

US EPA ARCHIVE DOCUMENT

**95th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (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	0.01700	0.00004	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Gypsum Products	5.97000	0.01170	0.00550	0	0.01090	0.00886	0	0.00060	0.00030	0.00009	0	0.00300	0.00800	0	NA	0.01139
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	84.30000	0.14200	0.06700	0	0.14700	0.11900	0	0.00900	0.00200	0.00050	0	0.02000	0.05000	0	NA	0.07250
	Micronutrients	0.02950	0.00005	0.00003	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00171	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.50000	0.02040	0.00964	0	0.01870	0.01540	0	0.00100	0.00040	0.00010	0	0.00400	0.01000	0	NA	0.01450
	NPK for P2O5	4.29000	0.00823	0.00388	0	0.00757	0.00611	0	0.00040	0.00020	0.00005	0	0.00200	0.00400	0	NA	0.00625
	P2O5 - 1	5.86000	0.01170	0.00551	0	0.01070	0.00862	0	0.00060	0.00020	0.00006	0	0.00200	0.00600	0	NA	0.00826
	Potash	0.04620	0.00008	0.00004	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	2.93000	0.00539	0.00254	0	0.00522	0.00423	0	0.00030	0.00009	0.00003	0	0.00100	0.00300	0	NA	0.00412
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06710	0.00013	0.00006	0	0.00012	0.00010	0	0.00001	0.00000	0.00000	0	0.00003	0.00008	0	NA	0.00011
	Albuquerque, NM	Boron	0.01840	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		6.51000	0.00446	0.00210	0	0.01000	0.00750	0	0.00070	0.00010	0.00004	0	0.00300	0.00700	0	NA	0.01014
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		93.60000	0.06090	0.02870	0	0.14100	0.10500	0	0.00900	0.00070	0.00020	0	0.02000	0.04000	0	NA	0.06090
Micronutrients		0.03220	0.00002	0.00001	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00185	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		11.40000	0.00780	0.00368	0	0.01750	0.01310	0	0.00100	0.00010	0.00005	0	0.00400	0.01000	0	NA	0.01415
NPK for P2O5		4.66000	0.00294	0.00139	0	0.00705	0.00538	0	0.00050	0.00006	0.00002	0	0.00200	0.00400	0	NA	0.00608
P2O5 - 1		6.42000	0.00419	0.00198	0	0.00967	0.00731	0	0.00070	0.00008	0.00002	0	0.00200	0.00500	0	NA	0.00710
Potash		0.05200	0.00002	0.00001	0	0.00008	0.00006	0	0.00001	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		3.17000	0.00213	0.00100	0	0.00492	0.00372	0	0.00030	0.00003	0.00001	0	0.00090	0.00200	0	NA	0.00294
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.07380	0.00005	0.00002	0	0.00012	0.00009	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010
Atlanta, GA		Boron	0.01600	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
	Gypsum Products	5.63000	0.01010	0.00478	0	0.00990	0.00796	0	0.00060	0.00030	0.00009	0	0.00300	0.00700	0	NA	0.01039
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	81.10000	0.11400	0.05370	0	0.13500	0.10900	0	0.00800	0.00100	0.00040	0	0.02000	0.04000	0	NA	0.06140
	Micronutrients	0.02810	0.00005	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00163	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	9.98000	0.01720	0.00813	0	0.01710	0.01380	0	0.00100	0.00030	0.00010	0	0.00400	0.01000	0	NA	0.01440
	NPK for P2O5	4.07000	0.00686	0.00324	0	0.00695	0.00553	0	0.00040	0.00010	0.00004	0	0.00200	0.00400	0	NA	0.00614
	P2O5 - 1	5.64000	0.00947	0.00447	0	0.00998	0.00783	0	0.00060	0.00020	0.00006	0	0.00200	0.00600	0	NA	0.00826
	Potash	0.04520	0.00005	0.00002	0	0.00008	0.00007	0	0.00000	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	2.76000	0.00472	0.00222	0	0.00487	0.00389	0	0.00030	0.00007	0.00002	0	0.00090	0.00200	0	NA	0.00299
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06420	0.00011	0.00005	0	0.00011	0.00009	0	0.00001	0.00000	0.00000	0	0.00002	0.00007	0	NA	0.00009

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Bismarck, ND	Boron	0.01790	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	6.41000	0.00193	0.00091	0	0.00934	0.00678	0	0.00070	0.00005	0.00002	0	0.00205	0.00600	0	NA	0.00812
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	90.40000	0.02520	0.01190	0	0.13000	0.09310	0	0.00900	0.00030	0.00009	0	0.02000	0.04000	0	NA	0.06039
	Micronutrients	0.03170	0.00001	0.00000	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00180	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	11.00000	0.00338	0.00159	0	0.01610	0.01160	0	0.00100	0.00006	0.00002	0	0.00400	0.00900	0	NA	0.01308
	NPK for P2O5	4.63000	0.00132	0.00063	0	0.00668	0.00485	0	0.00050	0.00003	0.00001	0	0.00105	0.00300	0	NA	0.00409
	P2O5 - 1	6.20000	0.00192	0.00091	0	0.00910	0.00657	0	0.00060	0.00003	0.00001	0	0.00200	0.00500	0	NA	0.00704
	Potash	0.05180	0.00001	0.00001	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	3.14000	0.00092	0.00044	0	0.00454	0.00327	0	0.00030	0.00002	0.00000	0	0.00090	0.00200	0	NA	0.00292
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07260	0.00002	0.00001	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
	Boise, ID	Boron	0.01890	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
Gypsum Products		6.65000	0.00658	0.00310	0	0.01040	0.00806	0	0.00070	0.00020	0.00005	0	0.00300	0.00700	0	NA	0.01025
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		95.30000	0.08690	0.04100	0	0.14900	0.11300	0	0.01000	0.00100	0.00030	0	0.02000	0.05000	0	NA	0.07130
Micronutrients		0.03330	0.00003	0.00001	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00191	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		11.60000	0.01080	0.00510	0	0.01850	0.01410	0	0.00100	0.00020	0.00007	0	0.00400	0.01000	0	NA	0.01427
NPK for P2O5		4.81000	0.00493	0.00233	0	0.00758	0.00599	0	0.00050	0.00009	0.00003	0	0.00200	0.00400	0	NA	0.00612
P2O5 - 1		6.60000	0.00620	0.00293	0	0.01040	0.00804	0	0.00070	0.00010	0.00004	0	0.00200	0.00600	0	NA	0.00814
Potash		0.05100	0.00004	0.00002	0	0.00008	0.00006	0	0.00001	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
S as Nutrient		3.34000	0.00306	0.00144	0	0.00530	0.00404	0	0.00040	0.00005	0.00001	0	0.00100	0.00200	0	NA	0.00306
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.07580	0.00008	0.00004	0	0.00012	0.00009	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010
Boulder, CO		Boron	0.01840	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
	Gypsum Products	6.43000	0.00736	0.00347	0	0.01050	0.00813	0	0.00070	0.00020	0.00006	0	0.00300	0.00700	0	NA	0.01026
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	93.10000	0.08950	0.04220	0	0.14900	0.11500	0	0.00905	0.00100	0.00030	0	0.02000	0.05000	0	NA	0.07130
	Micronutrients	0.03230	0.00003	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00187	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	11.40000	0.01160	0.00549	0	0.01790	0.01380	0	0.00100	0.00020	0.00008	0	0.00400	0.01000	0	NA	0.01428
	NPK for P2O5	4.69000	0.00473	0.00223	0	0.00741	0.00571	0	0.00050	0.00009	0.00003	0	0.00200	0.00400	0	NA	0.00612
	P2O5 - 1	6.37000	0.00646	0.00305	0	0.01040	0.00791	0	0.00070	0.00010	0.00004	0	0.00200	0.00600	0	NA	0.00814
	Potash	0.05180	0.00005	0.00002	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	3.21000	0.00324	0.00153	0	0.00516	0.00404	0	0.00030	0.00006	0.00002	0	0.00100	0.00300	0	NA	0.00408
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07450	0.00008	0.00004	0	0.00012	0.00009	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010

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Casper, WY	Boron	0.01800	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	6.34000	0.00216	0.00102	0	0.00940	0.00673	0	0.00070	0.00006	0.00002	0	0.00300	0.00600	0	NA	0.00908
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	90.20000	0.02920	0.01380	0	0.13100	0.09450	0	0.00900	0.00031	0.00010	0	0.02000	0.04000	0	NA	0.06041
	Micronutrients	0.03180	0.00001	0.00000	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00180	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	11.10000	0.00384	0.00181	0	0.01610	0.01160	0	0.00100	0.00008	0.00002	0	0.00400	0.00900	0	NA	0.01310
	NPK for P2O5	4.69000	0.00158	0.00074	0	0.00680	0.00492	0	0.00050	0.00003	0.00001	0	0.00100	0.00300	0	NA	0.00404
	P2O5 - 1	6.27000	0.00211	0.00099	0	0.00902	0.00661	0	0.00061	0.00004	0.00001	0	0.00200	0.00500	0	NA	0.00705
	Potash	0.04980	0.00001	0.00001	0	0.00007	0.00005	0	0.00001	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	3.08000	0.00107	0.00051	0	0.00462	0.00334	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07170	0.00003	0.00001	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
	Charleston, SC	Boron	0.01620	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.73000	0.00772	0.00364	0	0.00953	0.00746	0	0.00060	0.00020	0.00007	0	0.00300	0.00700	0	NA	0.01027
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		81.70000	0.08870	0.04190	0	0.13600	0.10500	0	0.00805	0.00100	0.00030	0	0.02000	0.04000	0	NA	0.06130
Micronutrients		0.02890	0.00004	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00163	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		10.20000	0.01240	0.00587	0	0.01630	0.01260	0	0.00100	0.00020	0.00008	0	0.00400	0.01000	0	NA	0.01428
NPK for P2O5		4.21000	0.00469	0.00221	0	0.00691	0.00547	0	0.00040	0.00010	0.00003	0	0.00105	0.00400	0	NA	0.00518
P2O5 - 1		5.64000	0.00661	0.00312	0	0.00917	0.00712	0	0.00060	0.00010	0.00004	0	0.00200	0.00500	0	NA	0.00714
Potash		0.04560	0.00005	0.00002	0	0.00007	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		2.78000	0.00350	0.00165	0	0.00471	0.00370	0	0.00030	0.00005	0.00002	0	0.00090	0.00200	0	NA	0.00297
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06480	0.00009	0.00004	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00007	0	NA	0.00009
Chicago, IL		Boron	0.01730	0.00004	0.00002	0	0.00003	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
	Gypsum Products	6.08000	0.01360	0.00641	0	0.01110	0.00904	0	0.00070	0.00040	0.00010	0	0.00300	0.00800	0	NA	0.01150
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	88.90000	0.17900	0.08440	0	0.16500	0.13100	0	0.00900	0.00200	0.00050	0	0.02000	0.05000	0	NA	0.07250
	Micronutrients	0.03040	0.00006	0.00003	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00176	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.80000	0.02290	0.01080	0	0.01880	0.01570	0	0.00100	0.00040	0.00010	0	0.00400	0.01000	0	NA	0.01450
	NPK for P2O5	4.34000	0.00866	0.00408	0	0.00781	0.00665	0	0.00050	0.00020	0.00005	0	0.00200	0.00500	0	NA	0.00725
	P2O5 - 1	6.08000	0.01270	0.00600	0	0.01130	0.00923	0	0.00060	0.00020	0.00007	0	0.00200	0.00600	0	NA	0.00827
	Potash	0.04680	0.00007	0.00004	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	3.00000	0.00663	0.00313	0	0.00545	0.00452	0	0.00030	0.00009	0.00003	0	0.00100	0.00300	0	NA	0.00412
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06900	0.00015	0.00007	0	0.00013	0.00010	0	0.00001	0.00000	0.00000	0	0.00003	0.00008	0	NA	0.00011

**95th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (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	0.01750	0.00004	0.00002	0	0.00003	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Gypsum Products	6.07000	0.01260	0.00595	0	0.01090	0.00893	0	0.00070	0.00030	0.00010	0	0.00300	0.00800	0	NA	0.01140
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	86.60000	0.17000	0.08020	0	0.15700	0.12800	0	0.00900	0.00200	0.00050	0	0.02000	0.05000	0	NA	0.07250
	Micronutrients	0.03100	0.00006	0.00003	0	0.00006	0.00005	0	0.00000	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	Mn	0.00175	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.70000	0.02220	0.01050	0	0.01890	0.01560	0	0.00100	0.00040	0.00010	0	0.00400	0.01000	0	NA	0.01450
	NPK for P2O5	4.51000	0.00875	0.00413	0	0.00788	0.00660	0	0.00050	0.00020	0.00005	0	0.00200	0.00500	0	NA	0.00725
	P2O5 - 1	6.05000	0.01330	0.00625	0	0.01110	0.00918	0	0.00060	0.00020	0.00007	0	0.00200	0.00600	0	NA	0.00827
	Potash	0.04890	0.00010	0.00005	0	0.00009	0.00008	0	0.00000	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	2.97000	0.00629	0.00297	0	0.00548	0.00448	0	0.00030	0.00010	0.00003	0	0.00100	0.00300	0	NA	0.00413
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06910	0.00014	0.00007	0	0.00013	0.00010	0	0.00001	0.00000	0.00000	0	0.00003	0.00008	0	NA	0.00011
	Fresno, CA	Boron	0.01850	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
Gypsum Products		6.45000	0.00510	0.00240	0	0.01000	0.00753	0	0.00070	0.00010	0.00004	0	0.00300	0.00700	0	NA	0.01014
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		91.10000	0.06870	0.03240	0	0.14100	0.10500	0	0.00905	0.00080	0.00020	0	0.02000	0.04050	0	NA	0.06150
Micronutrients		0.03210	0.00002	0.00001	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00184	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		11.40000	0.00902	0.00425	0	0.01760	0.01350	0	0.00100	0.00020	0.00006	0	0.00400	0.01000	0	NA	0.01426
NPK for P2O5		4.72000	0.00363	0.00171	0	0.00726	0.00547	0	0.00050	0.00008	0.00002	0	0.00200	0.00400	0	NA	0.00610
P2O5 - 1		6.39000	0.00497	0.00234	0	0.00986	0.00748	0	0.00070	0.00009	0.00003	0	0.00200	0.00500	0	NA	0.00712
Potash		0.05080	0.00004	0.00002	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		3.17000	0.00254	0.00120	0	0.00506	0.00383	0	0.00030	0.00005	0.00001	0	0.00091	0.00200	0	NA	0.00297
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.07350	0.00006	0.00003	0	0.00012	0.00009	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010
Grand Island, NE		Boron	0.01840	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	6.42000	0.00265	0.00125	0	0.00957	0.00699	0	0.00070	0.00007	0.00002	0	0.00300	0.00600	0	NA	0.00909
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	89.80000	0.03430	0.01620	0	0.13500	0.09820	0	0.00900	0.00040	0.00010	0	0.02000	0.04000	0	NA	0.06050
	Micronutrients	0.03170	0.00001	0.00001	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00183	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	11.30000	0.00454	0.00214	0	0.01680	0.01220	0	0.00100	0.00009	0.00003	0	0.00400	0.00900	0	NA	0.01312
	NPK for P2O5	4.64000	0.00196	0.00092	0	0.00686	0.00512	0	0.00050	0.00004	0.00001	0	0.00200	0.00300	0	NA	0.00505
	P2O5 - 1	6.36000	0.00247	0.00116	0	0.00937	0.00689	0	0.00070	0.00004	0.00002	0	0.00200	0.00500	0	NA	0.00706
	Potash	0.05080	0.00002	0.00001	0	0.00008	0.00005	0	0.00001	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	3.16000	0.00135	0.00064	0	0.00474	0.00349	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07330	0.00003	0.00001	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008

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Vanadium (Adult)**

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Harrisburg, PA	Boron	0.01710	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	6.00000	0.00524	0.00247	0	0.00946	0.00716	0	0.00060	0.00010	0.00004	0	0.00300	0.00700	0	NA	0.01014
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	86.90000	0.07670	0.03620	0	0.13600	0.10200	0	0.00900	0.00080	0.00020	0	0.02000	0.04000	0	NA	0.06100
	Micronutrients	0.03010	0.00003	0.00001	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00171	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.60000	0.00909	0.00429	0	0.01650	0.01250	0	0.00100	0.00020	0.00006	0	0.00400	0.01000	0	NA	0.01426
	NPK for P2O5	4.25000	0.00377	0.00178	0	0.00672	0.00516	0	0.00050	0.00007	0.00002	0	0.00105	0.00400	0	NA	0.00514
	P2O5 - 1	5.95000	0.00485	0.00229	0	0.00938	0.00695	0	0.00060	0.00008	0.00003	0	0.00200	0.00500	0	NA	0.00711
	Potash	0.04720	0.00003	0.00001	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	2.94000	0.00251	0.00118	0	0.00472	0.00360	0	0.00030	0.00004	0.00001	0	0.00090	0.00200	0	NA	0.00295
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06900	0.00006	0.00003	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00007	0	NA	0.00009
	Hartford, CT	Boron	0.01630	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.89000	0.00443	0.00209	0	0.00900	0.00689	0	0.00060	0.00010	0.00004	0	0.00200	0.00600	0	NA	0.00814
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		85.40000	0.05870	0.02770	0	0.13100	0.09750	0	0.00900	0.00070	0.00020	0	0.02000	0.04000	0	NA	0.06090
Micronutrients		0.02910	0.00002	0.00001	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00166	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		10.30000	0.00730	0.00344	0	0.01560	0.01160	0	0.00100	0.00010	0.00004	0	0.00400	0.00900	0	NA	0.01314
NPK for P2O5		4.24000	0.00291	0.00137	0	0.00655	0.00493	0	0.00041	0.00006	0.00002	0	0.00100	0.00300	0	NA	0.00408
P2O5 - 1		5.73000	0.00404	0.00191	0	0.00893	0.00666	0	0.00060	0.00007	0.00002	0	0.00200	0.00500	0	NA	0.00709
Potash		0.04600	0.00003	0.00001	0	0.00007	0.00005	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		2.87000	0.00210	0.00099	0	0.00443	0.00335	0	0.00030	0.00003	0.00001	0	0.00081	0.00200	0	NA	0.00285
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06700	0.00005	0.00002	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
Houston, TX		Boron	0.01660	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.74000	0.00377	0.00178	0	0.00871	0.00650	0	0.00060	0.00009	0.00003	0	0.00200	0.00600	0	NA	0.00812
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	83.00000	0.04680	0.02210	0	0.12500	0.09170	0	0.00900	0.00060	0.00010	0	0.02000	0.04000	0	NA	0.06070
	Micronutrients	0.02910	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00168	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.20000	0.00647	0.00305	0	0.01560	0.01150	0	0.00100	0.00010	0.00004	0	0.00400	0.00900	0	NA	0.01314
	NPK for P2O5	4.34000	0.00244	0.00115	0	0.00641	0.00497	0	0.00040	0.00005	0.00001	0	0.00100	0.00300	0	NA	0.00406
	P2O5 - 1	5.78000	0.00349	0.00165	0	0.00894	0.00661	0	0.00060	0.00006	0.00002	0	0.00200	0.00400	0	NA	0.00608
	Potash	0.04460	0.00002	0.00001	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	2.85000	0.00164	0.00077	0	0.00440	0.00329	0	0.00030	0.00003	0.00001	0	0.00090	0.00200	0	NA	0.00294
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06680	0.00005	0.00002	0	0.00010	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008

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Vanadium (Adult)**

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Huntington, WV	Boron	0.01720	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	6.03000	0.00668	0.00315	0	0.00984	0.00761	0	0.00070	0.00020	0.00006	0	0.00300	0.00700	0	NA	0.01026
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	85.10000	0.09670	0.04560	0	0.14100	0.11000	0	0.00900	0.00100	0.00030	0	0.02000	0.04000	0	NA	0.06130
	Micronutrients	0.03030	0.00003	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00172	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.60000	0.01190	0.00562	0	0.01720	0.01300	0	0.00100	0.00020	0.00007	0	0.00400	0.01000	0	NA	0.01427
	NPK for P2O5	4.44000	0.00489	0.00230	0	0.00720	0.00551	0	0.00050	0.00010	0.00003	0	0.00200	0.00400	0	NA	0.00613
	P2O5 - 1	5.92000	0.00655	0.00309	0	0.00957	0.00730	0	0.00060	0.00010	0.00004	0	0.00200	0.00500	0	NA	0.00714
	Potash	0.04650	0.00005	0.00002	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	2.98000	0.00338	0.00160	0	0.00489	0.00375	0	0.00030	0.00006	0.00002	0	0.00090	0.00200	0	NA	0.00298
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06820	0.00008	0.00004	0	0.00011	0.00009	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010
	Las Vegas, NV	Boron	0.01820	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		6.48000	0.00221	0.00104	0	0.00944	0.00684	0	0.00070	0.00006	0.00002	0	0.00300	0.00600	0	NA	0.00908
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		92.10000	0.02830	0.01340	0	0.13500	0.09730	0	0.01000	0.00030	0.00008	0	0.02000	0.04000	0	NA	0.06038
Micronutrients		0.03220	0.00001	0.00001	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00184	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		11.40000	0.00396	0.00187	0	0.01660	0.01190	0	0.00100	0.00007	0.00003	0	0.00400	0.00900	0	NA	0.01310
NPK for P2O5		4.73000	0.00162	0.00077	0	0.00678	0.00491	0	0.00050	0.00003	0.00001	0	0.00105	0.00400	0	NA	0.00509
P2O5 - 1		6.51000	0.00207	0.00097	0	0.00953	0.00683	0	0.00070	0.00003	0.00001	0	0.00200	0.00500	0	NA	0.00704
Potash		0.05030	0.00001	0.00001	0	0.00007	0.00005	0	0.00001	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		3.16000	0.00114	0.00054	0	0.00471	0.00349	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.07270	0.00003	0.00001	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
Los Angeles, CA		Boron	0.01780	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
	Gypsum Products	6.35000	0.00640	0.00302	0	0.01010	0.00779	0	0.00070	0.00020	0.00006	0	0.00300	0.00700	0	NA	0.01026
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	91.10000	0.08600	0.04060	0	0.14400	0.10900	0	0.00900	0.00091	0.00020	0	0.02000	0.04050	0	NA	0.06161
	Micronutrients	0.03170	0.00003	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00182	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	11.20000	0.01160	0.00547	0	0.01760	0.01340	0	0.00100	0.00020	0.00007	0	0.00400	0.01000	0	NA	0.01427
	NPK for P2O5	4.63000	0.00384	0.00181	0	0.00711	0.00542	0	0.00050	0.00009	0.00003	0	0.00200	0.00400	0	NA	0.00612
	P2O5 - 1	6.27000	0.00630	0.00297	0	0.01000	0.00768	0	0.00061	0.00010	0.00003	0	0.00200	0.00500	0	NA	0.00713
	Potash	0.04930	0.00005	0.00002	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	3.10000	0.00319	0.00150	0	0.00500	0.00389	0	0.00030	0.00005	0.00002	0	0.00100	0.00200	0	NA	0.00307
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07190	0.00008	0.00004	0	0.00012	0.00009	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010

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Vanadium (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	0.01600	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Gypsum Products	5.59000	0.01010	0.00477	0	0.00982	0.00792	0	0.00060	0.00030	0.00008	0	0.00300	0.00700	0	NA	0.01038
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	82.00000	0.13300	0.06290	0	0.14100	0.11300	0	0.00800	0.00200	0.00040	0	0.02000	0.05000	0	NA	0.07240
	Micronutrients	0.02760	0.00005	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00162	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	9.84000	0.01730	0.00817	0	0.01710	0.01370	0	0.00100	0.00030	0.00010	0	0.00400	0.01000	0	NA	0.01440
	NPK for P2O5	3.98000	0.00701	0.00331	0	0.00706	0.00566	0	0.00040	0.00010	0.00004	0	0.00105	0.00400	0	NA	0.00519
	P2O5 - 1	5.66000	0.01000	0.00473	0	0.00992	0.00789	0	0.00060	0.00020	0.00006	0	0.00200	0.00505	0	NA	0.00731
	Potash	0.04470	0.00006	0.00003	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	2.78000	0.00501	0.00236	0	0.00503	0.00401	0	0.00030	0.00008	0.00002	0	0.00090	0.00300	0	NA	0.00400
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06400	0.00012	0.00006	0	0.00011	0.00009	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010
	Miami, FL	Boron	0.01610	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.39000	0.00268	0.00126	0	0.00808	0.00602	0	0.00060	0.00006	0.00002	0	0.00200	0.00500	0	NA	0.00708
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		73.30000	0.02990	0.01410	0	0.11500	0.08290	0	0.00705	0.00030	0.00008	0	0.01000	0.03000	0	NA	0.04038
Micronutrients		0.02610	0.00001	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00158	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		9.41000	0.00417	0.00196	0	0.01420	0.01030	0	0.00091	0.00007	0.00003	0	0.00300	0.00800	0	NA	0.01110
NPK for P2O5		4.04000	0.00163	0.00077	0	0.00593	0.00426	0	0.00040	0.00003	0.00001	0	0.00100	0.00300	0	NA	0.00404
P2O5 - 1		5.06000	0.00231	0.00109	0	0.00756	0.00557	0	0.00050	0.00004	0.00001	0	0.00100	0.00400	0	NA	0.00505
Potash		0.04480	0.00001	0.00001	0	0.00007	0.00005	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
S as Nutrient		2.68000	0.00105	0.00049	0	0.00407	0.00295	0	0.00030	0.00001	0.00001	0	0.00070	0.00200	0	NA	0.00272
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06350	0.00003	0.00001	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Minneapolis, MN		Boron	0.01760	0.00003	0.00002	0	0.00003	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
	Gypsum Products	6.21000	0.01020	0.00483	0	0.01080	0.00858	0	0.00070	0.00021	0.00009	0	0.00300	0.00700	0	NA	0.01030
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	91.40000	0.14000	0.06610	0	0.15700	0.12400	0	0.00900	0.00200	0.00050	0	0.02000	0.05000	0	NA	0.07250
	Micronutrients	0.03070	0.00005	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00179	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	11.00000	0.01780	0.00842	0	0.01850	0.01490	0	0.00100	0.00030	0.00010	0	0.00400	0.01000	0	NA	0.01440
	NPK for P2O5	4.52000	0.00653	0.00308	0	0.00767	0.00609	0	0.00050	0.00010	0.00004	0	0.00200	0.00400	0	NA	0.00614
	P2O5 - 1	6.23000	0.00995	0.00470	0	0.01060	0.00849	0	0.00061	0.00020	0.00005	0	0.00200	0.00600	0	NA	0.00825
	Potash	0.05120	0.00007	0.00003	0	0.00009	0.00008	0	0.00001	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	3.10000	0.00461	0.00218	0	0.00525	0.00416	0	0.00030	0.00007	0.00002	0	0.00100	0.00300	0	NA	0.00409
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07180	0.00012	0.00005	0	0.00013	0.00010	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010



**95th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (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	0.01680	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	5.76000	0.00510	0.00240	0	0.00908	0.00694	0	0.00060	0.00010	0.00004	0	0.00300	0.00605	0	NA	0.00919
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	83.90000	0.06300	0.02970	0	0.12900	0.09490	0	0.00900	0.00070	0.00020	0	0.02000	0.04000	0	NA	0.06090
	Micronutrients	0.02960	0.00002	0.00001	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00169	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.40000	0.00906	0.00427	0	0.01650	0.01240	0	0.00100	0.00020	0.00005	0	0.00400	0.00900	0	NA	0.01325
	NPK for P2O5	4.30000	0.00340	0.00160	0	0.00670	0.00519	0	0.00050	0.00007	0.00002	0	0.00100	0.00400	0	NA	0.00509
	P2O5 - 1	5.76000	0.00479	0.00226	0	0.00931	0.00701	0	0.00060	0.00008	0.00003	0	0.00200	0.00500	0	NA	0.00711
	Potash	0.04690	0.00003	0.00001	0	0.00007	0.00005	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	2.91000	0.00235	0.00111	0	0.00457	0.00347	0	0.00030	0.00004	0.00001	0	0.00080	0.00200	0	NA	0.00285
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06740	0.00006	0.00003	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
	Phoenix, AZ	Boron	0.01840	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		6.46000	0.00282	0.00133	0	0.00952	0.00699	0	0.00070	0.00007	0.00002	0	0.00300	0.00600	0	NA	0.00909
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		92.70000	0.03770	0.01780	0	0.13400	0.09930	0	0.00905	0.00040	0.00010	0	0.02000	0.04000	0	NA	0.06050
Micronutrients		0.03190	0.00001	0.00001	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00186	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		11.20000	0.00485	0.00229	0	0.01670	0.01220	0	0.00100	0.00009	0.00003	0	0.00400	0.00900	0	NA	0.01312
NPK for P2O5		4.73000	0.00184	0.00087	0	0.00696	0.00506	0	0.00050	0.00004	0.00001	0	0.00200	0.00400	0	NA	0.00605
P2O5 - 1		6.44000	0.00261	0.00123	0	0.00951	0.00698	0	0.00070	0.00004	0.00001	0	0.00200	0.00500	0	NA	0.00705
Potash		0.05100	0.00002	0.00001	0	0.00008	0.00005	0	0.00001	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		3.17000	0.00132	0.00062	0	0.00473	0.00351	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.07410	0.00003	0.00001	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
Portland, ME		Boron	0.01580	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.54000	0.00841	0.00397	0	0.00942	0.00747	0	0.00060	0.00020	0.00007	0	0.00205	0.00700	0	NA	0.00932
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	80.00000	0.10600	0.05020	0	0.13300	0.10300	0	0.00800	0.00100	0.00030	0	0.02000	0.04050	0	NA	0.06180
	Micronutrients	0.02740	0.00004	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00159	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	9.76000	0.01510	0.00711	0	0.01650	0.01310	0	0.00100	0.00030	0.00010	0	0.00400	0.01000	0	NA	0.01440
	NPK for P2O5	4.08000	0.00563	0.00265	0	0.00679	0.00534	0	0.00040	0.00010	0.00003	0	0.00100	0.00400	0	NA	0.00513
	P2O5 - 1	5.48000	0.00741	0.00350	0	0.00925	0.00734	0	0.00060	0.00010	0.00004	0	0.00200	0.00500	0	NA	0.00714
	Potash	0.04310	0.00006	0.00003	0	0.00007	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	2.77000	0.00394	0.00186	0	0.00471	0.00376	0	0.00030	0.00007	0.00002	0	0.00090	0.00200	0	NA	0.00299
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06300	0.00010	0.00005	0	0.00011	0.00009	0	0.00001	0.00000	0.00000	0	0.00002	0.00007	0	NA	0.00009

**95th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (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	0.01650	0.00004	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Gypsum Products	5.83000	0.01190	0.00562	0	0.01040	0.00863	0	0.00060	0.00030	0.00009	0	0.00300	0.00800	0	NA	0.01139
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	84.60000	0.14700	0.06910	0	0.14700	0.11800	0	0.00900	0.00200	0.00041	0	0.02000	0.05000	0	NA	0.07241
	Micronutrients	0.02930	0.00006	0.00003	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00167	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.20000	0.02170	0.01020	0	0.01820	0.01510	0	0.00100	0.00031	0.00010	0	0.00400	0.01000	0	NA	0.01441
	NPK for P2O5	4.22000	0.00806	0.00380	0	0.00741	0.00609	0	0.00050	0.00010	0.00005	0	0.00200	0.00400	0	NA	0.00615
	P2O5 - 1	5.88000	0.01130	0.00534	0	0.01050	0.00846	0	0.00060	0.00020	0.00007	0	0.00200	0.00600	0	NA	0.00827
	Potash	0.04640	0.00008	0.00004	0	0.00009	0.00007	0	0.00000	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	2.85000	0.00562	0.00265	0	0.00512	0.00414	0	0.00030	0.00009	0.00002	0	0.00100	0.00205	0	NA	0.00316
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06680	0.00014	0.00007	0	0.00012	0.00010	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010
	Salem, OR	Boron	0.01680	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.86000	0.00476	0.00225	0	0.00912	0.00700	0	0.00060	0.00010	0.00004	0	0.00300	0.00600	0	NA	0.00914
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		85.10000	0.06340	0.02990	0	0.13100	0.09800	0	0.00900	0.00080	0.00020	0	0.02000	0.04000	0	NA	0.06100
Micronutrients		0.02980	0.00002	0.00001	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00170	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		10.60000	0.00835	0.00394	0	0.01630	0.01210	0	0.00100	0.00010	0.00005	0	0.00400	0.00900	0	NA	0.01315
NPK for P2O5		4.31000	0.00314	0.00148	0	0.00671	0.00505	0	0.00050	0.00007	0.00002	0	0.00100	0.00400	0	NA	0.00509
P2O5 - 1		5.76000	0.00430	0.00203	0	0.00881	0.00662	0	0.00060	0.00008	0.00003	0	0.00200	0.00500	0	NA	0.00711
Potash		0.04730	0.00004	0.00002	0	0.00008	0.00006	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		2.94000	0.00219	0.00104	0	0.00456	0.00349	0	0.00030	0.00003	0.00001	0	0.00081	0.00200	0	NA	0.00285
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06730	0.00005	0.00003	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
Salt Lake City, UT		Boron	0.01870	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA
	Gypsum Products	6.56000	0.00775	0.00366	0	0.01080	0.00842	0	0.00070	0.00020	0.00007	0	0.00300	0.00705	0	NA	0.01032
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	94.20000	0.09750	0.04600	0	0.15000	0.11600	0	0.01000	0.00100	0.00031	0	0.02000	0.05000	0	NA	0.07131
	Micronutrients	0.03290	0.00004	0.00002	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00189	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	11.60000	0.01350	0.00635	0	0.01860	0.01440	0	0.00100	0.00020	0.00008	0	0.00400	0.01000	0	NA	0.01428
	NPK for P2O5	4.83000	0.00538	0.00254	0	0.00779	0.00601	0	0.00050	0.00010	0.00003	0	0.00200	0.00400	0	NA	0.00613
	P2O5 - 1	6.56000	0.00716	0.00338	0	0.01050	0.00803	0	0.00061	0.00010	0.00005	0	0.00200	0.00600	0	NA	0.00815
	Potash	0.05090	0.00005	0.00002	0	0.00008	0.00006	0	0.00001	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
	S as Nutrient	3.20000	0.00391	0.00184	0	0.00539	0.00420	0	0.00030	0.00006	0.00002	0	0.00100	0.00300	0	NA	0.00408
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07480	0.00009	0.00004	0	0.00012	0.00010	0	0.00001	0.00000	0.00000	0	0.00003	0.00007	0	NA	0.00010

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Vanadium (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	0.01810	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	6.30000	0.00400	0.00189	0	0.00976	0.00725	0	0.00070	0.00010	0.00004	0	0.00300	0.00600	0	NA	0.00914
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	91.30000	0.05390	0.02540	0	0.13700	0.10200	0	0.00900	0.00060	0.00010	0	0.02000	0.04000	0	NA	0.06070
	Micronutrients	0.03090	0.00002	0.00001	0	0.00005	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	Mn	0.00183	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	10.80000	0.00704	0.00332	0	0.01660	0.01270	0	0.00100	0.00010	0.00004	0	0.00400	0.00905	0	NA	0.01319
	NPK for P2O5	4.57000	0.00285	0.00135	0	0.00686	0.00528	0	0.00050	0.00006	0.00002	0	0.00200	0.00305	0	NA	0.00513
	P2O5 - 1	6.17000	0.00392	0.00185	0	0.00965	0.00721	0	0.00060	0.00007	0.00002	0	0.00200	0.00500	0	NA	0.00709
	Potash	0.04860	0.00003	0.00001	0	0.00008	0.00005	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
	S as Nutrient	3.12000	0.00200	0.00094	0	0.00493	0.00371	0	0.00030	0.00003	0.00001	0	0.00090	0.00200	0	NA	0.00294
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.07270	0.00005	0.00002	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
	Winnemucca, NV	Boron	0.01840	0.00000	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		6.31000	0.00103	0.00049	0	0.00906	0.00651	0	0.00070	0.00003	0.00001	0	0.00300	0.00600	0	NA	0.00904
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		93.20000	0.01360	0.00639	0	0.13100	0.09250	0	0.00900	0.00020	0.00005	0	0.02000	0.04000	0	NA	0.06025
Micronutrients		0.03240	0.00001	0.00000	0	0.00005	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
Mn		0.00185	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		11.50000	0.00177	0.00084	0	0.01650	0.01160	0	0.00100	0.00003	0.00001	0	0.00400	0.00900	0	NA	0.01304
NPK for P2O5		4.78000	0.00068	0.00032	0	0.00684	0.00485	0	0.00050	0.00002	0.00000	0	0.00100	0.00300	0	NA	0.00402
P2O5 - 1		6.37000	0.00099	0.00047	0	0.00921	0.00645	0	0.00070	0.00002	0.00001	0	0.00200	0.00500	0	NA	0.00703
Potash		0.05060	0.00001	0.00000	0	0.00007	0.00005	0	0.00000	0.00000	0.00000	0	0.00001	0.00003	0	NA	0.00004
S as Nutrient		3.21000	0.00050	0.00024	0	0.00466	0.00336	0	0.00030	0.00001	0.00000	0	0.00090	0.00200	0	NA	0.00291
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.07320	0.00001	0.00001	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008

<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.