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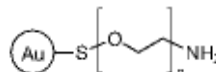
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Gold nanoparticles - 50 nm diameter, amine functionalized, PEG 5000 coated, OD 50, dispersion in H₂O

Product Number: 765414
Batch Number: MKBL5785V
Brand: ALDRICH
Storage Temperature: Store at 2 - 8 °C
Quality Release Date: 10 OCT 2012
Date Retested: 26 AUG 2013
Recommended Retest Date: AUG 2014



| Test | Specification | Result |
|---|----------------------|---------------|
| Appearance (Color) | Red to Very Dark Red | Very Dark Red |
| Appearance (Form) | Liquid | Liquid |
| Precipitate Present | None Present | None Present |
| Agglomeration/Precipitate | | |
| Identity | Confirmed | Confirmed |
| Gold Nanoparticles, Amine Functionalized, PEG 5000 Coated | | |
| Dispersion in Water | Confirmed | Confirmed |
| Concentration | Conforms | Conforms |
| (OD) = 50 | | |
| Core Size | 48 - 52 nm | 50 nm |
| (Diameter) | | |
| Recommended Retest Period | ----- | ----- |
| 12 Months | | |

Jamie Gleason, Manager
 Quality Control
 Milwaukee, Wisconsin 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.