

3. Data Dictionary

Field Name	Field Definition
Particle	Data in the "Particle" column refers to the wire from which the thermal spray particulate was generated. Options are PMET540, PMET731, PMET540, or "Control" when no generated material was applied to the cell culture (negative control).
PMET540	Thermal spray rod with a measured elemental composition by percent weight of 99.4% Zinc, 0.325% Nickel, and 0.235% Iron.
PMET731	Thermal spray rod with a measured elemental composition by percent weight of 66.3% Iron, 26.2% Chromium, and 1.02% Manganese.
PMET885	Thermal spray rod with a measured elemental composition by percent weight of 96.9% Nickel, 1.69% Aluminum, 1.06% Zinc, and 0.699% Iron.
Dose (ug/mL)	Dose is the amount in micrograms per milliliter of thermal spray particulate that was applied to the cell culture during the exposure for which the associated data was gathered.
B(#) or B(#)_T(#)	"B" followed by a number is used to designate an individual biological replicate or "n" for data tables in which replicates are organized by row (i.e., B1 = Biological Replicate 1 while B4 = Biological Replicate 4). Biological replicates are averaged from technical replicates (assay replicates generated from a single biological sample to determine intra-assay variability) for statistical analysis. A "B" designation followed by an underscore "T" represents Technical Replicates (T) within a biological replicate.
BEAS2B_Viability	Data contained within describes the total live cells per mL (cells/mL) as an estimate for total viability of human bronchial BEAS-2B cell cultures.
BEAS2B_LDH	Data contained within this file describes lactate dehydrogenase (LDH) release from human bronchial BEAS-2B cultures as an approximation of cellular cytotoxicity post-exposure. LDH values represented as percent toxicity. To calculate percent cytotoxicity, the experimental was corrected by subtracting the low control and then divided by the value of the high control subtracted from the low control, then multiplied

	by 100%. High (positive) control was generated through addition of Triton X-100 to a colonized well to induce the upper limit of cytotoxicity detection.
BEAS2B_ET1	Data contained within this file represent Endothelin-1 (ET-1) protein release from human bronchial BEAS-2B cultures after the associated exposure series as measured by ELISA assay. ET-1 protein concentration is measured in pg/mL. Upper limit of detection for kit internal standard is 100 pg/mL.
BEAS2B_AntioxidantCapacity	This file contains data on the Total Antioxidant Capacity of human bronchial BEAS-2B cell cultures after exposure. Numerical values are non-enzymatic antioxidant concentrations represented in pg/mL.
BEAS2B_IL6	Data file containing Interleukin-6 (IL-6) concentration released by human bronchial BEAS-2B cell cultures post-exposures. Data values are measured via ELISA assay in pg/mL. Upper limit of detection for kit internal standard is 500 pg/mL.
BEAS2B_IL8	Data file containing Interleukin-8 (IL-8) concentration released by human bronchial BEAS-2B cell cultures post-exposures. Data values are measured via ELISA assay in pg/mL. Upper limit of detection for kit internal standard is 1,000 pg/mL.
BEAS2B_COMET	Data generated from COMET Assay which extrudes DNA from individual cells across a gel matrix to measure DNA breakage. Data was taken across multiple images per slide with one slide per three biological replicates. Each row represents DNA damage from an individual human bronchial BEAS-2B cell.
Tail Moment	Tail Moment is tail length of a DNA "COMET" times the percent DNA within the tail (calculated via DNA stain intensity) and is automatically generated by the assay software. Data is sorted vertically as every viable COMET within a slide was assessed per standard analytical practice.