



Antec  
Industrieweg 12  
2382 NV Zoeterwoude  
The Netherlands

# ROXY EC system

## Installation requirements

210.7050, Edition 4, 2012



---

Copyright ©2011, Antec, The Netherlands. Contents of this publication may not be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from the copyright of the owner. The information contained in this document is subject to change without notice.

ROXY, ALEXYS, DECADE, DECADE II, INTRO, Flexcell, ISAAC, HyREF are trademarks of Antec. Whatman™ (word and device) and Whatnan™ (word only) are trademarks of Whatman International Ltd. SOLVENT IFD™ and AQUEOUS IFD™ are trademarks of Arbor Technologies, Inc. Clarity®, DataApex® are trademarks of DataApex Ltd. Microsoft® and Windows™ are trademarks of Microsoft Corporation. Excel is a registered trademark of the Microsoft Corporation.

The software and the information provided herein is believed to be reliable. Antec shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of software or this manual. All use of the software shall be entirely at the user's own risk.

---

## Symbols

The following pictogram is used in this installation guide:



Caution, calls attention to a procedure, which, if not correctly executed, could result in damage to the equipment or personal injury. Do not proceed beyond a "CAUTION" sign until the indicated conditions are fully understood and met.

## General precautions



**LC equipments should be used by trained laboratory personnel only. Use proper eye and skin protection when working with solvents. Additional safety requirements or protection may be necessary depending on the chemicals used in combination with this equipment. Make sure that you understand the hazards associated with the chemicals used and take appropriate measures with regards to safety and protection.**

## Table of contents

Symbols	1
General precautions	1
Computer requirements	4
Mass spectrometer requirements	4
Laboratory facilities	5
System consumables	5
Chemicals	5

## General information

In this document the requirements are listed for the installation of the ROXY™ EC system (p/n 210.0070) for use upfront mass spectrometry (MS). The ROXY™ EC system hyphenated with electrospray (ESI)-MS is a dedicated system to simulate oxidative metabolism of drugs and xenobiotics.

This document summarizes all relevant conditions, chemicals and consumables that are required at the customer site for a successful installation of the system. Furthermore, the guideline for a standard system check based on the oxidation of Amodiaquin (for application details please read the application note nr. 210.004: "Oxidative Metabolism of Amodiaquin using ROXY™ EC system") is included in this document.

This document should be send to the customer well in advance of the installation date in order to be able to take the necessary actions. The customer must arrange these necessities before the start of the installation.

**For the latest versions of the Antec manuals and application notes in digital format, please visit our web site: [www.myantec.com](http://www.myantec.com)**



*Fig. 1. Photograph of the ROXY EC system.*

## Computer requirements

### Hardware

The minimal PC hardware requirements for the installation of the ROXY™ EC system in combination with the Dialogue™ for ROXY software are listed in the table below:

Operating System	Microsoft Windows XP/2000/Vista/7 <sup>#</sup>
USB	2 free USB port (USB 2.0)*
Drives	CD-ROM or DVD-ROM
Adobe PDF reader	To read electronic versions of the user manuals
Internet explorer 7.0 or other + internet connection	Accessing the Antec support websites, for updates of software, manuals, troubleshooting.
MS Office (Excel)*	Analysis of Dialogue data in Excel

<sup>#</sup> An US / European Microsoft® Windows™ version is recommended. The Windows operating system should be updated with the latest Service Packs (SP).

\* Necessary for the installation of USB-RS232 converter (with two com ports for syringe pump and ROXY™ Potentiostat) and license dongle.

### Installation precautions

Installation can only be performed by PC users with administrator rights. No screensavers, (USB) hibernate mode, or hard disk shut down (energy saving) should be active.

## Mass spectrometer requirements

The mass spectrometer (MS) can be controlled by the ROXY EC or EC/LC system by contact-closure. The end-user should make sure that all required preparations with respect to the MS are accomplished:

An open-ended IO cable or screw terminal connector should be available on the MS side to connect the ROXY trigger cable.

The MS software should be configured in slave mode to be able to start acquisition controlled via contact closure by means of the Dialogue software.

ROXY EC system should be connected via grounded connection.



**Contact your MS manufacturer for details how to establish contact-closure trigger connection and the grounded connection with the ion source.**

## Laboratory facilities

For the preparation of the LC solutions and standards, access to the proper facilities is a prerequisite (microbalance, pH meter and relevant pH standards, analytical pipettes, pipette tips, tubes, glassware such as measuring cylinders, etc.).

## System consumables

Apart from the items provided with the ReactorCell kit (e.g. polishing slurry and polishing disk), the following consumables are necessary for cleaning of a ReactorCell with GC electrode:

- Soft paper tissue.
- A squeeze bottle with deionized water.
- A squeeze bottle with ethanol/methanol.

## Chemicals

### General

- All relevant chemicals should be available at the lab at the moment of installation to make the mobile phase and the standards, *etc.*
- For EC/MS only chemicals of sufficient specific quality should be used. Note that chemicals that are highly pure (for UV detection) may contain electrochemically active impurities! For example, HPLC grade water (for UV detection) is not recommended for EC detection; use deionized water with a resistivity of 18 megohm-cm.
- See the appendix for detailed descriptions of the chemicals that are use in the Antec R&D laboratory.



## Solutions

At the start of the installation the following solutions are necessary. These solutions should be arranged/prepared in advance by the customer.

- About 250mL of mobile phase (20mM ammonium formate (pH 7.4 adjusted with ammonium hydroxide) in 50% acetonitrile)
- The standards solution (10 $\mu$ M Amodiaquin), diluted from stock solutions (1mM) in mobile phase)

The solution of amodiaquin can be stored for longer time in the 4°C.

*Table 1. Composition of the stock solutions used for analysis of Amodiaquin.*

Stock solution	Composition	Remarks
<b>Mobile phase</b>	20mM ammonium formate (final concentration) 50% acetonitrile pH 7.4	For analysis of amodiaquin
<b>1mM Amodiaquin (stock solution)</b>	Amodiaquin Mobile phase	Should be prepared directly before analysis

The standard should be diluted in the mobile phase to the following concentration:

- 10 $\mu$ M Amodiaquin



**The solutions of amodiaquin in ammonium formate and acetonitrile can be used for evaluation of both the ReactorCell and  $\mu$ -PrepCell.**



## APPENDIX

A list of chemicals is shown below as a guideline for the purchase of chemicals at the customer site. The listed brands/purities are not necessarily the best chemicals, but the applications were evaluated/developed at the Antec R&D laboratory using these specific brands/purities. If for any reason alternative chemicals need to be purchased use the following guidelines:

- The chemicals should have at least the same purity or better than the chemicals listed in the table below
- Do not purchase ultra dry grade or anhydrous chemicals

*Table 2. Brands and purities of chemicals used for application development at Antec.*

Component	Purity	Brand	Order no:	Mw	kg/L
Amodiaquin dihydrochloride dihydrate		Fluka	A2799	464.81	
Ammonium formate	Puriss p.a., for mass spectroscopy	Fluka	70221-25G-F	63.06	
Acetonitrile	HPLC grade, 99.9%	Acros	268260025	41.05	D:0.781
Ammonium hydroxide	Puriss p.a., additive for LC/MS	Fluka	44273	35.05	D:0.9
Water	TOC <10ppb and deionised, resistivity >18 MOhm-cm (Barnstead Easypure II)				

### Manufacturers

Fluka <http://www.sigmaaldrich.com>  
 Fisher Scientific <http://www.fishersci.com>  
 Barnstead <http://www.thermoscientific.com>