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Certificate of Analysis

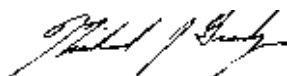
Product Name:

Silver, dispersion – nanoparticle, ≤50 nm particle size, 30–35 wt. % in triethylene glycol monoethyl ether, spec. resistivity ~2 μΩ-cm, for printing on ITO and glass

Product Number: 736481
Batch Number: MKBX0066V
Brand: ALDRICH
Formula: Ag
Formula Weight: 107.87 g/mol
Storage Temperature: Store at 2 - 8 °C
Quality Release Date: 17 NOV 2015
Date Retested: 06 JUL 2016
Recommended Retest Date: JAN 2017

Ag

| Test | Specification | Result |
|--|-----------------------|------------|
| Appearance (Color) | Grey | Grey |
| Appearance (Form) | Suspension | Suspension |
| ICP Major Analysis | Confirmed | Confirmed |
| Confirms Silver Component | | |
| Proton NMR Spectrum | Conforms to Structure | Conforms |
| Solid Content | 30 - 35 % | 31 % |
| Viscosity | Confirmed | Confirmed |
| 10~ 18 cp | | |
| Surface Tension (dyn/cm) | 30 - 50 | 37 |
| Miscellaneous Assay | Confirmed | Confirmed |
| Curing Condition: > = 400 Deg C/30~ 60 min | | |
| Recommended Retest Period | ----- | ----- |
| 6 Months | | |



Michael Grady, Manager
 Quality Control
 Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.