



## Operator's Manual:

Charm® II CideLite Test for Pesticides in Water  
For use with Charm II 6600/7600 Analyzers

### Kit Information

#### Introduction

The Charm II CideLite Test for Pesticides in Water is a rapid screening assay (15 minutes) for the detection of N-methylcarbamate (CM) and organophosphate (OP) insecticides. In a single assay the cumulative levels of all CM and OP insecticides and their active metabolites are detected.

The assay uses a specific enzyme / receptor reaction that is sensitive to the presence of CM and OP insecticides. The residual bioactivity is measured with a Charm II analyzer. Negative samples have full activity resulting in high readings, while low readings indicate the presence of CM or OP insecticides.

This procedure is for the detection of pesticides in water. Other procedures are available for tissue, milk, and other food products.

#### Kit Contents and Materials Needed

Supplied with Kits	Disposables	Equipment
<ul style="list-style-type: none"><li>• Tablets W, Y, and Z</li><li>• Buffers W and Z</li><li>• Pesticide-free water</li><li>• Positive Control Tablets</li><li>• 2 ml microtubes with caps</li><li>• 15 ml conical tubes</li><li>• Operator's Manual</li></ul>	<ul style="list-style-type: none"><li>• Borosilicate glass test tubes</li><li>• Test tube stoppers</li><li>• Pipet tips (200 and 1000 µl)</li><li>• 10 ml pipets</li></ul>	<ul style="list-style-type: none"><li>• Charm II system (6000, 6600 or 7600)</li><li>• Fixed volume pipets (50, 100, and 1000 µl)</li></ul>

Charm II equipment available only from Charm Sciences Inc.

For details and ordering information see Order Codes and Kit Contents.

#### Storage

Store Buffer W, Buffer Z, and Pesticide-free Water refrigerated (defined as 0 to 7°C or 0 to 4.4°C for US certified labs). Store Tablet W, Tablet Y, Tablet Z, and Positive Control Tablet at -15°C or below. See Reagents and Storage for details.

#### Training

- Equipment setup and training is required and provided by Charm Sciences Inc or authorized representative.
- For questions contact authorized representative or Charm Sciences at +1.978.687.9200 or [support@charm.com](mailto:support@charm.com).

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## Reagents and Storage

### Buffer W, Buffer Z, and Pesticide-free Water

- Store at room temperature (15 to 25°C) for assay use.
- For extended storage (more than one week), store refrigerated. Always bring buffers and water to room temperature before use.

### Tablet W, Tablet Y, and Tablet Z

- Store at -15°C or below in sealed foil bag.
- Remove from freezer only the amount needed for immediate use.
- One set of Tablet W, Tablet Y, and Tablet Z is used to run up to 7 tests (6 samples and 1 Zero Control).

### Zero Control

- Use Pesticide-free Water as the Zero Control.
- Zero Control must be run with each set of samples. Use 100 µl of Zero Control in Step 1 of Charm II CideLite Test -Procedure.

### Positive Control Standard

- Positive Control Tablets contain 100 ng carbaryl. Store tablets at -15 °C or below.
- To prepare Positive Control Standard (20 ppb or ng/ml carbaryl), add 1 Positive Control Tablet to 5.0 ml Pesticide-free Water in a clean test tube. Cap and invert 20 times to mix well. Let solids settle.
- Important: Use extra care when pipetting Positive Control. Discard pipet tip immediately to avoid contaminating Pesticide-free Water, buffers, or sample tubes.
- Use 100 µl of Positive Control in Step 1 of Charm II CideLite Test - Procedure in place of sample.
- Store reconstituted Positive Control refrigerated or on ice for up to 6 hours.

## Weekly Performance Monitoring

- Weekly, test 3 Zero Controls and 3 Positive Controls to verify that reagents and equipment are working properly.
- Determine the Zero Control Average.

### Specifications for Performance Monitoring

1. Each Zero Control should be within 25% of the Zero Control Average.
2. All Positive Controls should be less than 0.6 x Zero Control Average.
3. If these conditions are not met, retest controls. If conditions are still not met, seek technical assistance from Charm Sciences or authorized representative.

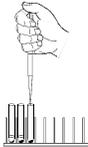
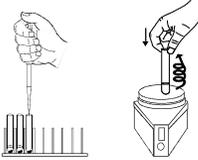
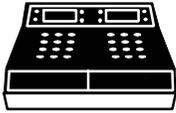
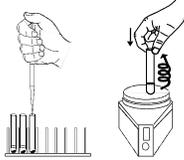
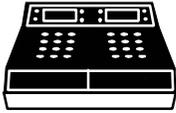
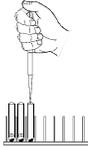
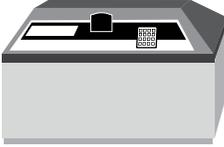
## Precautions

- Do not add extraneous buffers or preservatives to samples, as they may cause interferences.
- Carbonated water samples must be degassed.
- Use only borosilicate glass test tubes. Soda ash and flint glass test tubes will cause erroneous readings. Test tubes supplied by Charm Sciences are specially manufactured to be heavier, with thicker walls.

## Sample and Test Information

- Read the entire procedure, including notes, before performing tests.
- Up to six samples may be run per assay, in addition to the Zero Control.
- Follow pipette method (Forward Technique) as described in Finnpiquette manual.

## Charm II CideLite Test - Procedure

<p>Step 1</p> 	<ul style="list-style-type: none"> <li>Label up to 6 sample test tubes. Label an additional test tube for Zero Control.<sup>1,2</sup> <ul style="list-style-type: none"> <li><sup>1</sup> A Zero Control must be run with each set of samples.</li> <li><sup>2</sup> See Reagents and Storage for use and storage of kit components. First-time users should use one set of tablet reagents for 7 tests (5 samples, 1 Zero Control and 1 Positive Control). Place Positive Control last in reaction order. Positive Control must yield positive result (less than the Control Point).</li> </ul> </li> <li>Using a clean pipet tip for each sample, add 100 µl of water sample or control to each labeled test tube.</li> <li>Add reagents to test tubes in same order throughout the assay.</li> </ul>
<p>Step 2</p> 	<ul style="list-style-type: none"> <li>Prepare Reagent W Solution: To a clean 2 ml microtube, add 1.0 ml Buffer W and one Tablet W (white). To add tablet, remove peelable foil and place in microtube. Cap and mix by inverting 10 times. Let sit for 30 seconds, allowing solids to settle.</li> <li>Add 50 µl Reagent W Solution directly to the bottom of each test tube.<sup>3</sup> Mix 3 times with test tube mixer. <ul style="list-style-type: none"> <li><sup>3</sup> For multiple additions of same reagent, use same pipet tip. Do not pipet solids into assay test tubes. Important: Examine pipet tip while adding reagent to each assay test tube to be sure there are no air bubbles, and that reagent is completely delivered into bottom of each assay test tube. Discard first portion to ensure full delivery to first test tube. To deliver, hold pipette vertically and insert pipette ½ to ¾ into test tube. Avoid contact with sample.</li> </ul> </li> </ul>
<p>Step 3</p> 	<ul style="list-style-type: none"> <li>Place samples in incubator at <math>35 \pm 1^\circ\text{C}</math>. Immediately start timer for 10:00 minutes.</li> <li><u>At 8 minutes of incubation</u>, prepare Reagent Y Solution: To a clean microtube, add 1.0 ml of Pesticide-free Water and one Tablet Y (yellow). Cap and mix by inverting 10 times. Let sit for at least 30 seconds, allowing solids to settle.</li> </ul>
<p>Step 4</p> 	<ul style="list-style-type: none"> <li><u>At 10:00 minutes of incubation</u>, add 50 µl Reagent Y Solution directly to the bottom of each test tube<sup>3</sup> while in the incubator. Mix in order 3 times with mixer and return to incubator at <math>35 \pm 1^\circ\text{C}</math>.</li> </ul>
<p>Step 5</p> 	<ul style="list-style-type: none"> <li>Incubate test tubes at <math>35 \pm 1^\circ\text{C}</math> for 5 minutes (immediately start timer for 5:00 minutes).</li> <li><u>Immediately after starting incubation</u>, prepare Reagent Z Solution: To a clean 15 ml conical tube, add 10.0 ml Buffer Z. Immediately add one Tablet Z (blue). Cap and mix by inverting 10 times. Let solids settle.</li> <li><u>At 4 minutes, 30 seconds of incubation</u>, invert tube of Reagent Z Solution again 5 times. Let solids settle.</li> </ul>
<p>Step 6</p> 	<ul style="list-style-type: none"> <li><u>At 5:00 minutes of incubation</u>, remove test tubes from incubator.</li> <li>Wet pipet tip by withdrawing and returning 1.0 ml of Reagent Z. Add 1.0 ml Reagent Z Solution down the side of each test tube.</li> <li>Complete pipetting of Reagent Z Solution in less than 30 seconds for all test tubes. Cap test tubes. <b>DO NOT MIX!</b></li> </ul>
<p>Step 7</p> 	<ul style="list-style-type: none"> <li>Immediately count test tubes for 5 seconds in Charm II analyzer<sup>4</sup> on LUM channel (button 3). Count all samples within 2 minutes and record RLU (Relative Light Unit) reading for each test tube. <ul style="list-style-type: none"> <li><sup>4</sup> For Charm II 6600 analyzer, press 3. For Charm II 6000 analyzer, set count time to 5 seconds as follows: (1) Press Edit. (2) Press R until time light turns on. (3) Press 5. (4) Press R. (5) Press Stop. Press 2 to count.</li> </ul> </li> <li>Discard remaining hydrated Reagent W, Y and Z Solutions.</li> </ul>

## Control Point

- The Control Point is the cutoff number between a negative and a positive result. A new Control Point must be calculated for each assay set.  
To determine the Control Point, multiply the Zero Control RLU reading by 0.6

## Interpretation of Results

- Negative - Sample RLU result is greater than the Control Point.
- Presumptive Positive - Sample RLU result is less than or equal to the Control Point.
- Retest all presumptive positives with one Zero Control and one Positive Control to confirm results.

## Order Codes and Kit Contents

KITS	NOT SUPPLIED WITH KIT
<p>PST-OC-60-WK:</p> <ul style="list-style-type: none"> <li>(10 each) Tablet W, Tablet Y, Tablet Z</li> <li>(10) Positive Control Tablets</li> <li>(1) Buffer W</li> <li>(1) Buffer Z</li> <li>(3) Pesticide-free Water</li> <li>(20) microtube vials and caps</li> <li>(10) 15 ml conical tubes</li> <li>Operator's Manual</li> </ul> <p>PST-OC-120-WK:</p> <ul style="list-style-type: none"> <li>(20 each) Tablet W, Tablet Y, Tablet Z</li> <li>(20) Positive Control Tablets</li> <li>(2) Buffer W</li> <li>(2) Buffer Z</li> <li>(5) Pesticide-free Water</li> <li>(40) microtube vials and caps</li> <li>(20) 15 ml conical tubes</li> <li>Operator's Manual</li> </ul> <p>PST-OC-600-WK:</p> <ul style="list-style-type: none"> <li>(100 each) Tablet W, Tablet Y, Tablet Z</li> <li>(100) Positive Control Tablets</li> <li>(3) Buffer W</li> <li>(4) Buffer Z</li> <li>(24) Pesticide-free Water</li> <li>(200) microtube vials and caps</li> <li>(100) 15 ml conical tubes</li> <li>Operator's Manual</li> </ul>	<p>CRK-1000 (1 bag of 1000 Corks (caps) for test tubes)</p> <p>TST-250 (1 box of 250 Borosilicate glass test tubes, 13x100 mm)</p> <p>TST-1000 (1 box of 1000 Borosilicate glass test tubes, 13x100 mm)</p> <p>TST-15ML-500 (1 case of 500 Plastic centrifuge tubes, 15 ml)</p> <p>2-MTC-X1 (2 ml microtubes with screw caps, box of 500)</p> <p>100-ULT-X1 (1 box of 96 pipet tips, 2-200 µl)</p> <p>1-MLT-X1 (2 boxes of 100 pipet tips, 200-1000 µl)</p> <p>1-MLT-X4 (10 boxes of 100 pipet tips, 200-1000 µl)</p> <p>PIP-10ML (10 ml disposable pipets, box of 50)</p>

## Warranty Information

Charm Sciences, Inc. ("Charm") warrants each reagent product, including but not limited to test kits, to be free from defects in materials and workmanship and to be free from deviations from the specifications and descriptions of Charm's reagent products appearing in Charm's product literature, when stored under appropriate conditions and given normal, proper and intended usage, until the expiration of such reagent product's stated shelf life, or, if none is stated, for one year from the date of delivery of such reagent product to the end-user purchaser. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER STATUTORY, EXPRESS, IMPLIED (INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE). The warranty provided herein may not be altered except by express written agreement signed by an officer of Charm. Representations, oral or written, which are inconsistent with this warranty are not authorized and if given, should not be relied upon. In the event of a breach of the foregoing warranty, Charm's sole obligation shall be to replace any reagent product or part thereof that proves defective in materials or workmanship within the warranty period, provided the customer notifies Charm promptly of any such defect prior to the expiration of said warranty period. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as Charm is willing to replace any nonconforming reagent product or part. Charm shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damages sustained by any customer from the use of its reagent products. Except for Charm's obligation set forth above to replace any reagent product that proves defective within the warranty period, Charm shall not be liable for any damages of any kind arising out of or caused by any incorrect or erroneous test results obtained while using any such reagent product, whether or not caused by a defect in such reagent product.