

# LIQUID VITAMIN PLUS

## LABORATORY ANALYSIS

**Sample Identification:** "Utrition" Liquid Vitamin Plus, 32 fl. oz. (960 ml) Lot #010230201, Serving size= 1 fl. oz. (30 ml)

**Date Received:** 10-24-2002, 1:05 PM

### Methods:

Sample preparation for ICP-MS

NLEA abbreviated nutrient package (proximate)

Metals by ICP-MS

Elemental scan by ICP-MS

Chloride by titration

Sugar profile by High Performance Liquid Chromatography (HPLC)

Fiber - Total Dietary (AOAC)

Vitamin E by HPLC

Niacin (Nicotinic acid, Vitamin B3) by microbiological assay, AOAC 944.13

Pantothenic acid (Vitamin B5) by microbiological assay

Folic Acid, Total (Vitamin B9) by microbiological assay

Vitamin B12 (methylcobalamin) by microbiological assay

Biotin (Vitamin H) by microbiological assay

Vitamin B1 (thiamine) by fluorometry

Riboflavin (Vitamin B2) by fluorometry

Vitamin C (total) by fluorometry

Choline by Colorimetric assay

Vitamin A (total)

Vitamin D (total) by HPLC

Vitamin B6 (pyridoxine) by microbiological assay

Vitamin K3 (menadione) by HPLC

Glucosamine by capillary electrophoresis (CE)

Calcium by inductively coupled plasma (ICP)

Iron by ICP

Potassium by ICP

Magnesium by ICP

Sodium by ICP

Ginko Flavonglycosides by HPLC

Catechins and caffeine by HPLC

Bioflavonoids by HPLC

Monomeric phenols in Grape Seed Extract by HPLC

### Results: (all assays represent an average of two separate experimental determinations)

Ingredient Assayed	Amount per Serving	Notes
Vitamin A	5120 IU retinyl palmitate 4960 IU beta carotene	
Vitamin B1 (thiamine hydrochloride)	96 mg	
Riboflavin (Vitamin B2)	98 mg	
Niacin (Vitamin B3)	18 mg	
Vitamin B6 (pyridoxine)	19 mg	
Vitamin B5 (pantothenic acid)	100 mg	
Vitamin B12 (methylcobalamin)	193 mg	
Vitamin C (ascorbic acid)	1490 mg	
Vitamin D	523 IU	
Vitamin E	50 IU	
Vitamin K	87 mcg	
Folic Acid, total (vitamin B9)	409 mcg	

Biotin	287 mcg	
Choline	28.6 mg	
Calcium	47.8 mg	
Magnesium	21 mg	
Potassium	24.6 mg	
Sodium	3 mg	
Chloride, soluble as sodium chloride	0.025 g	
Glucosamine sulfate	493 mg	From Glucosamine results

## Complex Extracts:

Green Tea Catechins and Caffeine (mcg/oz)						
Epigallic catechin	Catechin	Epicatechin	Epigallo catechin gallate	Gallic catechin gallate	Epicatechin gallate	Caffeine
13	5	5	24	30	10	< 0.03
Grape Seed Extract - monomeric phenols (mg/oz)						
Gallic acid	Catechin	Epicatechin	Epicatechin gallate			
10	1.7	2.5	2.1			
Ginko Flavenoids (mg/oz)						
Quercetin	Kaempferol			Isorhamnetin		
< 35	< 35*			< 35		

\*subject to matrix interference Ginko Biloba (standardized) is made up of ~ 25% flavoglycosides.

Bioflavenoids (mg/oz)			
Rutin	Hesperidin	Quercetin	Total citrus bioflavenoids
3.2	3.5	3.7	11

## Trace Elements:

Element	Amount (mg/oz)	Element	Amount (mg/oz)
Lithium	< 0.02	Lanthanum	< 0.02
Boron	< 0.02	Praseodymium	< 0.02
Silicon	NA	Samarium	< 0.02
Titanium	< 0.02	Gadolinium	< 0.02
Chromium	< 0.02	Beryllium	< 0.02
Iron	< 0.03	Aluminum	< 0.02
Nickel	< 0.02	Scandium	< 0.02
Zinc	< 0.12	Vanadium	< 0.02
Germanium	< 0.02	Manganese	< 0.02
Selenium	< 0.02	Cobalt	< 0.02
Strontium	< 0.02	Copper	< 0.02
Zirconium	< 0.02	Gallium	< 0.02
Molybdenum	< 0.02	Arsenic	< 0.02
Rhodium	< 0.02	Rubidium	< 0.02
Silver	< 0.02	Yttrium	< 0.02
Antimony	< 0.02	Niobium	< 0.02
Cesium	< 0.02	Ruthenium	< 0.02
Palladium	< 0.02	Mercury	< 0.02
Cadmium	< 0.02	Lead	< 0.02
Tin	< 0.02	Thorium	< 0.02
Tellurium	< 0.02	Thulium	< 0.02
Barium	< 0.02	Lutetium	< 0.02

Cerium	< 0.02	Tantalum	< 0.02
Neodymium	< 0.02	Rhenium	< 0.02
Europium	< 0.02	Iridium	< 0.02
Terbium	< 0.02	Gold	< 0.02
Dysprosium	< 0.02	Thallium	< 0.02
Erbium	< 0.02	Bismuth	< 0.02
Ytterbium	< 0.02	Uranium	< 0.02
Hafnium	< 0.02	Bromine	< 0.3
Tungsten	< 0.02	Iodine	< 0.3
Osmium	< 0.02		
Platinum	< 0.02		

## Quality control inspected and certified by:



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