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Precision statement for replicate samples drawn from a single Niskin bottle:
The mean difference for Oxygen:Dissolved:Bottle:Volume for the range 0.249 to 6.973 ml/l was 0.009,
k = 46 with 0 outlier(s) removed (where k is the number of duplicates).

Precision analysis and the determination of outliers
Precision was determined by analyzing replicate samples drawn from one Niskin.
Outliers are discarded on the basis of Chauvenet's criteria. The statistic is calculated using the following formula:

$$\sigma = \left[\frac{1}{n-1} \sum_{1}^{n} (x_i - x_m)^2 \right]^{\frac{1}{2}}$$

The maximum deviation, dmax, is compared with the individual residuals from the original concentrations.
If a replicate's residual is greater than dmax, this reading can be rejected based upon Chauvenet's criterion.

Duplicate samples from a single bottle

Event Number	Sample Number	Station	Pressure dbar	Value 1 ml/l	Value 2 ml/l	Rejected yes / no
1	8	SI03	51.7	4.545	4.539	
3	148	P2	106.6	2.124	2.111	
3	153	P2	27.1	6.248	6.242	
15	120	P4	1001.4	0.266	0.284	
15	128	P4	151.9	3.124	3.110	
22	186	P8	2002.3	1.465	1.459	
22	189	P8	1001.2	0.265	0.249	
22	200	P8	76.2	6.704	6.708	
29	234	P12	3001.2	2.296	2.284	
29	243	P12	301.4	2.540	2.529	
29	250	P12	75.5	6.854	6.852	
46	372	P16	3502.2	2.697	2.704	
46	379	P16	802.2	0.346	0.345	
46	393	P16	6.2	6.973	6.963	
61	488	P20	2501.0	1.914	1.911	
61	492	P20	1001.3	0.330	0.338	
61	501	P20	126.9	4.669	4.667	
78	608	P26	2500.8	1.965	1.958	
78	612	P26	1000.8	0.516	0.495	
78	621	P26	126.3	6.922	6.921	
107	815	P4	1001.1	0.278	0.254	
107	823	P4	151.7	3.614	3.621	
107	829	P4	11.5	6.742	6.743	

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Duplicate Niskins at the same pressure

Event Number	Sample Number	Station	Nominal Pressure dbar	Value 1 ml/l	Value 2 ml/l	Rejected yes / no	Comment
3	150/151	P2	75	3.823	3.831		
15	118/119	P4	1250	0.425	0.425		
29	233/234	P12	3000	2.291	2.290		
46	371/372	P16	3500	2.696	2.701		
61	485/486	P26	3500	2.884	2.877		
107	813/814	P4	1250	0.426	0.465	yes	Both values kept, no known problem.

Precision statement for samples drawn from duplicate Niskin bottles:
The mean difference for Oxygen:Dissolved:Bottle:Volume for the range 0.425 to 3.831 ml/l was 0.004,
k = 10 (2 outliers removed) where k is the number of duplicates.

Note: even though the precision statement for samples drawn from duplicate Niskin bottles (not true duplicates) is calculated using the same formula as the precision statement for duplicates samples drawn from one single Niskin, this process is mainly used to identify problem samples and is not being used as a measure of analysis precision.