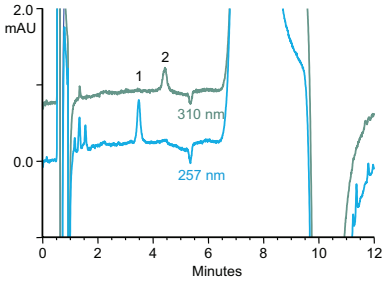
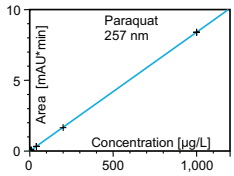
Thermo SCIENTIFIC

Part of Thermo Fisher Scientific

Paraquat and Diquat Using Acclaim Trinity Q1 with UV Detection





Quantification
≥ 10 µg/L Paraquat
≥ 20 µg/L Diquat

Column:	Thermo Scientific™ Acclaim™ Trinity Q1					
Dimensions:	3 µm, 3 × 50 mm					
LC System:	Thermo Scientific™ Dionex™ UltiMate™ 3000					
Mobile Phase A:	Acetonitrile					
Mobile Phase B:	Water					
Mobile Phase C:	100 mM Monobasic ammonium phosphate + 12 mM dibasic ammonium phosphate, pH 5.8					
Gradient Times:	0.0	5.0	5.1	8.0	8.1	12.0
A:	40	40	0	0	40	40
B:	20	20	0	0	20	20
C:	40	40	100	100	40	40
Flow Rate:	0.500 mL/min					
Injection Volume:	50 µL					
Temperature:	30 °C					
Detector:	Diode array, UV 257 nm and 310 nm					
Samples:	Standards in 25% Acetonitrile + 10 mM phosphoric acid					
Peaks:	1. Paraquat 8 µg/L 2. Diquat 8 µg/L					

PB20744_E 02/13S

Paraquat and diquat are cheap and effective broad-spectrum herbicides; they are also highly toxic to most other forms of life. Contamination levels in drinking water and food are regulated. Over the years, many analytical methods have been published, but most suffer from poor chromatography. The Acclaim Trinity Q1 is specifically designed to produce superior chromatography for these two substances, and features short retention times, high capacity, a broad linear range, and excellent resolution. This column may be used with either ammonium acetate buffer for LC/MS applications or with ammonium phosphate buffer for UV detection as shown here. Natural water and food matrixes usually contains calcium and magnesium; these interferences are often concentrated along with the analytes during the sample preparation. They will accumulate on the column and degrade the chromatography, therefore the gradient program includes a wash with 100% buffer to remove them.