



Product Information Diuron ELISA

Enzyme-Linked Immunosorbent Assay for the Determination of Diuron in Water Samples

Product No. 520001

Importance of Diuron Determination

One of the most frequently used herbicides is diuron, it belongs to the class of phenylurea herbicides. They are applied for weed control e.g. on railway lines, roads, parking lots or industrial areas as well as for algae control in fish ponds. It is desirable to check water samples for possible residues of diuron as this herbicide may frequently occur in water and soil.

The diuron ELISA allows the determination of 40 samples in duplicates. Only a few mL of sample are required. The test can be performed in less than 1 hour.

Performance data

Test sensitivity:

The detection limit for diuron is 0.03 µg/L (mean of 6 blank determinations minus 3 standard deviations). The middle of the test (50% B/B₀) is at 0.25 µg/L. Determinations close to the middle of the tests yield the most accurate results.

Test reproducibility:

Coefficients of variation (CVs) for standards: <10%, CVs for samples: <15%.

Selectivity:

The ELISA for diuron recognizes also linuron, chlorbromuron and neburon (CR: >10%).

Cross-reactivities:

	100% (per definition)
diuron	100%
neburon	1250%
chlorbromuron	62.5%
linuron	25%
chlortoluron	7.8%
propafl	4.8%
imonuron	<1%
monolinuron	<1%
fenuron	<1%
bromuron	<1%
isoproturon	<1%
propham	<1%

Cross-reactivities with herbicides different from phenylureas have not been observed.

Samples:

Drinking water, ground water and surface water samples were tested for matrix effects in the ELISA. No matrix effects were determined.

Recovery:

Spiking of samples with different concentrations of diuron (0.05-3 µg/L) yielded a recovery of 80-110%.

General Limited Warranty:

Abraxis LLC warrants the products manufactured by the Company, against defects and workmanship when used in accordance with the applicable instructions for a period not to exceed beyond the product's printed expiration date. Abraxis makes no other warranty, expressed or implied. There is no warranty of merchantability or fitness for a particular purpose.

For ordering or technical assistance contact:

Abraxis LLC
54 Steamwhistle Drive
Warminster, PA 18974
Tel.: (215) 357-3911
Fax: (215) 357-5232
Email: info@abraxiskits.com
WEB: www.abraxiskits.com

R021707

1. General Description

The diuron ELISA is an immunoassay for the sensitive determination of diuron, a phenylurea herbicide. This test is suitable for the determination of diuron in water samples. A previous sample preparation is not required. If required, positive samples can be analyzed by HPLC, GC/MS, or other conventional methods.

2. Safety Instructions

The standard solutions of the test kit contain the herbicide diuron. In addition to this the substrate solution contains tetramethylbenzidine and the stop solution sulfuric acid. Avoid contact of stopping solution with skin and mucous membranes. If this reagent comes in contact with skin wash with water.

3. Storage and Stability

The diuron ELISA has to be stored in the refrigerator (4-8°C). The solutions have to be adjusted to room temperature (20-25°C) before use of the test kit. Reagents may be used until the expiration date on the box.

4. Test Principle

The test is based on the recognition of diuron by specific antibodies. Diuron present in the sample and a phenylurea-enzyme conjugate compete for the binding sites of the antibodies immobilized on the plate. After a washing step and addition of the substrate solution a color signal is produced. The intensity of the blue color is inversely proportional to the concentration of diuron present in the sample. The color reaction is stopped after 20 min and the color is evaluated using an ELISA reader.

5. Limitations of the Diuron ELISA, Possible Test Interference

Water samples may contain a number of various ingredients. Due to the high variability of possible ingredients, test interference caused by matrix effects cannot be completely excluded. Mistakes in handling the test can also cause errors. Possible sources for such errors can be:

Inadequate storage conditions of the test kit, wrong sequence or inaccurate volumes of the reagents, too long or too short incubation times during the immune and/or substrate reaction, extreme outside temperatures during the test performance (lower than 15°C or higher than 30°C).