

表 D.3 MWCNT(N) (長繊維)

Characteristic	Value	Measuring method
Bulk MWCNT		
Diameter ^a	44 nm (1.3)	SEM observation, n=100
BET surface area ^b	69 ± 37 m ² /g	N ₂ adsorption method
Specific weight	1.72 g/cm ³	Air comparison pycnometer model 1000
Bulk density		
G/D ratio	8 ± 3	Raman spectroscopy analysis
Oxygen/Carbon atomic ratio	0.004	X-ray Photoelectron Spectroscopy (XPS) analysis
Thermogravimetric analysis: mass loss onset temperature ^b	729 ± 16 °C	n= 5, condition: 40 °C /min
oxidation temperature		
ash content (residual mass) -ΔTG ^b	101 ± 4	
Half width of the peak at 25.60° ^d	1.01°	X-ray diffraction (XRD) analysis
Dispersed MWCNT in aq. 1 mg/mL Triton X-100 solution for the the intratracheal instillation study (Study Number: #NN-19)		
Diameter (from number-based distribution) ^a		
Length (from number-based distribution) ^a	3.4 μm (2.2)	TEM observation, n=1,002
G/D ratio	5.7	Raman spectroscopy analysis
Half width of the peak at 25.60° ^d	0.93°	X-ray diffraction (XRD) analysis

^a Values are expressed as geometric mean (geometric standard deviation)

^b Values are expressed as mean ± S.D. ^c Values are expressed as mean ± standard uncertainty.

^d Corresponding to the {0 0 3} plane of synthetic carbon/graphite [JCPDS Card #: 26-1079]

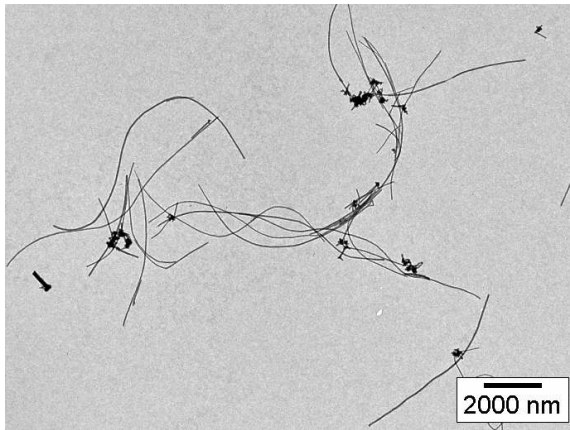


図 D.9 液中での分散状態 (TEM 画像)

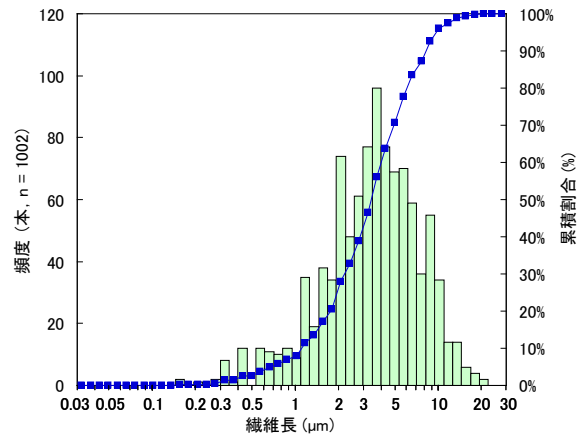


図 D.10 分散液中の繊維長分布

出典：中西準子 編 (2011) ナノ材料リスク評価書 -カーボンナノチューブ (CNT)-, 最終報告版：2011.8.17, NEDO プロジェクト (P06041) 「ナノ粒子特性評価手法の研究開発」