

Working Procedure for Method MEB Using Cs as Internal Reference Std.

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1 H	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Key Atomic No. Elem. Symbol \ddot{e} (nm) DL (mg / mL) </div>															13	14	15	16	17	2
3 Li 670.784 .00002																4 Be 234.861 .0003	5 B 136.246 .006	6 C	7 N	8 O	9 F
11 Na 589.592 .0003	12 Mg 280.270 .00006	3	4	5	6	7	8	9	10	11	12	13 Al 396.152 .002	14 Si 251.612 .003	15 P 168.599 .04	16 S 142.503 .04	17 Cl	18 Ar 404.442 Monitor				
19 K 766.490 .0025	20 Ca 183.801 .005	21 Sc 440.037 .002	22 Ti 190.63 .007	23 V 292.464 .003	24 Cr 267.716 .001	25 Mn 293.930 .002	26 Fe 239.562 .001	27 Co 228.615 .002	28 Ni 170.960 .006	29 Cu 224.700 .003	30 Zn 206.191 .0006	31 Ga 141.444 .002	32 Ge 164.919 .004	33 As 189.042 .009	34 Se 196.090 .009	35 Br	36 Kr				
37 Rb	38 Sr 460.733 .002	39 Y 371.030 .0004	40 Zr 343.823 .002	41 Nb 269.706 .004	42 Mo 202.030 .0024	43 Tc	44 Ru 240.272	45 Rh 343.489	46 Pd 229.653	47 Ag 338.289 .006	48 Cd 226.502 .0005	49 In 158.583 .0007	50 Sn 175.800 .004	51 Sb 206.833 .006	52 Te 170.000 .008	53 I	54 Xe				
55 Cs 455.531 Int. Ref.	56 Ba 455.404 .00008	57 La 333.749 .003	72 Hf 227.336 .0006	73 Ta 268.517 .006	74 W 207.911 .007	75 Re 227.525 .004	76 Os	77 Ir 205.116	78 Pt 203.646	79 Au 242.795	80 Hg 184.950 .003	81 Tl 132.171 .02	82 Pb 168.215 .005	83 Bi 190.241 .007	84 Po	85 At	86 Rn				

87 Fr	88 Ra	89 Ac
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58 Ce 448.69 .02	59 Pr 442.535 .007	60 Nd 430.358 .013	61 Pm	62 Sm 359.260 .002	63 Eu 381.967 .002	64 Gd 335.047 .008	65 Tb 350.917 .005	66 Dy 353.170 .0009	67 Ho 345.600 .0009	68 Er 326.478 .004	69 Tm 379.575 .005	70 Yb 369.419 .0004	71 Lu 261.542 .0001
90 Th 283.73 0 .006	91 Pa	92 U 385.957 .04	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

Other Lines :

Ba 233.527
Mg 279.079
Ni 231.604
P 138.147
P 177.495

Standard Conc.'s :

Blank = 0 ppm
 Low = 0.1 ppm
 (1ppm for P and S)
 High = 1.0 ppm
 (10 ppm for P and S)

Cs is the internal standard
 and is 500 ppm in all
 standards and samples.

Instrumental Parameters:

Power 1350 W
 Coolant Flow 12 L/min
 Auxiliary Flow 1.0 L/min
 Nebulizer Flow 0.65 L/min
 Preflush Time 120 sec

Color Code
Internal Ref. Element
Monitor Line
Common
Precious Metals

MEB PROCEDURE REV (001)

Standard Preparation MEB, Filter 'Common'

1. Weigh each of three 500 mL LDPE bottles and record the tare wt. on the bottle to the nearest 0.1 gram.
2. To each of the bottles add 25 mL of electronic grade 70 % nitric acid followed by 25 mL of 1 % Cs (Cat # CsN-1SB-5).
3. To the blank, LOW and High standards add respectively 0, 0.5, and 5.0 mL of CCS-1, 4A, and 5A.
4. Dilute to a net weight of 500.0 grams with 18 MΩ water.

Standard Preparation MEB, Filter 'PM'

5. Weigh each of three 500 mL LDPE bottles and record the tare wt. on the bottle to the nearest 0.1 gram.
6. To each of the bottles add 150 mL of electronic grade 35 % HCl followed by 25 mL of 1 % Cs (Cat # CsN-1SB-5).
7. To the blank, LOW and High standards add respectively 0, 0.5, and 5.0 mL of CCS-2A.
8. Dilute to a net weight of 500.0 grams with 18 MΩ water.

Sample Preparation MEB, Filter 'Common'

1. Weigh the required no. of 100 mL LDPE bottles and record the tare wt. On the bottle to the nearest 0.1 gram.
2. To each of the bottles add 5 mL of electronic grade 70 % nitric acid followed by 5 mL of 1 % Cs (Cat # CsN-1SB-5).
3. Add the required mL of sample to produce a solution that falls near the calibration range.
4. Dilute to a net weight of 100.0 grams with 18 MΩ water.

Sample Preparation MEB, Filter 'PM'

5. Weigh the required no. of 100 mL LDPE bottles and record the tare wt. On the bottle to the nearest 0.1 gram.
6. To each of the bottles add 30 mL of electronic grade 35 % HCl followed by 5 mL of 1 % Cs (Cat # CsN-1SB-5).
7. Add the required mL of sample to produce a solution that falls near the calibration range.
8. Dilute to a net weight of 100.0 grams with 18 MΩ water.

Sample Measurement – All measurements are made using the Spectro CIROS and method MEB. The Command Editor File entitled 'MEB' contains the calibration, calibration check and sample analysis run sequence. Filters for the 'common' and precious metals, 'PM', can be modified to fit the analytical elemental needs. All data scans are saved automatically under 'MEB'. QPR file 'MEB' contains all references to lot numbers, QC laboratory books and product names.