



## AMMONIA-NITROGEN KIT

SALICYLATE METHOD, OCTA-SLIDE 2, 0-2 ppm

CODE 3304-02

QUANTITY	CONTENTS	CODE
60 mL	*Salicylate Ammonia #1	*3978LWT-H
30 mL	*Salicylate Ammonia #2	*3979WT-G
30 mL	Salicylate Ammonia #3	3982WT-G
2	Test Tubes, plastic, w/caps	0106
1	Ammonia-Nitrogen Octa-Slide 2 Bar, 0-2 ppm, Fresh Water	3441-01-FW
1	Ammonia-Nitrogen Octa-Slide 2 Bar, 0-2 ppm, Salt Water	3441-01-SW
1	Octa-Slide 2 Viewer	1101

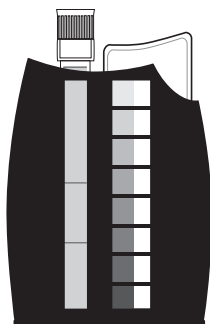
\*WARNING: Reagents marked with an \* are considered to be potential health hazards. To view or print a Safety Data Sheet (SDS) for these reagents go to [www.lamotte.com](http://www.lamotte.com). Search for the four digit reagent code number listed on the reagent label, in the contents list or in the test procedures. Omit any letter that follows or precedes the four digit code number. For example, if the code is 4450WT-H, search 4450. To obtain a printed copy, contact LaMotte by email, phone or fax.

Emergency information for all LaMotte reagents is available from Chem-Tel:  
(US, 1-800-255-3924)  
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To order individual reagents or test kit components, use the specified code number.




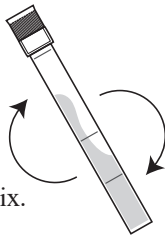

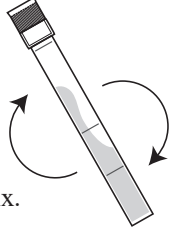
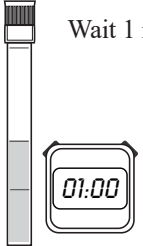

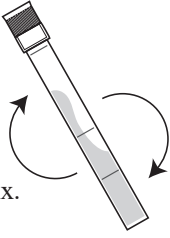
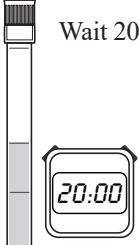

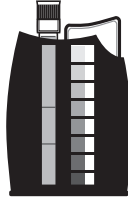
Warning! This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision.

### USE OF THE OCTA-SLIDE 2 VIEWER



The Octa-Slide 2 Viewer should be held so non-direct light enters through the back of the Viewer. Slide the Octa-Slide 2 Bar into the Viewer. Insert the reacted sample into the top of the Viewer. Match the color of the reaction to the color standards.

# PROCEDURE

<p><b>1</b></p>  <p>Insert Ammonia Nitrogen Octa-Slide 2 Bar (3441-01-FW or 3441-01-SW) into the Octa-Slide 2 Viewer (1101).</p>	<p><b>2</b></p>  <p>Fill a test tube (0106) to the 5 mL line with sample water.</p>	<p><b>3</b></p>  <p>Add 10 drops of *Salicylate Ammonia #1 (3978LWT).</p>
<p><b>4</b></p>  <p>Cap and mix.</p>	<p><b>5</b></p>  <p>Add 7 drops of *Salicylate Ammonia #2 (3979WT).</p>	<p><b>6</b></p>  <p>Cap and mix.</p>
<p><b>7</b></p>  <p>Wait 1 minute.</p>	<p><b>8</b></p>  <p>Add 7 drops of Salicylate Ammonia #3 (3982WT).</p>	<p><b>9</b></p>  <p>Cap and mix.</p>
<p><b>10</b></p>  <p>Wait 20 minutes.</p>	<p><b>11</b></p>  <p>Insert test tube into Octa-Slide 2 Viewer (1101).</p>	<p><b>12</b></p>  <p>Match sample color to a color standard. Record as ppm Ammonia Nitrogen (NH<sub>3</sub>-N).</p>

## CONVERSIONS

Ammonia in water occurs in two forms: toxic unionized ammonia ( $\text{NH}_3$ ), and the relatively non-toxic ionized form, ammonium ion ( $\text{NH}_4^+$ ). This test method measures both forms as ammonia-nitrogen ( $\text{NH}_3^+-\text{N}$ ) to give the total ammonia-nitrogen concentration in water. The actual proportion of each compound depends on temperature, salinity, and pH. A greater concentration of unionized ammonia is present when the pH value and salinity increase.

1. Consult the table (next page) to find the percentage that corresponds to the temperature, pH and salinity of the sample.
2. To express the test result as ppm Unionized Ammonia Nitrogen ( $\text{NH}_3-\text{N}$ ), multiply the total ammonia-nitrogen test result by the percentage from the table.
3. To express the test result as ppm Ammonia Nitrogen ( $\text{NH}_3^+-\text{N}$ ), subtract the unionized ammonia-nitrogen determined in Step 2 from the total ammonia-nitrogen.

### Percentage of Free Ammonia as $[\text{NH}_3]$ in Freshwater<sup>1</sup> [FW] and Seawater<sup>2</sup> [SW] at varying pH and Temperature

pH	10°C		15°C		20°C		25°C	
	FW	SW	FW	SW	FW	SW	FW	SW
7.0	0.19		0.27		0.40		0.55	
7.1	0.23		0.34		0.50		0.70	
7.2	0.29		0.43		0.63		0.88	
7.3	0.37		0.54		0.79		1.10	
7.4	0.47		0.68		0.99		1.38	
7.5	0.59	0.459	0.85	0.665	1.24	0.963	1.73	1.39
7.6	0.74	0.577	1.07	0.836	1.56	1.21	2.17	1.75
7.7	0.92	0.726	1.35	1.05	1.96	1.52	2.72	2.19
7.8	1.16	0.912	1.69	1.32	2.45	1.90	3.39	2.74
7.9	1.46	1.15	2.12	1.66	3.06	2.39	4.24	3.43
8.0	1.83	1.44	2.65	2.07	3.83	2.98	5.28	4.28
8.1	2.29	1.80	3.32	2.60	4.77	3.73	6.55	5.32
8.2	2.86	2.26	4.14	3.25	5.94	4.65	8.11	6.61
8.3	3.58	2.83	5.16	4.06	7.36	5.78	10.00	8.18
8.4	4.46	3.54	6.41	5.05	9.09	7.17	12.27	10.10
8.5	5.55	4.41	7.98	6.28	11.18	8.87	14.97	12.40

<sup>1</sup>Freshwater data from Trussel (1972).

<sup>2</sup>Seawater values from Bower and Bidwell (1978).

Salinity of Seawater values = 34% at an ionic strength of 0.701 m.

## FOR EXAMPLE:

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A fresh water sample at 20°C has a pH of 8.5 and the test result is 1.0 ppm as total Ammonia-Nitrogen.

1. The percentage from the table is 11.18% (or 0.1118).
2. 1 ppm total Ammonia-Nitrogen  $\times$  0.1118 = 0.1118 ppm Unionized Ammonia-Nitrogen
3. 

Total Ammonia-Nitrogen		1.0000 ppm
Unionized Ammonia-Nitrogen	-	0.1118 ppm
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Ionized Ammonia-Nitrogen	=	0.8882 ppm

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