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Nitrate_plus_Nitrite:Bottle

Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Nitrate_plus_Nitrite:Bottle for the range 5.5 to 46.1 µmol/l was 0.29,
k = 21 (0 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (Sp) was calculated by:
Sp = SQRT{sum (d*d)/2k}
where k is the number of pairs and d is the difference between pairs.

Accuracy of the stock standard batch was determined by using commercially available standards from
WAKO Chemicals (Sagami Chemical Company of Japan).
The values were within 1.66 % of the 20 µmol/l Nitrate Standard.

Accuracy was also determined by using commercially available standards from Kanso
(Environmental Technos Co. Ltd, Japan). Kanso Lot AZ-0722.
When this standard was run as an unknown, nitrate values were within 1.6 %.

Nitrate data from 1000 to 4000 m agree with results averaged over 16 profiles at P26 from 1995 to 2001 to within 2.04 %

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Nitrate 1 µmol/l	Nitrate 2 µmol/l	Rejected yes / no	Comment
1	7	Si03	74.8	27.2	28.6		
6	14	P2	100.1	37.6	37.9		
11	31	P4	600.4	43.5	42.8		
13	46	P4	200.0	34.1	34.3		
24	131	P8	200.6	29.7	29.9		
39	222	P12	40.4	6.0	6.1		
50	256	P16	29.8	5.5	5.5		
53	321	P16	251.1	35.8	35.7		
62	340	P20	201.0	28.2	28.4		
63	377	P20	174.9	27.0	27.0		
86	530	P26	75.1	17.3	17.7		
115	598	SS1	250.7	37.4	37.3		
119	631	SS3	9.8	6.2	6.3		
127	639	SS7	51.3	15.2	15.5		
128	651	Ri1	199.8	30.4	30.3		
135	671	Ri4	199.9	29.4	28.7		
141	693	M2	100.1	28.1	28.1		
142	705	M3	150.2	29.7	29.6		
143	721	M4	149.7	30.9	30.8		
147	745	SS5	39.8	6.1	6.0		
149	757	CS02	399.7	39.2	38.9		

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Phosphate:Bottle

Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Phosphate:Bottle for the range 0.81 to 3.24 µmol/l was 0.026,
k = 21 (0 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (Sp) was calculated by:
Sp = SQRT{sum (d*d)/2k}
where k is the number of pairs and d is the difference between pairs.

Accuracy was determined by using commercially available standards from Kanso
(Environmental Technos Co. Ltd, Japan). Kanso Lot AZ-0722.
When this standard was run as an unknown, phosphate values were within 0.30%.

Phosphate data from 1000 to 4000 m agree with results averaged over 16 profiles at P26 from 1995 to 2001
to within 0.92 %.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Phosphate 1 µmol/l	Phosphate 2 µmol/l	Rejected yes / no	Comment
1	7	Si03	74.8	3.13	3.24		
6	14	P2	100.1	2.88	2.86		
11	31	P4	600.4	3.18	3.17		
13	46	P4	200.0	2.41	2.42		
24	131	P8	200.6	2.10	2.10		
39	222	P12	40.4	0.88	0.89		
50	256	P16	29.8	0.83	0.82		
53	321	P16	251.1	2.55	2.58		
62	340	P20	201.0	2.09	2.07		
63	377	P20	174.9	1.91	1.93		
86	530	P26	75.1	1.53	1.53		
115	598	SS1	250.7	2.56	2.60		
119	631	SS3	9.8	0.81	0.81		
127	639	SS7	51.3	1.53	1.56		
128	651	Ri1	199.8	2.57	2.56		
135	671	Ri4	199.9	2.48	2.43		
141	693	M2	100.1	2.38	2.37		
142	705	M3	150.2	2.46	2.46		
143	721	M4	149.7	2.58	2.49		
147	745	SS5	39.8	0.86	0.85		
149	757	CS02	399.7	2.88	2.90		

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Silicate:Bottle

Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Silicate:Bottle for the range 7.6 to 138.3 µmol/l was 0.52,
k = 21 (0 outliers removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (Sp) was calculated by:
Sp = SQRT{sum (d*d)/2k}
where k is the number of pairs and d is the difference between pairs.

Accuracy of the stock standard batch was determined by using commercially available standards from
WAKO Chemicals (Sagami Chemical Company of Japan).
The values were within 0.24 % of the 100 µmol/l Silicate Standard.

Accuracy was also determined by using commercially available standards from Kanso
(Environmental Technos Co. Ltd, Japan). Kanso Lot AZ-0722.
When this standard was run as an unknown, silicate values were within 1.9%.

Silicate data from 1000 to 4000 m agree with results averaged over 16 profiles at P26 from 1995 to 2001 to within 0.45%

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Silicate 1 µmol/l	Silicate 2 µmol/l	Rejected yes / no	Comment
1	7	Si03	74.8	60.1	63.1		
6	14	P2	100.1	66.9	66.9		
11	31	P4	600.4	93.5	94.3		
13	46	P4	200.0	48.2	48.5		
24	131	P8	200.6	46.1	46.1		
39	222	P12	40.4	8.9	9.2		
50	256	P16	29.8	7.6	7.6		
53	321	P16	251.1	65.0	65.4		
62	340	P20	201.0	51.2	50.5		
63	377	P20	174.9	44.4	44.3		
86	530	P26	75.1	25.3	25.3		
115	598	SS1	250.7	57.9	58.0		
119	631	SS3	9.8	15.3	15.4		
127	639	SS7	51.3	27.5	27.8		
128	651	Ri1	199.8	60.9	61.4		
135	671	Ri4	199.9	57.4	56.7		
141	693	M2	100.1	53.5	53.5		
142	705	M3	150.2	56.6	56.4		
143	721	M4	149.7	58.5	58.4		
147	745	SS5	39.8	15.0	14.8		
149	757	CS02	399.7	71.3	71.4		