI) at low coating thicknesses

## TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|---|
| Solids Content, % | 47 |
| Viscosity @ 20 °C, mPa·s (cP): Speed 20 rpm | 900 |
| Density, kg/cm³ | 1,340 |
| Theoretical coverage, m² /kg: @ 10 µm coating thickness | 10 |
| Shelf Life @ 5 to 30°C, year | 1 |
| Flash Point , ºC | 14 |

## TYPICAL PROPERTIES OF CURED MATERIAL

On Lexan panels, dried 30 minutes @ 70 ºC

**Physical Properties**

| | |
|---|---|
| Attenuation @ 15 µm coating thickness, dB | 70 to 80 |

**Electrical Properties**

| | |
|---|---|
| Sheet Resistivity , ohms/sq: @ 25 µm coating thickness | <0.015 |

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. **Surface Preparation**
   - Surface to be coated must be dry and free on contaminants such as oil or chemical residues.
2. **Mixing/Dilution**
   - Thoroughly mix LOCTITE EDAG SP 413 E&C before use. There should be no unmixed solid material left at the bottom of the container.
   - Recommended dilution ratio(s) as follows:
     **Brush Application:** Use LOCTITE EDAG SP 413 E&C neat
     **Spray Application:**
     - Use Methylethylketone (MEK)
     - By Volume: 1 part(s) of product to 1 part(s) of solvent
     - By Weight: 2 part(s) of product to 1 part(s) of solvent
   - If the evaporation speed of this mixture is too high, replace 10 to 15% of the Methylethylketone (MEK) by Diaceton Alcohol (DAA).
3. **Application**
   - When applying LOCTITE EDAG SP 413 E&C by spray, a conventional paddle-agitated pressure tank system should be used.
   - It is recommended to maintain a spray pressure of 1.5 to 2.5 Bar with a nozzle diameter varying from 0.8 to 1.5 mm.
   - Small prototype runs may be sprayed with well-mixed product, using suction cup spray equipment.
   - A 7 to 20 µm coating thickness is recommended for good EMI shielding performance.
   - Avoid dry spraying for maximum adhesion and conductivity.
4. **Drying**
   - LOCTITE EDAG SP 413 E&C dries to touch in about 10 minutes and can be handled after a further appproximately 10 minute hold, depending on ambient temperature.
   - Best coating properties will be achieved after 4 to 8 hours air drying, depending on coating thickness and ambient temperatures.
   - For production runs, conventional forced drying methods (30 minutes @ 70 to 80ºC) may be used for faster processing. Forced drying of the coating will noticeably improve conductivity.

5. **Cleanup**
   - For high volume production where masks are used to prevent coating certain areas, the masks can be cleaned with esters (butylacetate, ethylacetate) or ketones (MIBK, MEK) solvents.
   - Spray or mixing equipment may be cleaned with the same solvents.

## Storage

Store product in the unopened container in a cool dry well ventilated area. Storage information may be indicated on the product container labeling.

**Optimal Storage : 5 to 30 °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.

Empty containers may retain hazardous properties.

## 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.

## Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa = N/mm²
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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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 2

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