

CryoCooler II

AutoChem
accessory

Subambient temperature controller

Features

- Provides subambient sample cooling to $-120\text{ }^{\circ}\text{C}$
- Permits ramping sample temperatures upward from $-120\text{ }^{\circ}\text{C}$ at user-specified rates from 5 to $50\text{ }^{\circ}\text{C}/\text{min}$
- Allows subambient temperatures to be seamlessly transitioned into above-ambient region
- Can be used for rapid furnace cooling to speed analysis



Micromeritics' CryoCooler II accessory for its AutoChem instruments provides sample temperature control from $-120\text{ }^{\circ}\text{C}$ to the instrument maximum of $+1110\text{ }^{\circ}\text{C}$. It permits ramping temperatures at rates from 5 to $50\text{ }^{\circ}\text{C}/\text{minute}$, selectable in $1\text{ }^{\circ}\text{C}/\text{minute}$ in-

crements, while transitioning seamlessly from subambient to above ambient as shown in figure 2. Analyses beginning at subambient temperatures are especially important when characterizing catalysts incorporating noble metals such as platinum and ruthenium.

The CryoCooler II attaches a source of LN_2 directly to the AutoChem furnace and plugs into the instrument control system. All operations thereafter are computer-controlled.

TCD Signal vs Temperature

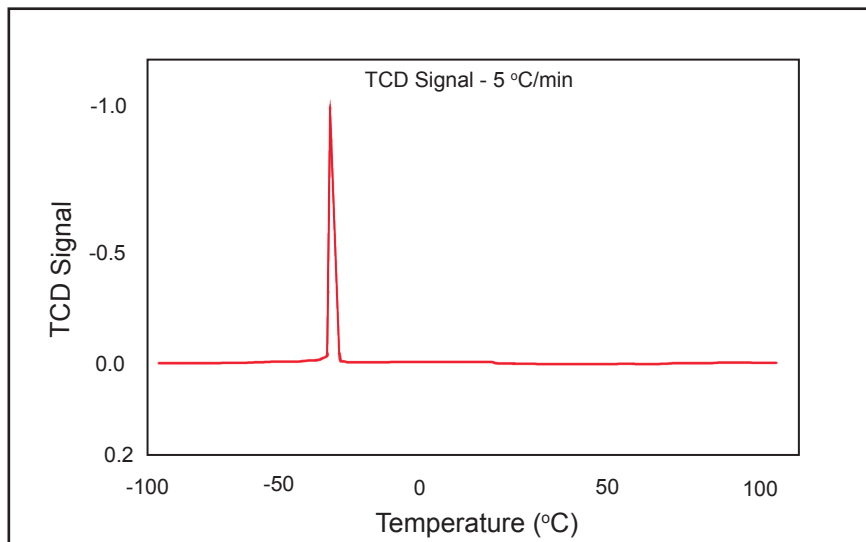


Figure 1

Temperature-programmed reduction of 50% platinum on carbon.

Temperature vs Time

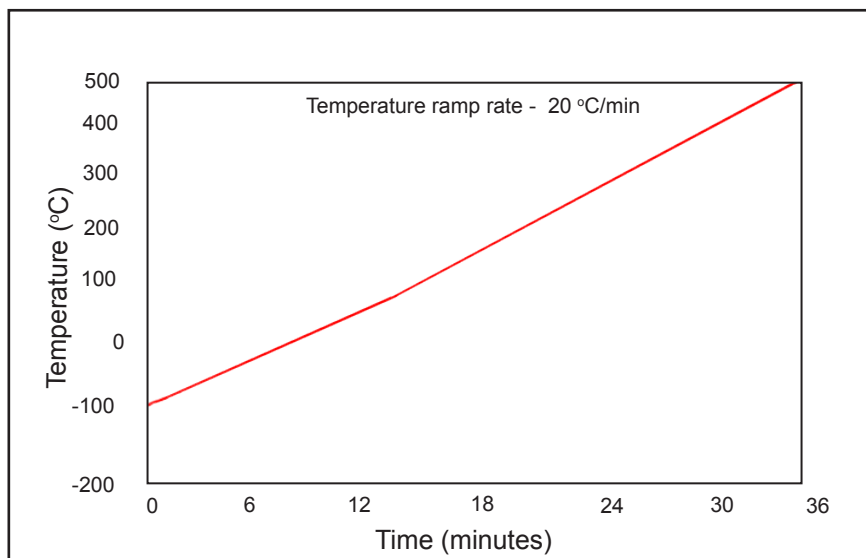


Figure 2

Typical linear temperature profile obtained using the CryoCooler II.