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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 6.5 to 45.7 $\mu\text{mol/l}$ was 0.08, $k = 18$ (1 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (S_p) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

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 0.32 % of the 20 $\mu\text{mol/l}$ Nitrate Standard.

Feb 12, 2013 Nitrate stock standard solution was used for this cruise analyses.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Nitrate 1 $\mu\text{mol/l}$	Nitrate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
6	11	P2	99.6	23.4	23.4		
7	30	P2	26.6	18.8	19.6	yes	
13	52	P8	149.1	29.6	29.8		
13	43	P8	1250.9	45.6	45.7		
22	111	P12	100.7	15.9	15.9		
22	97	P12	2500.5	41.8	41.9		
23	128	P12	9.8	11.3	11.3		
28	155	P16	9.7	12.8	12.8		
30	181	P16	50.9	12.7	12.8		
30	167	P16	1501.6	44.8	45.1		
41	279	P26	9.8	16.5	16.4		
42	253	P26	800.0	44.7	44.8		
61	327	P20	40.4	14.9	14.9		
62	357	P20	75.6	14.8	14.9		
62	348	P20	598.6	43.6	43.5		
62	342	P20	2500.8	41.6	41.5		
74	399	P4	124.4	25.5	25.6		
74	392	P4	600.2	44.4	44.3		
75	422	P4	10.0	6.6	6.5		

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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 0.80 to 3.26 $\mu\text{mol/l}$ was 0.007, $k = 18$ (1 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (S_p) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

where k is the number of pairs and d is the difference between pairs.

Feb 12, 2013 Phosphate stock standard solution (Feb 23 secondary) was used for this cruise analyses. The Phosphate values were within 0.20% of the previous (Feb 2012, secondary) stock solution.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Phosphate 1 $\mu\text{mol/l}$	Phosphate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
6	11	P2	99.6	1.88	1.88		
7	30	P2	26.6	1.57	1.63	yes	
13	52	P8	149.1	2.13	2.13		
13	43	P8	1250.9	3.25	3.26		
22	111	P12	100.7	1.38	1.38		
22	97	P12	2500.5	2.93	2.93		
23	128	P12	9.8	1.13	1.13		
28	155	P16	9.7	1.22	1.22		
30	181	P16	50.9	1.22	1.22		
30	167	P16	1501.6	3.2	3.19		
41	279	P26	9.8	1.44	1.45		
42	253	P26	800.0	3.19	3.19		
61	327	P20	40.4	1.38	1.35		
62	357	P20	75.6	1.36	1.35		
62	348	P20	598.6	3.12	3.13		
62	342	P20	2500.8	2.92	2.91		
74	399	P4	124.4	1.85	1.85		
74	392	P4	600.2	3.21	3.21		
75	422	P4	10.0	0.81	0.8		

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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 10.2 to 180.8 $\mu\text{mol/l}$ was 0.15,
k = 16 (1 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (S_p) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

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 0.48 % of the 200 $\mu\text{mol/l}$ Silicate standard that was analyzed while running these samples.

Feb 13, 2013 Silicate stock standard solution was used for this cruise analyses.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Silicate 1 $\mu\text{mol/l}$	Silicate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
6	11	P2	99.6	35.8	35.9		
7	30	P2	26.6	33.5	35.2	yes	
13	52	P8	149.1	42.6	42.5		
13	43	P8	1250.9	153.0			no cool duplicate
22	111	P12	100.7	20.9	20.9		
22	97	P12	2500.5	180.8	180.5		
23	128	P12	9.8	15.0	15.0		
28	155	P16	9.7	19.3	19.3		
30	181	P16	50.9	19.4	19.3		
30	167	P16	1501.6	166.0			no cool duplicate
41	279	P26	9.8	25.3	25.3		
42	253	P26	800.0	137.3	138.0		
61	327	P20	40.4	22.6	22.4		
62	357	P20	75.6	22.4	22.3		
62	348	P20	598.6	117.7	117.9		
62	342	P20	2500.8	176.4	176.6		
74	399	P4	124.4	30.6	30.5		
74	392	P4	600.2	101.7	101.7		
75	422	P4	10.0	10.2	10.2		