

US EPA ARCHIVE DOCUMENT

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>	
Seattle, WA	Boron	0.00287	0.00004	0.00004	0.00022	0.00050	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005	
	Gypsum Products	0.53300	0.00701	0.00655	0.03060	0.05220	0.01340	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726	
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Liming Materials	73.20000	0.99100	0.93900	3.89000	1.88000	0.53100	0.00010	0.00300	0.01000	0.00500	0.00800	0.20000	0.10100	0.00000	0.00000	0.32400	
	Micronutrients	0.02290	0.00034	0.00032	0.00150	0.00231	0.00061	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
	Mn	0.07270	0.00099	0.00092	0.00479	0.00680	0.00175	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
	NPK as N	12.70000	0.17000	0.15400	0.47900	0.33400	0.08900	0.00001	0.00050	0.00090	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04210	
	NPK for P2O5	2.04000	0.02630	0.02420	0.07250	0.05700	0.01480	0.00000	0.00007	0.00010	0.00009	0.00010	0.00301	0.00300	0.00000	0.00000	0.00630	
	P2O5 - 1	1.42000	0.01880	0.01760	0.06450	0.05110	0.01310	0.00000	0.00005	0.00009	0.00008	0.00009	0.00301	0.00301	0.00000	0.00000	0.00628	
	Potash	0.03260	0.00043	0.00040	0.00148	0.00251	0.00064	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.89000	0.02550	0.02360	0.11300	0.10500	0.02770	0.00000	0.00007	0.00020	0.00020	0.00020	0.00602	0.00600	0.00000	0.00000	0.01262	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.84000	0.06200	0.05830	0.17400	0.06190	0.01720	0.00001	0.00020	0.00040	0.00030	0.00030	0.00500	0.00500	0.00000	0.00000	0.01100	
	Albuquerque, NM	Boron	0.00297	0.00004	0.00004	0.00024	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000	0.00006
		Gypsum Products	0.53700	0.00694	0.00677	0.03250	0.05710	0.01460	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		80.50000	0.97800	0.95100	4.23000	2.03000	0.55500	0.00004	0.00300	0.01000	0.00500	0.00801	0.10100	0.20000	0.00000	0.00000	0.32400	
Micronutrients		0.02410	0.00032	0.00031	0.00169	0.00300	0.00077	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
Mn		0.07590	0.00097	0.00094	0.00525	0.00767	0.00197	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103	
NPK as N		13.10000	0.14800	0.14400	0.50400	0.33000	0.09130	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
NPK for P2O5		2.43000	0.02500	0.02420	0.07890	0.06130	0.01570	0.00000	0.00008	0.00010	0.00009	0.00010	0.00401	0.00400	0.00000	0.00000	0.00830	
P2O5 - 1		1.48000	0.01930	0.01880	0.06790	0.05480	0.01530	0.00000	0.00005	0.00009	0.00008	0.00010	0.00400	0.00400	0.00000	0.00000	0.00827	
Potash		0.03460	0.00041	0.00040	0.00161	0.00267	0.00070	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
S as Nutrient		1.97000	0.02360	0.02300	0.11900	0.11200	0.02850	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00601	0.00000	0.00000	0.01264	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		5.31000	0.06470	0.06300	0.18400	0.06650	0.01810	0.00000	0.00020	0.00030	0.00030	0.00030	0.00501	0.00500	0.00000	0.00000	0.01091	
Atlanta, GA		Boron	0.00277	0.00004	0.00004	0.00022	0.00046	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00002	0.00002	0.00000	0.00000	0.00004
		Gypsum Products	0.49900	0.00670	0.00627	0.02960	0.05270	0.01350	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	70.40000	0.92800	0.87900	3.61000	1.86000	0.52700	0.00006	0.00300	0.00901	0.00500	0.00701	0.20000	0.10000	0.00000	0.00000	0.32102	
	Micronutrients	0.02190	0.00032	0.00030	0.00143	0.00218	0.00056	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	Mn	0.06970	0.00096	0.00089	0.00465	0.00657	0.00169	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
	NPK as N	12.60000	0.15200	0.14200	0.47200	0.30900	0.08140	0.00000	0.00050	0.00080	0.00060	0.00070	0.02000	0.02000	0.00000	0.00000	0.04210	
	NPK for P2O5	1.95000	0.02310	0.02150	0.06220	0.05610	0.01460	0.00000	0.00007	0.00010	0.00008	0.00010	0.00301	0.00301	0.00000	0.00000	0.00630	
	P2O5 - 1	1.33000	0.01740	0.01650	0.05800	0.04820	0.01240	0.00000	0.00005	0.00009	0.00008	0.00009	0.00300	0.00300	0.00000	0.00000	0.00626	
	Potash	0.03280	0.00041	0.00038	0.00144	0.00247	0.00065	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.83000	0.02440	0.02290	0.11200	0.10200	0.02810	0.00000	0.00007	0.00020	0.00010	0.00020	0.00503	0.00600	0.00000	0.00000	0.01153	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.63000	0.05630	0.05380	0.16500	0.05820	0.01680	0.00000	0.00020	0.00030	0.00020	0.00030	0.00401	0.00400	0.00000	0.00000	0.00881	

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Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Bismarck, ND	Boron	0.00297	0.00004	0.00004	0.00023	0.00050	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
	Gypsum Products	0.52900	0.00661	0.00652	0.03130	0.05620	0.01440	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	80.10000	0.90700	0.89800	3.88000	1.90000	0.51900	0.00008	0.00300	0.00901	0.00401	0.00801	0.20000	0.10100	0.00000	0.00000	0.32203
	Micronutrients	0.02330	0.00030	0.00030	0.00162	0.00288	0.00076	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041
	Mn	0.07380	0.00092	0.00091	0.00519	0.00721	0.00187	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103
	NPK as N	13.00000	0.14900	0.14600	0.50700	0.32200	0.08540	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200
	NPK for P2O5	2.32000	0.02370	0.02330	0.07520	0.06020	0.01540	0.00000	0.00008	0.00010	0.00009	0.00010	0.00400	0.00300	0.00000	0.00000	0.00729
	P2O5 - 1	1.48000	0.01810	0.01800	0.06510	0.05120	0.01320	0.00000	0.00005	0.00009	0.00008	0.00009	0.00301	0.00301	0.00000	0.00000	0.00628
	Potash	0.03320	0.00038	0.00038	0.00153	0.00263	0.00067	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021
	S as Nutrient	1.91000	0.02210	0.02190	0.11600	0.11100	0.02910	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00601	0.00000	0.00000	0.01264
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	5.19000	0.05910	0.05830	0.17300	0.06310	0.01770	0.00000	0.00020	0.00030	0.00030	0.00030	0.00501	0.00401	0.00000	0.00000	0.00992
	Boise, ID	Boron	0.00306	0.00004	0.00004	0.00025	0.00053	0.00014	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000
Gypsum Products		0.55600	0.00708	0.00685	0.03340	0.05880	0.01510	0.00000	0.00002	0.00010	0.00007	0.00010	0.00400	0.00300	0.00000	0.00000	0.00727
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		82.90000	0.99000	0.95600	4.23000	2.13000	0.57800	0.00007	0.00300	0.01000	0.00500	0.00900	0.20000	0.20000	0.00000	0.00000	0.42400
Micronutrients		0.02470	0.00032	0.00031	0.00169	0.00311	0.00080	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041
Mn		0.07700	0.00101	0.00098	0.00543	0.00768	0.00198	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103
NPK as N		13.70000	0.15800	0.15500	0.51600	0.34300	0.09490	0.00001	0.00050	0.00080	0.00060	0.00070	0.02000	0.02010	0.00000	0.00000	0.04220
NPK for P2O5		2.55000	0.02540	0.02440	0.07990	0.06130	0.01570	0.00000	0.00009	0.00010	0.00009	0.00010	0.00401	0.00400	0.00000	0.00000	0.00830
P2O5 - 1		1.57000	0.02020	0.01960	0.07030	0.05690	0.01500	0.00000	0.00005	0.00010	0.00008	0.00010	0.00400	0.00400	0.00000	0.00000	0.00828
Potash		0.03580	0.00045	0.00044	0.00165	0.00277	0.00073	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021
S as Nutrient		2.02000	0.02520	0.02400	0.11900	0.11200	0.02850	0.00000	0.00008	0.00020	0.00020	0.00020	0.00604	0.00700	0.00000	0.00000	0.01364
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc		5.36000	0.06660	0.06410	0.18400	0.06780	0.01820	0.00000	0.00020	0.00040	0.00030	0.00030	0.00501	0.00500	0.00000	0.00000	0.01101
Boulder, CO		Boron	0.00300	0.00004	0.00004	0.00024	0.00052	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000
	Gypsum Products	0.55400	0.00710	0.00681	0.03240	0.05860	0.01510	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	81.90000	0.98600	0.95000	4.29000	2.06000	0.55600	0.00008	0.00300	0.01000	0.00500	0.00900	0.20000	0.20000	0.00000	0.00000	0.42400
	Micronutrients	0.02420	0.00031	0.00030	0.00174	0.00299	0.00077	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041
	Mn	0.07680	0.00097	0.00094	0.00511	0.00792	0.00204	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103
	NPK as N	13.10000	0.15300	0.14600	0.52200	0.32000	0.09270	0.00001	0.00050	0.00090	0.00060	0.00070	0.02000	0.02000	0.00000	0.00000	0.04220
	NPK for P2O5	2.55000	0.02460	0.02360	0.08110	0.06320	0.01620	0.00000	0.00009	0.00010	0.00009	0.00010	0.00401	0.00400	0.00000	0.00000	0.00830
	P2O5 - 1	1.53000	0.02030	0.01950	0.06740	0.05440	0.01470	0.00000	0.00005	0.00010	0.00008	0.00009	0.00301	0.00400	0.00000	0.00000	0.00728
	Potash	0.03440	0.00042	0.00040	0.00161	0.00266	0.00070	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021
	S as Nutrient	1.97000	0.02490	0.02390	0.12000	0.10600	0.02790	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00700	0.00000	0.00000	0.01363
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	5.33000	0.06620	0.06330	0.17700	0.06640	0.01790	0.00000	0.00020	0.00040	0.00030	0.00030	0.00501	0.00500	0.00000	0.00000	0.01101

99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>	
Casper, WY	Boron	0.00293	0.00004	0.00004	0.00023	0.00052	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000	0.00006	
	Gypsum Products	0.53600	0.00651	0.00641	0.03150	0.05660	0.01450	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726	
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Liming Materials	82.50000	0.95800	0.94300	4.06000	2.04000	0.55100	0.00008	0.00300	0.00901	0.00500	0.00900	0.20000	0.10100	0.00000	0.00000	0.32401	
	Micronutrients	0.02360	0.00030	0.00030	0.00164	0.00295	0.00076	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
	Mn	0.07490	0.00092	0.00091	0.00506	0.00750	0.00193	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103	
	NPK as N	13.10000	0.14400	0.14100	0.50700	0.31600	0.08750	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	2.33000	0.02280	0.02250	0.07680	0.06070	0.01550	0.00000	0.00008	0.00010	0.00009	0.00010	0.00401	0.00300	0.00000	0.00000	0.00730	
	P2O5 - 1	1.50000	0.01860	0.01840	0.06440	0.05350	0.01370	0.00000	0.00005	0.00009	0.00008	0.00009	0.00400	0.00301	0.00000	0.00000	0.00727	
	Potash	0.03310	0.00040	0.00040	0.00158	0.00264	0.00067	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.97000	0.02330	0.02320	0.11700	0.11200	0.02920	0.00000	0.00008	0.00020	0.00020	0.00020	0.00604	0.00601	0.00000	0.00000	0.01265	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	5.06000	0.06210	0.06110	0.17500	0.06370	0.01750	0.00001	0.00020	0.00040	0.00030	0.00030	0.00501	0.00500	0.00000	0.00000	0.01101	
	Charleston, SC	Boron	0.00279	0.00004	0.00004	0.00022	0.00047	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
		Gypsum Products	0.50600	0.00652	0.00627	0.03030	0.05290	0.01360	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Liming Materials	71.00000	0.87500	0.84900	3.70000	1.92000	0.52800	0.00026	0.00300	0.00901	0.00500	0.00701	0.20000	0.10000	0.00000	0.00000	0.32102
Micronutrients		0.02220	0.00030	0.00029	0.00144	0.00226	0.00058	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
Mn		0.07040	0.00091	0.00086	0.00481	0.00677	0.00176	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
NPK as N		12.60000	0.15300	0.14700	0.47400	0.31400	0.08350	0.00004	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
NPK for P2O5		2.03000	0.02290	0.02180	0.06620	0.05230	0.01360	0.00001	0.00007	0.00010	0.00009	0.00010	0.00301	0.00300	0.00000	0.00000	0.00630	
P2O5 - 1		1.42000	0.01710	0.01650	0.06020	0.05000	0.01290	0.00000	0.00005	0.00008	0.00008	0.00009	0.00300	0.00300	0.00000	0.00000	0.00625	
Potash		0.03190	0.00040	0.00039	0.00144	0.00241	0.00063	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
S as Nutrient		1.86000	0.02360	0.02290	0.11300	0.10500	0.02740	0.00001	0.00007	0.00020	0.00010	0.00020	0.00503	0.00600	0.00000	0.00000	0.01153	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		4.70000	0.05840	0.05490	0.16600	0.05940	0.01620	0.00001	0.00020	0.00030	0.00020	0.00030	0.00401	0.00400	0.00000	0.00000	0.00881	
Chicago, IL		Boron	0.00293	0.00004	0.00004	0.00023	0.00049	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
		Gypsum Products	0.53400	0.00752	0.00693	0.03070	0.05620	0.01440	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Liming Materials	77.00000	1.05000	0.97300	3.91000	2.03000	0.54800	0.00021	0.00300	0.01000	0.00500	0.00800	0.20000	0.10100	0.00000	0.00000	0.32400
	Micronutrients	0.02310	0.00034	0.00031	0.00160	0.00253	0.00067	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
	Mn	0.07300	0.00101	0.00093	0.00503	0.00736	0.00190	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00040	0.00000	0.00000	0.00093	
	NPK as N	13.20000	0.17900	0.16200	0.49800	0.31900	0.08400	0.00003	0.00050	0.00090	0.00060	0.00070	0.02000	0.02000	0.00000	0.00000	0.04220	
	NPK for P2O5	2.21000	0.02630	0.02420	0.07300	0.05760	0.01520	0.00001	0.00007	0.00010	0.00010	0.00010	0.00400	0.00300	0.00000	0.00000	0.00730	
	P2O5 - 1	1.48000	0.02000	0.01850	0.06550	0.05150	0.01350	0.00000	0.00005	0.00010	0.00008	0.00009	0.00400	0.00300	0.00000	0.00000	0.00727	
	Potash	0.03420	0.00043	0.00040	0.00151	0.00258	0.00068	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.94000	0.02670	0.02470	0.11800	0.10800	0.02980	0.00001	0.00007	0.00020	0.00020	0.00020	0.00603	0.00601	0.00000	0.00000	0.01264	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.94000	0.06070	0.05740	0.17400	0.06300	0.01730	0.00001	0.00020	0.00040	0.00030	0.00030	0.00500	0.00500	0.00000	0.00000	0.01100	

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Cleveland, OH	Boron	0.00293	0.00004	0.00004	0.00023	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
	Gypsum Products	0.53400	0.00737	0.00676	0.03170	0.05250	0.01340	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	76.10000	1.01000	0.94600	3.90000	1.94000	0.53900	0.00018	0.00300	0.00901	0.00500	0.00801	0.20000	0.10100	0.00000	0.00000	0.32302
	Micronutrients	0.02340	0.00034	0.00032	0.00159	0.00247	0.00065	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041
	Mn	0.07320	0.00100	0.00091	0.00513	0.00731	0.00188	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00040	0.00000	0.00000	0.00093
	NPK as N	12.80000	0.16800	0.15300	0.47100	0.34400	0.09040	0.00003	0.00050	0.00090	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04210
	NPK for P2O5	2.06000	0.02660	0.02450	0.07270	0.05620	0.01490	0.00001	0.00007	0.00010	0.00010	0.00010	0.00400	0.00301	0.00000	0.00000	0.00731
	P2O5 - 1	1.49000	0.01890	0.01820	0.06290	0.05030	0.01360	0.00000	0.00005	0.00010	0.00009	0.00009	0.00301	0.00301	0.00000	0.00000	0.00630
	Potash	0.03340	0.00043	0.00040	0.00152	0.00266	0.00069	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021
	S as Nutrient	1.92000	0.02680	0.02510	0.11800	0.11300	0.02970	0.00001	0.00007	0.00020	0.00020	0.00020	0.00602	0.00601	0.00000	0.00000	0.01263
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	4.90000	0.06320	0.05780	0.17400	0.06460	0.01820	0.00001	0.00020	0.00040	0.00030	0.00030	0.00500	0.00500	0.00000	0.00000	0.01100
	Fresno, CA	Boron	0.00295	0.00004	0.00004	0.00024	0.00052	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000
Gypsum Products		0.54600	0.00681	0.00657	0.03250	0.05710	0.01460	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		82.90000	0.97700	0.94800	4.37000	1.98000	0.54200	0.00006	0.00300	0.01000	0.00500	0.00900	0.20000	0.20000	0.00000	0.00000	0.42400
Micronutrients		0.02430	0.00033	0.00031	0.00169	0.00311	0.00080	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041
Mn		0.07670	0.00097	0.00094	0.00525	0.00767	0.00198	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103
NPK as N		13.20000	0.15600	0.15000	0.52900	0.33100	0.08830	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200
NPK for P2O5		2.56000	0.02450	0.02350	0.07890	0.06120	0.01570	0.00000	0.00009	0.00010	0.00010	0.00010	0.00401	0.00400	0.00000	0.00000	0.00831
P2O5 - 1		1.53000	0.01870	0.01810	0.06930	0.05190	0.01410	0.00000	0.00005	0.00010	0.00008	0.00010	0.00301	0.00400	0.00000	0.00000	0.00729
Potash		0.03550	0.00041	0.00040	0.00161	0.00267	0.00070	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021
S as Nutrient		1.96000	0.02400	0.02300	0.11800	0.10600	0.02810	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00601	0.00000	0.00000	0.01264
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc		5.17000	0.06030	0.05850	0.17400	0.06430	0.01780	0.00000	0.00020	0.00030	0.00030	0.00030	0.00501	0.00500	0.00000	0.00000	0.01091
Grand Island, NE		Boron	0.00298	0.00004	0.00004	0.00024	0.00052	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000
	Gypsum Products	0.55100	0.00676	0.00666	0.03300	0.05660	0.01460	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	80.70000	0.92300	0.90800	3.99000	1.97000	0.53100	0.00022	0.00300	0.01000	0.00401	0.00900	0.20000	0.10100	0.00000	0.00000	0.32401
	Micronutrients	0.02430	0.00031	0.00031	0.00162	0.00298	0.00079	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041
	Mn	0.07530	0.00095	0.00094	0.00524	0.00766	0.00197	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103
	NPK as N	13.50000	0.14800	0.14500	0.52100	0.33000	0.08550	0.00004	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200
	NPK for P2O5	2.26000	0.02340	0.02300	0.07310	0.06240	0.01590	0.00001	0.00008	0.00010	0.00009	0.00010	0.00400	0.00301	0.00000	0.00000	0.00730
	P2O5 - 1	1.52000	0.01840	0.01800	0.06730	0.05300	0.01370	0.00000	0.00005	0.00009	0.00008	0.00009	0.00301	0.00400	0.00000	0.00000	0.00727
	Potash	0.03500	0.00043	0.00042	0.00163	0.00263	0.00067	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021
	S as Nutrient	1.95000	0.02450	0.02420	0.12200	0.11400	0.02910	0.00001	0.00008	0.00020	0.00020	0.00020	0.00603	0.00700	0.00000	0.00000	0.01363
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	5.20000	0.06170	0.06070	0.17800	0.06410	0.01770	0.00001	0.00020	0.00030	0.00030	0.00030	0.00500	0.00400	0.00000	0.00000	0.00990

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Harrisburg, PA	Boron	0.00292	0.00004	0.00004	0.00022	0.00049	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
	Gypsum Products	0.53000	0.00664	0.00641	0.03150	0.05550	0.01430	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	73.70000	0.91800	0.89200	3.75000	1.99000	0.56400	0.00020	0.00300	0.01000	0.00500	0.00801	0.10100	0.10100	0.00000	0.00000	0.22501
	Micronutrients	0.02320	0.00032	0.00031	0.00156	0.00234	0.00062	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00010	0.00000	0.00000	0.00031
	Mn	0.07380	0.00091	0.00088	0.00506	0.00718	0.00185	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083
	NPK as N	13.10000	0.15700	0.14800	0.49400	0.31800	0.08680	0.00003	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200
	NPK for P2O5	2.15000	0.02420	0.02340	0.07010	0.05640	0.01470	0.00001	0.00007	0.00010	0.00009	0.00010	0.00400	0.00300	0.00000	0.00000	0.00729
	P2O5 - 1	1.45000	0.01820	0.01770	0.06380	0.05240	0.01350	0.00000	0.00005	0.00008	0.00008	0.00009	0.00300	0.00301	0.00000	0.00000	0.00626
	Potash	0.03290	0.00042	0.00041	0.00152	0.00253	0.00066	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021
	S as Nutrient	1.93000	0.02400	0.02320	0.11400	0.10300	0.02850	0.00000	0.00007	0.00020	0.00020	0.00020	0.00504	0.00601	0.00000	0.00000	0.01165
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	4.97000	0.05820	0.05660	0.17300	0.06140	0.01740	0.00001	0.00020	0.00030	0.00020	0.00030	0.00500	0.00400	0.00000	0.00000	0.00980
	Hartford, CT	Boron	0.00286	0.00004	0.00004	0.00022	0.00048	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000
		Gypsum Products	0.51300	0.00637	0.00623	0.03040	0.05320	0.01370	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		71.80000	0.87900	0.85700	3.60000	1.84000	0.52000	0.00019	0.00300	0.01000	0.00401	0.00800	0.20000	0.10100	0.00000	0.00000	
Micronutrients		0.02300	0.00030	0.00029	0.00147	0.00219	0.00057	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	
Mn		0.07150	0.00088	0.00084	0.00468	0.00701	0.00182	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	
NPK as N		12.90000	0.14700	0.14000	0.48000	0.30500	0.08250	0.00003	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	
NPK for P2O5		2.00000	0.02290	0.02220	0.06690	0.05600	0.01460	0.00001	0.00007	0.00010	0.00009	0.00010	0.00301	0.00300	0.00000	0.00000	
P2O5 - 1		1.41000	0.01790	0.01740	0.06260	0.05130	0.01330	0.00000	0.00005	0.00008	0.00007	0.00009	0.00300	0.00300	0.00000	0.00000	
Potash		0.03210	0.00041	0.00040	0.00152	0.00243	0.00064	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	
S as Nutrient		1.88000	0.02280	0.02230	0.11100	0.10600	0.02920	0.00000	0.00007	0.00020	0.00020	0.00020	0.00504	0.00600	0.00000	0.00000	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		4.91000	0.05640	0.05450	0.16900	0.05770	0.01610	0.00001	0.00020	0.00030	0.00020	0.00030	0.00500	0.00400	0.00000	0.00000	
Houston, TX		Boron	0.00284	0.00004	0.00004	0.00021	0.00050	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00002	0.00002	0.00000	0.00000
		Gypsum Products	0.51500	0.00650	0.00639	0.03080	0.05200	0.01340	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	72.50000	0.85000	0.84000	3.70000	1.98000	0.56400	0.00049	0.00300	0.01000	0.00401	0.00800	0.10100	0.10000	0.00000	0.00000	
	Micronutrients	0.02260	0.00031	0.00030	0.00147	0.00236	0.00062	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00020	0.00000	0.00000	
	Mn	0.07050	0.00089	0.00086	0.00476	0.00674	0.00173	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	
	NPK as N	13.00000	0.14600	0.14000	0.48300	0.31600	0.08400	0.00007	0.00050	0.00070	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	
	NPK for P2O5	2.16000	0.02310	0.02220	0.06760	0.05440	0.01410	0.00001	0.00007	0.00010	0.00009	0.00010	0.00301	0.00300	0.00000	0.00000	
	P2O5 - 1	1.41000	0.01680	0.01650	0.06280	0.04690	0.01270	0.00001	0.00005	0.00008	0.00008	0.00008	0.00300	0.00301	0.00000	0.00000	
	Potash	0.03270	0.00038	0.00037	0.00141	0.00238	0.00061	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	
	S as Nutrient	1.84000	0.02240	0.02170	0.11200	0.10300	0.02630	0.00001	0.00007	0.00020	0.00010	0.00020	0.00504	0.00600	0.00000	0.00000	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.80000	0.05370	0.05250	0.16600	0.05750	0.01660	0.00003	0.00020	0.00030	0.00020	0.00030	0.00401	0.00400	0.00000	0.00000	

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>	
Huntington, WV	Boron	0.00294	0.00004	0.00004	0.00023	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005	
	Gypsum Products	0.53000	0.00682	0.00651	0.03150	0.05530	0.01430	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726	
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Liming Materials	75.90000	0.94200	0.90500	3.86000	1.99000	0.56400	0.00022	0.00300	0.01000	0.00500	0.00801	0.20000	0.10100	0.00000	0.00000	0.32401	
	Micronutrients	0.02320	0.00031	0.00030	0.00155	0.00236	0.00061	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00010	0.00000	0.00000	0.00031	
	Mn	0.07450	0.00092	0.00089	0.00503	0.00714	0.00184	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
	NPK as N	13.10000	0.15900	0.15100	0.49300	0.33200	0.08760	0.00003	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	2.14000	0.02420	0.02330	0.07140	0.05450	0.01420	0.00001	0.00007	0.00010	0.00009	0.00010	0.00400	0.00300	0.00000	0.00000	0.00729	
	P2O5 - 1	1.45000	0.01800	0.01720	0.06340	0.05220	0.01340	0.00000	0.00005	0.00009	0.00008	0.00009	0.00400	0.00301	0.00000	0.00000	0.00727	
	Potash	0.03260	0.00042	0.00041	0.00155	0.00249	0.00064	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.93000	0.02470	0.02360	0.11700	0.10800	0.02750	0.00000	0.00007	0.00020	0.00020	0.00020	0.00504	0.00600	0.00000	0.00000	0.01164	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	5.04000	0.06100	0.05780	0.17300	0.06150	0.01750	0.00001	0.00020	0.00040	0.00020	0.00030	0.00500	0.00401	0.00000	0.00000	0.00991	
	Las Vegas, NV	Boron	0.00300	0.00004	0.00004	0.00024	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000	0.00006
		Gypsum Products	0.53700	0.00659	0.00653	0.03210	0.05470	0.01410	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		80.40000	0.94800	0.93500	4.22000	1.96000	0.55300	0.00004	0.00300	0.01000	0.00500	0.00900	0.20000	0.10100	0.00000	0.00000	0.32500	
Micronutrients		0.02430	0.00030	0.00030	0.00167	0.00310	0.00080	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
Mn		0.07470	0.00094	0.00092	0.00525	0.00740	0.00191	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103	
NPK as N		13.10000	0.14600	0.14300	0.48800	0.31800	0.08800	0.00001	0.00050	0.00070	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04190	
NPK for P2O5		2.47000	0.02350	0.02310	0.07630	0.05830	0.01490	0.00000	0.00008	0.00010	0.00009	0.00010	0.00401	0.00300	0.00000	0.00000	0.00730	
P2O5 - 1		1.48000	0.01920	0.01890	0.06790	0.05430	0.01470	0.00000	0.00005	0.00009	0.00008	0.00010	0.00301	0.00400	0.00000	0.00000	0.00728	
Potash		0.03380	0.00041	0.00040	0.00160	0.00257	0.00067	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
S as Nutrient		1.94000	0.02300	0.02270	0.11500	0.10900	0.02840	0.00000	0.00008	0.00020	0.00020	0.00020	0.00602	0.00601	0.00000	0.00000	0.01263	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		5.18000	0.05840	0.05710	0.17800	0.06230	0.01790	0.00000	0.00020	0.00030	0.00020	0.00030	0.00501	0.00500	0.00000	0.00000	0.01081	
Los Angeles, CA		Boron	0.00293	0.00004	0.00004	0.00023	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000	0.00006
		Gypsum Products	0.52300	0.00686	0.00662	0.03110	0.05610	0.01450	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	82.90000	0.93700	0.90700	4.08000	1.98000	0.53600	0.00005	0.00300	0.01000	0.00500	0.00801	0.20000	0.10100	0.00000	0.00000	0.32401	
	Micronutrients	0.02380	0.00032	0.00031	0.00165	0.00273	0.00070	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
	Mn	0.07500	0.00097	0.00093	0.00529	0.00754	0.00194	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103	
	NPK as N	13.10000	0.16000	0.15000	0.51000	0.32000	0.08810	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	2.31000	0.02560	0.02410	0.07710	0.06070	0.01550	0.00000	0.00008	0.00010	0.00009	0.00010	0.00400	0.00300	0.00000	0.00000	0.00729	
	P2O5 - 1	1.47000	0.01950	0.01880	0.06870	0.05230	0.01470	0.00000	0.00005	0.00010	0.00008	0.00009	0.00301	0.00301	0.00000	0.00000	0.00629	
	Potash	0.03330	0.00042	0.00041	0.00154	0.00256	0.00067	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.93000	0.02430	0.02370	0.11900	0.10900	0.02830	0.00000	0.00008	0.00020	0.00010	0.00020	0.00603	0.00601	0.00000	0.00000	0.01254	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	5.08000	0.06060	0.05790	0.17300	0.06430	0.01750	0.00000	0.00020	0.00030	0.00030	0.00030	0.00501	0.00500	0.00000	0.00000	0.01091	

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>	
Memphis, TN	Boron	0.00285	0.00004	0.00004	0.00021	0.00047	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005	
	Gypsum Products	0.49600	0.00688	0.00644	0.03050	0.05420	0.01390	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726	
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Liming Materials	68.70000	0.89300	0.83800	3.77000	1.91000	0.54200	0.00034	0.00300	0.00901	0.00401	0.00701	0.20000	0.10000	0.00000	0.00000	0.32003	
	Micronutrients	0.02240	0.00032	0.00030	0.00140	0.00207	0.00053	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	Mn	0.06920	0.00094	0.00088	0.00479	0.00686	0.00177	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
	NPK as N	12.90000	0.16000	0.15200	0.48500	0.29700	0.08520	0.00006	0.00050	0.00080	0.00060	0.00070	0.02000	0.02000	0.00000	0.00000	0.04210	
	NPK for P2O5	1.93000	0.02460	0.02240	0.05980	0.05560	0.01450	0.00001	0.00007	0.00010	0.00009	0.00010	0.00301	0.00300	0.00000	0.00000	0.00630	
	P2O5 - 1	1.35000	0.01860	0.01740	0.06000	0.05080	0.01300	0.00001	0.00005	0.00008	0.00008	0.00009	0.00300	0.00300	0.00000	0.00000	0.00625	
	Potash	0.03200	0.00040	0.00038	0.00143	0.00247	0.00063	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.89000	0.02430	0.02280	0.10800	0.10800	0.02910	0.00001	0.00007	0.00020	0.00020	0.00020	0.00503	0.00600	0.00000	0.00000	0.01163	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.70000	0.05710	0.05370	0.16500	0.05830	0.01620	0.00002	0.00020	0.00030	0.00020	0.00030	0.00401	0.00400	0.00000	0.00000	0.00881	
	Miami, FL	Boron	0.00279	0.00004	0.00004	0.00022	0.00047	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
		Gypsum Products	0.50700	0.00597	0.00592	0.02900	0.05300	0.01360	0.00000	0.00002	0.00008	0.00005	0.00010	0.00400	0.00300	0.00000	0.00000	0.00723
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		67.50000	0.83000	0.81900	3.53000	1.89000	0.53900	0.00018	0.00300	0.00801	0.00400	0.00700	0.20000	0.10000	0.00000	0.00000	0.31901	
Micronutrients		0.02190	0.00028	0.00028	0.00136	0.00226	0.00058	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00010	0.00000	0.00000	0.00031	
Mn		0.06910	0.00084	0.00083	0.00422	0.00681	0.00175	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00030	0.00000	0.00000	0.00073	
NPK as N		12.60000	0.13800	0.13600	0.43000	0.29900	0.08220	0.00003	0.00050	0.00070	0.00040	0.00070	0.02000	0.02000	0.00000	0.00000	0.04180	
NPK for P2O5		1.78000	0.02140	0.02100	0.06710	0.05390	0.01400	0.00001	0.00007	0.00010	0.00007	0.00010	0.00300	0.00300	0.00000	0.00000	0.00627	
P2O5 - 1		1.30000	0.01520	0.01500	0.05270	0.05000	0.01290	0.00000	0.00004	0.00007	0.00006	0.00006	0.00300	0.00300	0.00000	0.00000	0.00619	
Potash		0.03120	0.00035	0.00035	0.00149	0.00249	0.00065	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
S as Nutrient		1.82000	0.02110	0.02080	0.10400	0.10500	0.02750	0.00001	0.00007	0.00020	0.00010	0.00020	0.00503	0.00402	0.00000	0.00000	0.00955	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		4.81000	0.05000	0.04910	0.16600	0.05610	0.01620	0.00001	0.00020	0.00030	0.00020	0.00030	0.00400	0.00400	0.00000	0.00000	0.00880	
Minneapolis, MN		Boron	0.00295	0.00004	0.00004	0.00023	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
		Gypsum Products	0.52600	0.00718	0.00675	0.03210	0.05400	0.01390	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	78.90000	0.98200	0.93100	3.85000	1.98000	0.55500	0.00014	0.00300	0.01000	0.00501	0.00800	0.20000	0.10100	0.00000	0.00000	0.32401	
	Micronutrients	0.02360	0.00032	0.00031	0.00165	0.00270	0.00071	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
	Mn	0.07400	0.00098	0.00092	0.00518	0.00761	0.00196	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00040	0.00000	0.00000	0.00093	
	NPK as N	13.40000	0.16700	0.15900	0.50500	0.33000	0.09290	0.00003	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	2.16000	0.02500	0.02380	0.07210	0.06000	0.01540	0.00000	0.00008	0.00010	0.00010	0.00010	0.00400	0.00300	0.00000	0.00000	0.00730	
	P2O5 - 1	1.47000	0.01920	0.01840	0.06630	0.05260	0.01450	0.00000	0.00005	0.00009	0.00008	0.00009	0.00301	0.00400	0.00000	0.00000	0.00727	
	Potash	0.03350	0.00043	0.00040	0.00152	0.00263	0.00067	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.93000	0.02540	0.02440	0.11700	0.11100	0.02910	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00700	0.00000	0.00000	0.01363	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	5.11000	0.06400	0.06010	0.17800	0.06450	0.01800	0.00001	0.00020	0.00040	0.00030	0.00030	0.00501	0.00500	0.00000	0.00000	0.01101	



99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>	
Philadelphia, PA	Boron	0.00286	0.00004	0.00004	0.00022	0.00048	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005	
	Gypsum Products	0.51900	0.00657	0.00634	0.03010	0.05530	0.01420	0.00000	0.00002	0.00010	0.00005	0.00010	0.00400	0.00300	0.00000	0.00000	0.00725	
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Liming Materials	71.40000	0.86700	0.85000	3.86000	1.84000	0.52400	0.00023	0.00300	0.00901	0.00500	0.00800	0.20000	0.10100	0.00000	0.00000	0.32301	
	Micronutrients	0.02250	0.00030	0.00029	0.00148	0.00236	0.00061	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00010	0.00000	0.00000	0.00031	
	Mn	0.07150	0.00090	0.00086	0.00481	0.00713	0.00184	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
	NPK as N	13.10000	0.15600	0.15100	0.49300	0.33000	0.08690	0.00003	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	2.01000	0.02370	0.02250	0.06720	0.05250	0.01360	0.00001	0.00007	0.00010	0.00009	0.00010	0.00400	0.00300	0.00000	0.00000	0.00729	
	P2O5 - 1	1.44000	0.01690	0.01640	0.06330	0.05050	0.01300	0.00000	0.00005	0.00008	0.00008	0.00009	0.00300	0.00301	0.00000	0.00000	0.00626	
	Potash	0.03220	0.00041	0.00040	0.00147	0.00244	0.00063	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.88000	0.02430	0.02340	0.11500	0.10600	0.02750	0.00001	0.00007	0.00020	0.00010	0.00020	0.00504	0.00600	0.00000	0.00000	0.01154	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.78000	0.05670	0.05490	0.16700	0.06150	0.01680	0.00002	0.00020	0.00040	0.00020	0.00030	0.00500	0.00401	0.00000	0.00000	0.00991	
	Phoenix, AZ	Boron	0.00301	0.00004	0.00004	0.00024	0.00052	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000	0.00006
		Gypsum Products	0.53700	0.00681	0.00668	0.03210	0.05740	0.01480	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		83.20000	0.92500	0.94500	4.37000	1.95000	0.53900	0.00005	0.00300	0.00901	0.00500	0.00900	0.20000	0.20000	0.00000	0.00000	0.42301	
Micronutrients		0.02450	0.00030	0.00030	0.00174	0.00306	0.00079	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
Mn		0.07590	0.00096	0.00095	0.00533	0.00717	0.00186	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103	
NPK as N		13.20000	0.15200	0.14800	0.51600	0.32900	0.09120	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02010	0.00000	0.00000	0.04210	
NPK for P2O5		2.35000	0.02410	0.02360	0.08180	0.05310	0.01380	0.00000	0.00008	0.00010	0.00009	0.00010	0.00401	0.00301	0.00000	0.00000	0.00731	
P2O5 - 1		1.53000	0.01890	0.01860	0.06790	0.05460	0.01500	0.00000	0.00005	0.00009	0.00008	0.00010	0.00400	0.00400	0.00000	0.00000	0.00827	
Potash		0.03550	0.00042	0.00042	0.00156	0.00267	0.00070	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
S as Nutrient		1.97000	0.02350	0.02310	0.11900	0.11300	0.02940	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00700	0.00000	0.00000	0.01363	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		5.36000	0.05910	0.05800	0.17800	0.06410	0.01740	0.00000	0.00020	0.00030	0.00020	0.00030	0.00501	0.00500	0.00000	0.00000	0.01081	
Portland, ME		Boron	0.00276	0.00004	0.00004	0.00022	0.00044	0.00011	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
		Gypsum Products	0.50500	0.00637	0.00608	0.02920	0.05070	0.01300	0.00000	0.00002	0.00010	0.00006	0.00010	0.00300	0.00300	0.00000	0.00000	0.00626
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	68.80000	0.92500	0.85800	3.54000	1.80000	0.48400	0.00016	0.00201	0.00901	0.00500	0.00701	0.20000	0.10000	0.00000	0.00000	0.32102	
	Micronutrients	0.02150	0.00030	0.00029	0.00140	0.00231	0.00060	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	Mn	0.07150	0.00093	0.00086	0.00478	0.00644	0.00166	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
	NPK as N	12.10000	0.14300	0.13700	0.45400	0.32000	0.08370	0.00002	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	1.91000	0.02320	0.02180	0.06350	0.05160	0.01340	0.00000	0.00007	0.00010	0.00009	0.00010	0.00301	0.00300	0.00000	0.00000	0.00630	
	P2O5 - 1	1.35000	0.01690	0.01610	0.05670	0.05070	0.01300	0.00000	0.00005	0.00008	0.00008	0.00009	0.00300	0.00300	0.00000	0.00000	0.00625	
	Potash	0.03250	0.00041	0.00038	0.00148	0.00246	0.00063	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.79000	0.02330	0.02230	0.10700	0.10100	0.02720	0.00000	0.00007	0.00020	0.00010	0.00020	0.00503	0.00600	0.00000	0.00000	0.01153	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.56000	0.05600	0.05290	0.17000	0.05670	0.01600	0.00001	0.00020	0.00040	0.00020	0.00030	0.00500	0.00400	0.00000	0.00000	0.00990	

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>	
Raleigh-Durham, NC	Boron	0.00279	0.00004	0.00004	0.00022	0.00049	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005	
	Gypsum Products	0.50200	0.00669	0.00646	0.03040	0.05210	0.01330	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726	
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Liming Materials	72.60000	0.93800	0.87500	3.73000	1.88000	0.52700	0.00025	0.00300	0.01000	0.00500	0.00800	0.20000	0.10000	0.00000	0.00000	0.32300	
	Micronutrients	0.02240	0.00033	0.00031	0.00148	0.00225	0.00059	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00010	0.00000	0.00000	0.00031	
	Mn	0.07110	0.00095	0.00088	0.00472	0.00694	0.00179	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
	NPK as N	12.70000	0.15200	0.14500	0.47700	0.31700	0.08350	0.00003	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	2.07000	0.02460	0.02360	0.06820	0.05570	0.01430	0.00001	0.00007	0.00010	0.00009	0.00010	0.00400	0.00300	0.00000	0.00000	0.00729	
	P2O5 - 1	1.44000	0.01780	0.01710	0.05960	0.05050	0.01300	0.00000	0.00005	0.00009	0.00008	0.00009	0.00300	0.00301	0.00000	0.00000	0.00627	
	Potash	0.03230	0.00044	0.00041	0.00147	0.00252	0.00066	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.83000	0.02390	0.02280	0.11100	0.10300	0.02840	0.00001	0.00007	0.00020	0.00020	0.00020	0.00602	0.00600	0.00000	0.00000	0.01262	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	4.83000	0.06130	0.05710	0.16700	0.06110	0.01720	0.00002	0.00020	0.00040	0.00020	0.00030	0.00500	0.00401	0.00000	0.00000	0.00991	
	Salem, OR	Boron	0.00288	0.00004	0.00004	0.00022	0.00048	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
		Gypsum Products	0.51300	0.00638	0.00622	0.03050	0.05170	0.01330	0.00000	0.00002	0.00010	0.00005	0.00010	0.00400	0.00300	0.00000	0.00000	0.00725
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liming Materials		73.80000	0.91000	0.88500	3.74000	1.92000	0.51700	0.00010	0.00300	0.00901	0.00500	0.00800	0.20000	0.10000	0.00000	0.00000	0.32201	
Micronutrients		0.02260	0.00031	0.00030	0.00154	0.00230	0.00061	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00010	0.00000	0.00000	0.00031	
Mn		0.07230	0.00089	0.00086	0.00483	0.00687	0.00178	0.00000	0.00000	0.00001	0.00001	0.00001	0.00040	0.00040	0.00000	0.00000	0.00083	
NPK as N		12.30000	0.14400	0.13900	0.46300	0.31800	0.08370	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
NPK for P2O5		2.09000	0.02310	0.02200	0.06970	0.05180	0.01340	0.00000	0.00007	0.00010	0.00009	0.00010	0.00301	0.00300	0.00000	0.00000	0.00630	
P2O5 - 1		1.44000	0.01710	0.01680	0.06190	0.05240	0.01350	0.00000	0.00005	0.00008	0.00008	0.00009	0.00300	0.00300	0.00000	0.00000	0.00625	
Potash		0.03240	0.00041	0.00039	0.00150	0.00224	0.00058	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
S as Nutrient		1.88000	0.02340	0.02280	0.11500	0.10000	0.02640	0.00000	0.00007	0.00020	0.00010	0.00020	0.00504	0.00601	0.00000	0.00000	0.01155	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		4.82000	0.05650	0.05480	0.16200	0.05910	0.01620	0.00001	0.00020	0.00030	0.00020	0.00030	0.00500	0.00401	0.00000	0.00000	0.00981	
Salt Lake City, UT		Boron	0.00304	0.00004	0.00004	0.00024	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00002	0.00000	0.00000	0.00005
		Gypsum Products	0.55900	0.00743	0.00707	0.03320	0.05720	0.01460	0.00000	0.00002	0.00010	0.00007	0.00010	0.00400	0.00300	0.00000	0.00000	0.00727
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liming Materials	85.80000	1.03000	1.01000	4.35000	2.14000	0.58800	0.00005	0.00300	0.01000	0.00500	0.00900	0.20000	0.20000	0.00000	0.00000	0.42400	
	Micronutrients	0.02490	0.00034	0.00032	0.00175	0.00301	0.00077	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
	Mn	0.07610	0.00100	0.00097	0.00525	0.00798	0.00206	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00050	0.00000	0.00000	0.00103	
	NPK as N	13.20000	0.16000	0.15400	0.54900	0.34400	0.09520	0.00001	0.00050	0.00090	0.00060	0.00080	0.02000	0.02000	0.00000	0.00000	0.04230	
	NPK for P2O5	2.56000	0.02590	0.02410	0.07910	0.06130	0.01570	0.00000	0.00009	0.00010	0.00010	0.00010	0.00401	0.00301	0.00000	0.00000	0.00732	
	P2O5 - 1	1.48000	0.02010	0.01920	0.06930	0.05280	0.01360	0.00000	0.00005	0.00010	0.00008	0.00010	0.00301	0.00400	0.00000	0.00000	0.00729	
	Potash	0.03560	0.00045	0.00043	0.00166	0.00277	0.00073	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	2.00000	0.02510	0.02400	0.12100	0.10700	0.02820	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00700	0.00000	0.00000	0.01363	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	5.39000	0.06590	0.06360	0.17800	0.06610	0.01830	0.00000	0.00020	0.00040	0.00030	0.00030	0.00501	0.00501	0.00000	0.00000	0.01102	

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Nickel (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>	
San Francisco, CA	Boron	0.00297	0.00004	0.00004	0.00024	0.00051	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000	0.00006	
	Gypsum Products	0.53300	0.00665	0.00655	0.03220	0.05620	0.01450	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726	
	Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Liming Materials	80.30000	0.95400	0.93600	4.18000	2.01000	0.55300	0.00006	0.00300	0.00901	0.00500	0.00900	0.20000	0.20000	0.00000	0.00000	0.42301	
	Micronutrients	0.02380	0.00031	0.00031	0.00160	0.00303	0.00079	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
	Mn	0.07520	0.00096	0.00094	0.00508	0.00731	0.00188	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00040	0.00000	0.00000	0.00093	
	NPK as N	12.40000	0.14500	0.14000	0.51400	0.32800	0.08640	0.00001	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
	NPK for P2O5	2.45000	0.02370	0.02300	0.07500	0.06080	0.01560	0.00000	0.00008	0.00010	0.00009	0.00010	0.00401	0.00300	0.00000	0.00000	0.00730	
	P2O5 - 1	1.47000	0.01800	0.01760	0.05770	0.05130	0.01440	0.00000	0.00005	0.00009	0.00007	0.00009	0.00300	0.00301	0.00000	0.00000	0.00626	
	Potash	0.03400	0.00040	0.00039	0.00155	0.00265	0.00068	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
	S as Nutrient	1.93000	0.02440	0.02370	0.12000	0.11200	0.02930	0.00000	0.00008	0.00020	0.00020	0.00020	0.00603	0.00601	0.00000	0.00000	0.01264	
	S as Ph	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Zinc	5.26000	0.06340	0.06130	0.17500	0.06450	0.01740	0.00000	0.00020	0.00030	0.00030	0.00030	0.00500	0.00500	0.00000	0.00000	0.01090	
	Winnemucca, NV	Boron	0.00298	0.00004	0.00004	0.00024	0.00052	0.00013	0.00000	0.00000	0.00000	0.00000	0.00000	0.00003	0.00003	0.00000	0.00000	0.00006
		Gypsum Products	0.53800	0.00651	0.00646	0.03200	0.05700	0.01470	0.00000	0.00002	0.00010	0.00006	0.00010	0.00400	0.00300	0.00000	0.00000	0.00726
		Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Liming Materials	83.60000	0.93200	0.92500	4.02000	2.01000	0.55100	0.00002	0.00300	0.00901	0.00500	0.00900	0.20000	0.20000	0.00000	0.00000	0.42301
Micronutrients		0.02400	0.00031	0.00030	0.00166	0.00299	0.00077	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00000	0.00000	0.00041	
Mn		0.07770	0.00094	0.00093	0.00511	0.00712	0.00185	0.00000	0.00000	0.00001	0.00001	0.00001	0.00050	0.00040	0.00000	0.00000	0.00093	
NPK as N		13.00000	0.14200	0.14100	0.47900	0.31500	0.08710	0.00000	0.00050	0.00080	0.00050	0.00070	0.02000	0.02000	0.00000	0.00000	0.04200	
NPK for P2O5		2.55000	0.02300	0.02270	0.07840	0.06320	0.01620	0.00000	0.00009	0.00010	0.00009	0.00010	0.00401	0.00400	0.00000	0.00000	0.00830	
P2O5 - 1		1.51000	0.01860	0.01850	0.06750	0.05590	0.01460	0.00000	0.00005	0.00009	0.00008	0.00009	0.00400	0.00400	0.00000	0.00000	0.00826	
Potash		0.03470	0.00040	0.00040	0.00159	0.00253	0.00065	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00021	
S as Nutrient		1.99000	0.02440	0.02420	0.12100	0.11100	0.02840	0.00000	0.00008	0.00020	0.00010	0.00020	0.00603	0.00601	0.00000	0.00000	0.01254	
S as Ph		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc		5.37000	0.05980	0.05960	0.18300	0.06580	0.01750	0.00000	0.00020	0.00030	0.00020	0.00030	0.00501	0.00500	0.00000	0.00000	0.01081	

<sup>1</sup> All Indirect Pathways Combined includes Fruit, Vegetable, Below-ground Vegetable, Beef, and Milk Ingestion. Numbers less than 0.00001 appear as a default of 0.00000.