

Data Dictionary

Field name on Data page	Field definition
0.95 mg/ml -> 0.1mg/ml MWCNT in NIOSH dm	A DLS sample of MWCNT in NIOSH dm diluted from a concentration of 0.95 mg/ml to a concentration of 0.1 mg/ml in NIOSH dm
0.95mg/ml -> 0.1mg/ml MWCNT in NIOSH dm diluted in SNOT 1	A DLS sample of MWCNT in NIOSH dm diluted from a concentration of 0.95 mg/ml to a concentration of 0.1 mg/ml in SNOT
Amp	Amplitude
CI.95.LB	Confidence interval 95% lower bounds
CI.95.UB	Confidence interval 95% upper bounds
cP	Centipoise, and measure of dynamic viscosity
CS	Cup sonication
DLS	Dynamic light scattering conducted with a ZetaSizer Nano ZS, Model Zen3600
dm	Dispersion media
d.nm	Diameter in nanometers
Diameter	Diameter categorical value (nm) from the DLS
Experiment number (E###)	The experiment number for a set of animals submitted to pathology. E.g. E100 be 100 <sup>th</sup> submission to pathology.
Exposure	Material intranasally instilled in the nose
Fluorescence in the Neuroepithelium	Fluorescence consistent with instilled dextran observed at the second level of the nose (T2) in fluorescence microscopy of formalin-fixed, decalcified plastic sections of mouse nose
GFP fluorescence in olfactory neurons	Green fluorescence protein (GFP) green fluorescence in the olfactory neurons of the genetically engineered mouse [B6;129P2- <i>Omp4m3Mom/MomJ</i> heterozygous (OMP-GFP) mice] used in this study when imaged at necropsy by stereomicroscopy with epifluorescence. This confirms the presence and location of olfactory neurons in the olfactory bulb and nose of this mouse.
HBN	Hexagonal boron nitride
IQR	Interquartile range
Intensities (Percent)	Intensities percent demonstrates the total intensity of particles in various size bins from the ZetaSizer Nano ZS, Model Zen3600
LB	Lower bounds
Mouse Cage Card Number	Animal facility unique Identifier for each mouse that is placed on the outside of the cage that houses the mouse
Mouse tattoo number	Animal facility unique Identifier permanently tattooed on the mouse of a specific genotype

MWCNT	Multi-walled carbon nanotube
NIR	Near infrared
NIOSH	National Institute for Occupational Safety and Health
NIR fluorescence in nose	Near infrared (NIR) fluorescence is present in the nose imaged by stereomicroscopy with epifluorescence and indicates the presence of NIR dextran in the nose
NIR fluorescence in olfactory bulb	Near infrared (NIR) fluorescence is present in the olfactory bulb stereomicroscopy with epifluorescence and indicates the presence of NIR dextran in the olfactory bulb
Numbers (Percent)	Numbers percent demonstrates the total number of particles in various size bins from the ZetaSizer Nano ZS, Model Zen3600
Pathology number (P##-####)	Laboratory unique identifier for pathology specimens. That number is the letter P followed by the 2 digit calendar year and a 4 digit number. E.g. the first entry for calendar year 2023 is P23-0001
Pdi	Polydispersity Index is dimensionless and scaled such that values smaller than 0.05 are rarely seen other than with highly monodisperse standards. Values greater than 0.7 indicate that the sample has a very broad size distribution and is probably not suitable for the dynamic light scattering (DLS) technique. Pdi was obtained from the ZetaSizer Nano ZS, Model Zen3600
Post-exposure time	Time after intranasal instillation when sample was acquired
PS	Probe sonication
Rhodamine fluorescence in nose	Red fluorescence is present in the nose imaged by stereomicroscopy with epifluorescence and indicates the presence of rhodamine dextran in the nose
Rhodamine fluorescence in olfactory bulb	Red fluorescence is present in the olfactory bulb imaged by stereomicroscopy with epifluorescence and indicates the presence of rhodamine dextran in the olfactory bulb
Sample Name	Descriptive name for a sample analyzed by the ZetaSizer Nano ZS, Model Zen3600 (may be followed by a replicate number)
Sizes (d.nm)	Size (diameter) categories in nm from the ZetaSizer Nano ZS, Model Zen3600
SNOT	Solution for Nasal and Olfactory Transport

SNOT 1 minute cup sonication (fraction)	Fraction of SNOT particles within a specific diameter category after a 1 minute cup sonication
SNOT 1 minute probe sonication (fraction)	Fraction of SNOT particles within a specific diameter category after a 1 minute probe sonication
SNOT 1 minute probe sonication, 5x 1 minute cup sonication (fraction)	Fraction of SNOT particles within a specific diameter category after a 1 minute probe sonication followed by five 1 minute cup sonications
SNOT 10 second cup sonication (fraction)	Fraction of SNOT particles within a specific diameter category after a 10 second cup sonication
SNOT 30 second cup sonication (fraction)	Fraction of SNOT particles within a specific diameter category after a 30 second cup sonication
SNOT vortex (fraction)	Fraction of SNOT particles within a specific diameter category after vortexing
T2	Nose section level 2 – the second of 4 sections of nose taken from front to back of the nose
Type	Type of data output from the ZetaSizer Nano ZS, Model Zen3600
UB	Upper bounds
Volumes (Percent)	Volume percent demonstrates the total volume of particles in various size bins from the ZetaSizer Nano ZS, Model Zen3600
Z-average	The intensity weighted mean hydrodynamic size of the ensemble collection of particles measured by dynamic light scattering (DLS - ZetaSizer Nano ZS, Model Zen3600)