Table S1. Standard substance quality control.

Heavy metals	Recovery rate %	Water-soluble ions	Detection limit mg/L
Hg	98.0	Na+	0.005
Al	113.5	NH4+	0.001
Cd	107.1	K+	0.001
Cr	84.4	Mg2+	0.004
Cu	104.9	Ca2+	0.003
Fe	111.4	Cl-	0.010
Ni	95.5	NO3-	0.007
Pb	85.7	SO42-	0.017
Zn	89.9		

Table S2. Daily average exposure calculation parameters of heavy metals.

Parameter	Physical meaning	Child	Adult	Unit	References
C	Heavy metal concentration			mg/kg	this research
IngR	Atmospheric dust frequency of hand and mouth intake	200	100	mg/d	[1]
inhR	Respiratory frequency	7.6	20	m^3/d	[2]
CF	Conversion coefficient	1×10^{-6}	1×10^{-6}	kg/mg	
EF	Exposure frequency	180	180	d/a	[3]
ED	Exposure period	6	24	a	[1,4]
BW	Average weight	15	55.9	kg	[5]
AT	Average exposure time of non-carcinogenic elements	365×ED	365×ED	d	[6]
	Average exposure time of carcinogenic elements	365×70	365×70	d	
PEF	Atmospheric dust reduction factor	1.36×10^9	1.36×10^9	m^3/kg	[1]
SA	Exposed dermal surface area	1077.5	2011.25	cm^2	[7]
SL	Dermal adhesion	0.20	0.07	mg/cm^2	[1,4]
ABS	Dermal absorptive factor	0.001	0001	——	[8]

Table S3. Pearson correlation of water-soluble ions and heave metals.

	Na^+	NH_4^+	K^+	Mg^{2+}	Ca^{2+}	Cl^-	NO_3^-	SO_4^{2-}	Hg	Al	Cd	Cr	Cu	Fe	Ni	Pb
Na^+	-0.003															
NH_4^+	**0.550****	0.186														
K^+	**0.735****	**0.303****	**0.654****													
Mg^{2+}	**0.374****	**0.619****	**0.505****	**0.727****												
Ca^{2+}	**0.892****	-0.014	**0.436****	**0.666****	**0.267***											
Cl^-	**0.263***	**0.492****	**0.319****	**0.567****	**0.708****	**0.378****										
NO_3^-	**0.559****	0.187	**0.493****	**0.717****	**0.392****	**0.586****	**0.504****									
Hg	-0.005	-0.092	0.033	-0.091	-0.086	-0.027	-0.070	-0.087								
Al	0.055	**-0.221***	-0.180	**-0.267***	**-0.395****	0.041	**-0.229***	-0.036	0.093							
Cd	0.098	-0.075	**0.253***	0.082	-0.069	0.105	-0.049	0.115	0.053	0.081						
Cr	0.076	-0.008	**0.327****	0.029	-0.067	0.041	-0.083	-0.014	0.081	0.159	**0.392****					
Cu	0.166	-0.137	**0.430****	0.083	-0.094	0.146	-0.065	0.053	0.167	**0.230***	**0.435****	**0.803****				
Fe	-0.052	-0.073	-0.128	**-0.203***	**-0.258***	-0.041	**-0.201***	-0.160	0.077	**0.282****	**0.323****	**0.407****	**0.216***			
Ni	**0.254***	0.057	0.164	0.092	0.148	**0.208***	0.118	0.133	0.077	0.081	**0.257***	**0.432****	**0.292****	**0.290****		
Pb	**0.210***	0.121	**0.341****	**0.220***	0.104	**0.330****	**0.235***	**0.268****	0.060	-0.025	**0.360****	**0.336****	**0.321****	0.187	**0.241***	
Zn	0.179	0.043	0.325**	0.140	0.101	**0.210***	0.115	0.064	**0.311****	-0.106	**0.369****	**0.400****	**0.424****	0.152	**0.338****	**0.392****

**significant at level 0.01, * significant at level 0.05.

Table S4. Reference doses of heavy metals in different ways of exposure (RfD) mg/(kg·d).

Project	Hg	Cd	Cr	Cu	Ni	Pb	Zn
RfD_{ing}	0.00030	0.00100	0.0030	0.0400	0.0200	0.0035	0.30
RfD_{inh}	0.00002	0.00100	0.0000	0.0420	0.0206	0.0035	0.30
RfD_{derm}	0.00009	0.00001	0.0001	0.0120	0.0054	0.0005	0.06

Table S5. Exposure doses of heavy metals in different ways of different populations (ADD) mg/(kg·d).

Metals	**Non-carcinogenic exposure doses**						**Carcinogenic exposure doses**	
	Ingestion route		Inhalation route		Dermal route			
	Child	Adult	Child	Adult	Child	Adult	Child	Adult
Hg	1.52E-06	2.03E-07	4.23E-11	2.99E-11	1.63E-09	2.86E-10		
Cd	4.86E-06	6.52E-07	1.36E-10	9.59E-11	5.24E-09	9.18E-10	7.33E-11	2.07E-10
Cr	1.17E-03	1.57E-04	3.26E-08	2.30E-08	1.26E-06	2.20E-07	1.17E-07	3.32E-07
Cu	4.14E-03	5.56E-04	1.16E-07	8.17E-08	4.46E-06	7.82E-07		
Ni	3.95E-04	5.30E-05	1.10E-08	7.79E-09	4.25E-07	7.46E-08	7.94E-10	2.24E-09
Pb	1.16E-03	1.55E-04	3.23E-08	2.28E-08	1.25E-06	2.19E-07		
Zn	4.79E-03	6.43E-04	1.34E-07	9.46E-08	5.16E-06	9.05E-07		

Table S6. Health risks of heavy metals in settled dust.

Elements	Non-carcinogenic risk								Carcinogenic risk (RI)	
	HQ-Ingestion route		HQ-Inhalation route		HQ-Dermal route		Hazard index(HI)			
	Child	Adult	Child	Adult	Child	Adult	Child	Adult	Child	Adult
Hg	5.05E-03	6.78E-04	2.82E-06	1.99E-06	1.90E-05	3.33E-06	5.07E-03	6.83E-04		
Cd	4.86E-03	6.52E-04	1.36E-07	9.59E-08	5.24E-04	9.18E-05	5.38E-03	7.44E-04	7.33E-11	2.07E-10
Cr	3.89E-01	5.22E-02	1.14E-03	8.05E-04	2.10E-02	3.67E-03	4.11E-01	5.67E-02	1.17E-07	3.32E-07
Cu	1.04E-01	1.39E-02	2.76E-06	1.95E-06	3.72E-04	6.52E-05	1.04E-01	1.40E-02		
Ni	1.97E-02	2.65E-03	5.35E-07	3.78E-07	7.88E-05	1.38E-05	1.98E-02	2.66E-03	7.94E-10	2.24E-09
Pb	3.31E-01	4.44E-02	9.19E-06	6.49E-06	2.38E-03	4.16E-04	3.33E-01	4.48E-02		
Zn	0.016	0.00214	4.46E-07	3.15E-07	8.61E-05	1.51E-05	0.0161	0.00216		

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