

Reference Sample – Pine needles / *Pinus nigra* (Austria)

(used in the 16th Needle/Leaf Interlaboratory Test as Sample 3)

Element concentration calculated on dry mass (105°C).

Element (N/L)	Unit	Mean	S _R
N 190/48	mg/g	14.67	0.613
S 180/45	mg/g	0.96	0.093
P 204/51	mg/g	1.24	0.122
Ca 196/49	mg/g	4.42	0.206
Mg 204/51	mg/g	1.63	0.093
K 200/50	mg/g	5.64	0.295
Zn 172/43	µg/g	28.36	1.893
Mn 176/44	µg/g	29.91	2.386
Fe 176/44	µg/g	145.25	13.993
Cu 156/39	µg/g	3.66	0.442
Pb 100/25	µg/g	0.46	0.072
Cd 88/22	ng/g	18.07	3.108
B 96/24	µg/g	17.59	2.035
C 159/40	g/100g	51.80	0.732

N Outlier free single values
 L Number of laboratories without outliers type 2 and 3
 Mean ... Total mean value from all results without outliers
 S_R ... Standard deviation from all outlier free results

$$S_{mean} = \frac{S_R}{\sqrt{N}}$$

Standard error of the mean

A homogeneity test was made with 250 mg sample material – the recommended minimum sample intake is therefore 250 mg.