

# Explora CN

The Siemens Explora® family of radiochemistry modules offers a comprehensive line of products for efficient PET compound preparation. All modules are computer controlled using a Windows®-based graphical user interface, offering both convenience and flexibility.

The Explora CN uses simple, effective flow chemistry for robust production of  $^{11}\text{C}$ -HCN. The unit also includes conversion of  $^{11}\text{C}$  carbon dioxide to methane.

## Process Description

$^{11}\text{C}$ - $\text{CO}_2$ , produced by the proton irradiation of  $\text{N}_2$  gas mixed with  $\text{O}_2$ , exits the target first by its own pressure, then by helium flow. In the module, the gas from the target passes through a 400 °C furnace containing a Ni/NiO catalyst. In this furnace the  $^{11}\text{C}$ - $\text{CO}_2$  is reduced to  $^{11}\text{C}$ - $\text{CH}_4$  with  $\text{H}_2$  gas. If desired, the  $^{11}\text{C}$ - $\text{CH}_4$  may be used directly from the module for further synthesis steps in other modules or by manual methods.

To produce  $^{11}\text{C}$ -HCN, the  $^{11}\text{C}$ - $\text{CH}_4$  is passed through an Oxisorb™ trap, which removes water and oxygen. Gaseous  $\text{NH}_3$  is added, and the mixture passes through a second furnace, containing a platinum catalyst at 950 °C. This converts  $^{11}\text{C}$ - $\text{CH}_4$  to  $^{11}\text{C}$ -HCN, which exits the module for subsequent use.

## Typical System Performance

Yield of HCN synthesis (decay corrected to EOB)	> 55%
Synthesis time	≤ 10 minutes
Clean-up time	≤ 5 minutes
Time between production runs	≤ 15 minutes

## Dimensions

Width	19 in (48 cm)
Depth	9 in (23 cm)
Height	19 in (48 cm)
Weight	35 lbs (16 kg)

Automated Radiochemistry

[www.siemens.com/medical](http://www.siemens.com/medical)

**SIEMENS**  
medical

The automated chemistry modules are delivered as laboratory equipment for the production of radiochemicals. No claim is made as to the suitability for human use of the products made with these modules. It is the exclusive responsibility of the user to determine if such products can be used for human subjects according to local and federal regulations, and Siemens disclaims all responsibility in this respect.

ISO 13485 certified, meeting internationally recognized quality standards for good manufacturing practices.

Explora is registered trademark of Siemens Medical Solutions USA, Inc.

Windows is a registered trademark of Microsoft Corporation.

Oxisorb is a trademark of Kesser Griesheim GmbH.

Siemens reserves the right to modify the design and specifications contained herein without prior notice. Product performance depends on the choice of system configuration.

Please contact your local Siemens sales representative for the most current information or contact one of the addresses listed below.

© 2006 Siemens Medical Solutions USA, Inc.  
All rights reserved.

All photographs © 2006 Siemens Medical Solutions, USA. All rights reserved.

Note: Original images always lose a certain amount of detail when reproduced.

© 12.2006, Siemens AG  
Order No. A91MI-10049-1T-7600  
Printed in USA  
PA 1206/1

**Address of legal manufacturer**

Siemens Medical Solutions USA, Inc.  
Molecular Imaging  
810 Innovation Drive  
Knoxville, TN 37932-2751  
USA

**Contact Addresses**

Siemens Medical Solutions USA  
Molecular Imaging  
2501 N. Barrington Road  
Hoffman Estates, IL 60192-5203  
USA  
Telephone: +1-888-826-9702  
www.siemens.com/mi

Siemens Medical Solutions USA  
Molecular Imaging  
810 Innovation Drive  
Knoxville, TN 37932-2751  
USA  
Telephone: +1-800-841-7226  
www.siemens.com/mi