



Detector Building Solution Preparation Instructions

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Event Supervisors, and teams, in need of guidance on how to prepare accurate solutions for Detector Building may want to use the following instructions. The solutions prepared using these instructions can be used in tournament competition as well as by teams in advance of tournaments to calibrate probes.

These instructions start with a 0.9% saline solution, called Standard Saline, that can be purchased from pharmacies, such as CVS, Walgreens, or Rite-Aid, as well as online from Amazon for approximately \$6.00/500 ml. This approach is recommended because it does not require an accurate balance and the ability to ensure all solid NaCl is dissolved before starting your dilutions. That said, if you have an accurate balance and measuring equipment, you can prepare your stock solution by measuring 9 grams of NaCl into 1000 mL of distilled water.

Preparation of Detector Building Standardized Solutions

1. Combine the amount of 0.9% saline in Column 1 with the amount of Distilled water in Column 2 to prepare a 100 ml of solution at the given NaCl concentration. This solution can be used to fill a 4-ounce souffle cup for testing.

ml of 0.9% Saline Solution	ml of Distilled water	NaCl Concentration (ppm)	Range levels
0	100	0	Low
2	98	180	Low
4	96	360	Low
6	94	540	Low
8	92	720	Low
10	90	900	Low
12	88	1080	Low
14	86	1260	Low
16	84	1440	Low
18	82	1620	Medium
20	80	1800	Medium
22	78	1980	Medium
24	76	2160	Medium
26	74	2340	Medium
28	72	2520	Medium
30	70	2700	Medium
32	68	2880	Medium
34	66	3060	Medium
36	64	3240	High
38	62	3420	High
40	60	3600	High
42	58	3780	High
44	56	3960	High
46	54	4140	High
48	52	4320	High
50	50	4500	High
52	48	4680	High
54	46	4860	High
56	44	5040	High