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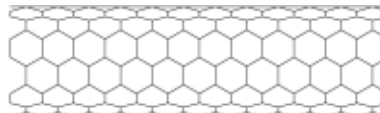
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Certificate of Analysis

Product Name:

Carbon nanotube array, multi-walled - vertically aligned on silicon wafer substrate

Product Number: 687804
Lot Number: MKBJ7414V
Brand: ALDRICH
CAS Number: 308068-56-6
Quality Release Date: 04 JAN 2012



Test	Specification	Result
Miscellaneous Assay	Pass	Pass
	SUBSTRATE 1CM X 1CM CHROMIUM COATED SI WAFER, {100} 300 - 550 UM THICK, N-DOPED, RESISTIVITY 1-10 OHM.CM	
Length	Pass	Pass
	MWNT Length 30 UM (SEM)	
Diameter	Pass	Pass
	MWNT Diameter 100 - 150 NM (SEM)	
Assay	Pass	Pass
	SITE DENSITY: 1~ 2X10^9 NANOMETERS/CM^2 (SEM)	
Miscellaneous Assay	Pass	Pass
	CARBON PURITY: > 95 ATOMIC % (XRAY)	
Miscellaneous Assay	Pass	Pass
	NANOTUBE TIP: NICKEL-CATALYST CAPPED, 100 - 150 NM (TEM)	

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.