



## NOTICE OF CONTRACT RENEWAL

State Of Missouri  
 Office Of Administration  
 Division Of Purchasing  
 PO Box 809  
 Jefferson City, MO 65102-0809  
<http://oa.mo.gov/purchasing>

B1E12049

CONTRACT NUMBER C112049001	CONTRACT TITLE Gas Chromatographs/Mass Spectrometers
AMENDMENT NUMBER Amendment #005	CONTRACT PERIOD December 9, 2015 through December 8, 2016
REQUISITION NUMBER NY 931 YYY15709244	VENDOR NUMBER 5210359560 0
CONTRACTOR NAME AND ADDRESS SHIMADZU SCIENTIFIC INSTRUMENT 8052 REEDER ST LENEXA KS 66214-1554	STATE AGENCY'S NAME AND ADDRESS Department of Corrections Toxicology Laboratory Fulton, MO 65251
ACCEPTED BY THE STATE OF MISSOURI AS FOLLOWS:  Contract C112049001 is hereby amended pursuant to the attached amendment #005, dated 11/10/15.	
BUYER Tammy Michel	BUYER CONTACT INFORMATION Email: <a href="mailto:Tammy.Michel@oa.mo.gov">Tammy.Michel@oa.mo.gov</a> Phone: (573) 751-3114 Fax: (573) 526-9816
SIGNATURE OF BUYER <i>Tammy Michel</i>	DATE 11/20/15
DIRECTOR OF PURCHASING <i>Karen Boeger</i> Karen Boeger	



STATE OF MISSOURI  
OFFICE OF ADMINISTRATION  
DIVISION OF PURCHASING (PURCHASING)  
CONTRACT RENEWAL

AMENDMENT NO.: 005  
CONTRACT NO.: C112049001  
TITLE: Gas Chromatographs/Mass Spectrometers  
ISSUE DATE: 10/13/15

REQ NO.: NR 931 YYY15709244  
BUYER: Tammy Michel  
PHONE NO.: (573) 751-3114  
E-MAIL: [Tammy.Michel@oa.mo.gov](mailto:Tammy.Michel@oa.mo.gov)

TO: Shimadzu Scientific Instruments  
8052 Reeder St.  
Lenexa, KS 66214

RETURN AMENDMENT NO LATER THAN: 10/27/15 AT 5:00 PM CENTRAL TIME TO THE DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM) BY E-MAIL, FAX, OR MAIL/COURIER:

SCAN AND E-MAIL TO:	<a href="mailto:Casey.Rost@oa.mo.gov">Casey.Rost@oa.mo.gov</a>
FAX TO:	(573) 526-9816
MAIL TO:	DPMM, P.O. Box 809, Jefferson City, Mo 65102-0809
COURIER/DELIVER TO:	DPMM, 301 West High Street, Room 630, Jefferson City, Mo 65101-1517

DELIVER SUPPLIES/SERVICES FOB (Free On Board) DESTINATION TO THE FOLLOWING ADDRESS:

Department of Corrections  
Toxicology Laboratory  
Fulton, MO 65251

SIGNATURE REQUIRED

DOING BUSINESS AS (DBA) NAME Shimadzu Scientific Instruments Inc.		LEGAL NAME OF ENTITY/INDIVIDUAL FILED WITH IRS FOR THIS TAX ID NO. Shimadzu Scientific Instruments Inc.	
MAILING ADDRESS 8052 Reeder St. CITY, STATE, ZIP CODE Lenexa, KS 66214		IRS FORM 1099 MAILING ADDRESS 7102 Riverwood Drive CITY, STATE, ZIP CODE Columbia, MD 21046	
CONTACT PERSON Lonny Ennen		EMAIL ADDRESS LWEnnen@SHIMADZU.com	
PHONE NUMBER 800-477-1227		FAX NUMBER 410-381-1222	
TAXPAYER ID NUMBER (TIN) 52-1035956	TAXPAYER ID (TIN) TYPE (CHECK ONE) <input checked="" type="checkbox"/> FEIN <input type="checkbox"/> SSN		VENDOR NUMBER (IF KNOWN) 5210359560 0
VENDOR TAX FILING TYPE WITH IIN (CHECK ONE) <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> State/Local Government <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Other		(NOTE: LLC IS NOT A VALID TAX FILING TYPE.)	
AUTHORIZED SIGNATURE 		DATE 11/10/15	
PRINTED NAME Lonny Ennen		TITLE Central Area Manager	

**AMENDMENT #005 TO CONTRACT C112049001**

**CONTRACT TITLE:** GAS CHROMATOGRAPHS/MASS SPECTROMETERS

**CONTRACT PERIOD:** DECEMBER 9, 2015 THROUGH DECEMBER 8, 2016

The State of Missouri hereby exercises its option to renew the above-referenced contract.

The contractor shall indicate on the attached pricing page(s) the firm fixed prices for the above contract period. Any price increase quoted must not exceed the maximum percentage increase stated in the contract (20%). The contractor shall understand and agree if the contractor responds with any renewal period pricing increase, such increase may result in a justification request or in the state conducting a new procurement process rather than accepting the contractor's proposed renewal option pricing.

All other terms, conditions and provisions of the contract shall remain the same and apply hereto. The contractor shall sign and return this document, along with completed pricing, on or before the date indicated.

The contractor's failure to complete and return this document shall not stop the action specified herein. If the contractor fails to complete and return this document prior to the return date specified or the effective date of the contract period stated above, whichever is later, the state may renew the contract at the same price(s) as the previous contract period or at the price(s) allowed by the contract, whichever is lower.

**PRICING PAGE**

<b><u>LINE ITEM</u></b>	<b><u>MANDATORY SPECIFICATIONS</u></b>	<b><u>UNIT</u></b>	<b><u>UNIT PRICE</u></b>
001	C/S Code: 49311 <b>Gas Chromatograph/Mass Spectrometer</b> Price to include delivery, installation, a minimum one (1) year manufacturer's warranty, technical support, training, and documentation.  Shimadzu #QP-2010 ULTRA	EA	\$ <u>74,380.94</u>
002	C/S Code: 49311 <b>Specialized Off-Site Training</b>	SESSION	Included w/GCMS
003	C/S Code: 49311 <b>Premium Preventative Maintenance</b>	YR	\$ <u>7,264.00</u>
004	C/S Code: 49311 <b>Full Service Maintenance</b>	YR	\$ <u>10,255.00</u>
005	C/S Code: 49311 <b>GC/MS Repairs</b>	HR	\$ <u>280.00</u>
006	C/S Code: 49311 <b>NIST Mass Spectrum Library</b>	EA	\$ <u>Included</u>
007	C/S Code: 49311 <b>Wiley Registry of Mass Spectral Data</b>	EA	\$ <u>5,557.56</u>
008	C/S Code: 49311 <b>Maurer, Pflieger, Weber Library of Drugs, Poisons and Pesticides</b>	EA	\$ <u>7,125.30</u>
009	C/S Code: 49311 <b>Roughing Pump Oil</b>		\$ <u>28.00</u>
	<b>Filaments</b>		\$ <u>420.00</u>
	<b>Oil Mist Filter</b>		\$ <u>379.00</u>
	<b>Helium Filter</b>		\$ <u>175.00</u>

Purchase Order Preparation by Requisition

Transaction ID: NR 931 YYY15709244  
 Line Number: 001  
 Status: AFZ  
 Requisition Date: 10 / 07 / 15  
 Vendor: 5210353560  
 Manual Method:   
 Print Desktop: Ctrl-P  
 Total Amount:   
 Commodity: 49311  
 Test Flag: Custom  
 Note Pad Indicator:   
 FX Type:   
 Name:   
 New Buyer: 183 80

Description: CHROMATOGRAPHS, GAS

Original Unit Cost	100,000.000000	Unit	YR	Unit Cost	100,000.000000
Discount Code		Discount %	0.00	Discount Amount	0.00
Lot Code				Transportation	0.00
Quantity Requested	1.000			Freight Amount	0.00
				Total Cost	100,000.00

Requisition Text

Transaction ID: NR 931 YYY15709244      Commodity Line Number: 001

TO RENEW A CONTRACT FOR GAS CHROMATOGRAPH/MASS SPECTROMETERS.  
 CONTRACT NUMBER: C112049001  
 CURRENT EXPIRATION DATE: 12/08/2015  
 CONTRACT RENEWAL PERIOD: 12/09/2015 - 12/08/2016

FINAL RENEWAL OPTION

ALL CONTRACTUAL REQUIREMENTS, TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT MUST APPLY DURING THE RENEWAL PERIOD OF THE CONTRACT.

RENEWAL: 4 PERIOD OF 4 TOTAL 0

Renewal - % Increase 20% Cost Savings

Renewal - \$ Increase Cost Savings

Renewal - W/O Increase

SFS Renewal - Prices In Original Contract

SFS Renewal - Prices Not in Original Contract 12/9/15-12/8/16

EXTENSION PERIOD:

Extension - 30-Day

Termination

Extension - \$ Increase Cost Savings

Extension - W/O Increase

Assignment

Cancellation/Termination

Other Amendment

Performance Security Deposit: \$ \_\_\_\_\_

Surety Bond: \$ \_\_\_\_\_

Annual Wage Order Number: \_\_\_\_\_

Annual Wage Order Date: \_\_\_\_\_

County(ies): \_\_\_\_\_

Other Instructions: \_\_\_\_\_

A. Section 34.040.6, RSMo	Buyer/Section Support	lb	10/19
B. Purchasing Suspension List	Buyer/Section Support	_____	_____
C. Federal Suspension - SAM.GOV	Buyer/Section Support	_____	_____
D. Labor Stds - OA/FMDC Contractor Debarment Lists	Buyer/Section Support	_____	_____
E. Review of Participation Commitment Attainment - If app, Verify Receipt of 1 <sup>st</sup> Renewal - Blind/Shel Wkshp Affdvt	Buyer	_____	_____
F. SFS Review/Justification - Insert Advertising Date, if applicable	Buyer	_____	_____
Review/Approve Contract Amendment	Buyer/Section Support	lb	10/19
Review/Approve Contract Amendment	Buyer	lb	10/19
Review/Approve Contract Amendment	Buyer/Section Support	CR	10/13/15
Contractor E-Mail Address/Fax Number	LWEnnen@shimadzu.com		
State Agency Contact E-Mail Address	CindySteinboer/Sam Hammond		
Section 34.040.6, RSMo, Letter	Follow-Up Notes: mailed and notice 11/5/15		
A. Renewal/Extension Pricing	Buyer/Section Support	jm	11/17
B. Section 34.040.6, RSMo	Buyer/Section Support	jm	11/17
C. Performance Security Deposit/Surety Bond	Buyer/Section Support	X	X
D. Renewal/Extension with Cost Savings Language	Buyer	X	X
E. Statewide Notice	Buyer	X	X
F. SFS Authorized Limit \$	Buyer	X	X
G. Contract Assignment/Other Verifications - Complete unless completed in step 2 above			
1. E-Verify Exhibit/Affidavit/Documentation	Buyer/Section Support		
2. Assignment and Consent Form	Buyer/Section Support		
3. Purchasing Suspension List	Buyer/Section Support		
4. Federal Suspension - SAM.GOV	Buyer/Section Support		
5. Labor Stds - OA/FMDC Contractor Debarment Lists	Buyer/Section Support		
Review/Approve Contract Amendment Award Documents	Buyer/Section Support	lb	11-20-15
Review/Approve Contract Amendment Award Documents	Buyer	lb	11-20-15
Review/Approve Contract Amendment	Buyer/Section Support	lb	11-23-15
AM 300 PMM	Buyer/Section Support	lb	11-23-15
Distribute E-Verify & SDV Documents	Buyer/Section Support	X	X
E-Mail/Fax NOA to Contractor/Assignee & Agency Contact	Buyer/Section Support	X	X
Copy/Save As Statewide Notice to Internet Folder	Buyer/Section Support	X	X
10. Participation Commitment Information	Central Support-Participation		
11.1. Image Contract Amendment Packet	Central Support-Imaging		12-18



## NOTICE OF CONTRACT AMENDMENT

State Of Missouri  
Office Of Administration  
Division Of Purchasing And Materials Management  
PO Box 809  
Jeffersou City, MO 65102-0809  
<http://content.oa.mo.gov/purchasing-materials-management>

CONTRACT NUMBER C112049001	CONTRACT TITLE Gas Chromatographs/Mass Spectrometers
AMENDMENT NUMBER 004	CONTRACT PERIOD December 9, 2014 through December 8, 2015
REQUISITION NUMBER N/A	VENDOR NUMBER 5210359560 0
CONTRACTOR NAME AND ADDRESS Shimadzu Scientific Instruments, Inc. 8052 Reeder St. Lenexa, KS 66214-1554	STATE AGENCY'S NAME AND ADDRESS Department of Corrections Toxicology Laboratory Fulton, MO 65251
ACCEPTED BY THE STATE OF MISSOURI AS FOLLOWS:  Contract C112049001 is hereby amended pursuant to the attached amendment #004, dated 05/11/15.	
BUYER Tammy Michel	BUYER CONTACT INFORMATION Email: Tammy.Michel@oa.mo.gov Phone: (573) 751- 3114 Fax: (573) 526-9816
SIGNATURE OF BUYER 	DATE 6/15/15
DIRECTOR OF PURCHASING AND MATERIALS MANAGEMENT  Karen Boeger	



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM)  
 CONTRACT AMENDMENT

AMENDMENT NO.: 004  
 CONTRACT NO.: C112049001  
 TITLE: Gas Chromatographs/Mass Spectrometers  
 ISSUE DATE: 05/11/15

REQ NO.: N/A  
 BUYER: Tammy Michel  
 PHONE NO.: (573) 751-3114  
 E-MAIL: tammy.michel@oa.mo.gov

TO: Shimadzu Scientific Instruments, Inc.  
 8052 Reeder St.  
 Lenexa, KS 66214-1554

RETURN AMENDMENT BY NO LATER THAN: 05/18/15 AT 5:00 PM CENTRAL TIME

RETURN AMENDMENT TO THE DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM)  
 BY E-MAIL, FAX, OR MAIL/COURIER:

SCAN AND E-MAIL TO:	christa.dickneite@oa.mo.gov
FAX TO:	(573) 526-9816
MAIL TO:	DPMM, P.O. Box 809, Jefferson City, Mo 65102-0809
COURIER/DELIVER TO:	DPMM, 301 West High Street, Room 630, Jefferson City, Mo 65101-1517

DELIVER SUPPLIES/SERVICES FOB (Free On Board) DESTINATION TO THE FOLLOWING ADDRESS:

Department of Corrections  
 Toxicology Laboratory  
 Fulton, MO 65251

SIGNATURE REQUIRED

DOING BUSINESS AS (DBA) NAME Shimadzu Scientific Instruments Inc.
MAILING ADDRESS 8052 Reeder St CITY, STATE, ZIP CODE Lenexa, KS 66214

LEGAL NAME OF ENTITY/INDIVIDUAL FILED WITH IRS FOR THIS TAX ID NO. Shimadzu Scientific Instruments Inc.
IRS FORM 1099 MAILING ADDRESS 7102 Riverwood Drive CITY, STATE, ZIP CODE Columbia, MD 21046

CONTACT PERSON Lonny Ennen		EMAIL ADDRESS LWEnnen@SHIMADZU.com	
PHONE NUMBER 800-477-1227		FAX NUMBER 410-381-1222	
TAXPAYER ID NUMBER (TIN) 52-1035956	TAXPAYER ID (TIN) TYPE (CHECK ONE) <input checked="" type="checkbox"/> FEIN <input type="checkbox"/> SSN	VENDOR NUMBER (IF KNOWN)	
VENDOR TAX FILING TYPE WITH IRS (CHECK ONE) <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> State/Local Government <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> IRS Tax-Exempt			
AUTHORIZED SIGNATURE 		DATE 5/13/15	
PRINTED NAME Lonny Ennen		TITLE Central Area Manager	

AMENDMENT #004 TO CONTRACT C112049001

CONTRACT TITLE: GAS CHROMATOGRAPHS/MASS SPECTROMETERS

CONTRACT PERIOD: DECEMBER 9, 2014 THROUGH DECEMBER 8, 2015

The State of Missouri desires to amend the subject contract to include the following language:

**Cooperative Procurement Program:**

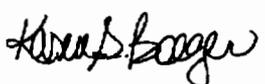
The contractor shall provide gas chromatographs/mass spectrometers as described herein under the terms and conditions, requirements and specifications of the contract, including prices, to other government entities in accordance with the Technical Services Act (section 67.360, RSMo, which is available on the internet at: <http://www.moga.mo.gov/statutes/c000-099/0670000360.htm>.) The contractor shall further understand and agree that participation by other governmental entities is discretionary on the part of that governmental entity and the State of Missouri bears no financial responsibility for any payments due the contractor by such governmental entities.

All other terms, conditions and provisions of the contract, including pricing, shall remain the same and apply hereto. The contractor shall sign and return this document on or before the date indicated.



## NOTICE OF CONTRACT RENEWAL

State Of Missouri  
Office Of Administration  
Division Of Purchasing And Materials Management  
PO Box 809  
Jefferson City, MO 65102-0809  
<http://content.oa.mo.gov/purchasing-materials-management>

<b>CONTRACT NUMBER</b> C112049001	<b>CONTRACT TITLE</b> Gas Chromatographs/Mass Spectrometers
<b>AMENDMENT NUMBER</b> 003	<b>CONTRACT PERIOD</b> December 9, 2014 through December 8, 2015
<b>REQUISITION NUMBER</b> NR 931 YYY14708419	<b>VENDOR NUMBER</b> 5210359560 0
<b>CONTRACTOR NAME AND ADDRESS</b> Shimadzu Scientific Instruments, Inc. 8052 Reeder St. Lenexa, KS 66214-1554	<b>STATE AGENCY'S NAME AND ADDRESS</b> Department of Corrections Toxicology Laboratory Fulton, MO 65251
<b>ACCEPTED BY THE STATE OF MISSOURI AS FOLLOWS:</b>  Contract C112049001 is hereby amended pursuant to the attached amendment #003, dated 09/03/14.	
<b>BUYER</b> Tammy Michel	<b>BUYER CONTACT INFORMATION</b> Email: Tammy.Michel@oa.mo.gov Phone: (573) 751- 3114 Fax: (573) 526-9816
<b>SIGNATURE OF BUYER</b> 	<b>DATE</b> 9/4/14
<b>DIRECTOR OF PURCHASING AND MATERIALS MANAGEMENT</b> 	



STATE OF MISSOURI  
OFFICE OF ADMINISTRATION  
DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM)  
CONTRACT RENEWAL

AMENDMENT NO.: 003  
CONTRACT NO.: C112049001  
TITLE: Gas Chromatographs/Mass Spectrometers  
ISSUE DATE: 09/03/14

REQ NO.: NR 931 YYY14708419  
BUYER: Tammy Michel  
PHONE NO.: (573) 751-3114  
E-MAIL: [Tammy.Michel@oa.mo.gov](mailto:Tammy.Michel@oa.mo.gov)

TO: Shimadzu Scientific Instruments  
8052 Reeder St.  
Lenexa, KS 66214

RETURN AMENDMENT NO LATER THAN: 09/17/14 AT 5:00 PM CENTRAL TIME TO THE DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM) BY E-MAIL, FAX, OR MAIL/COURIER:

SCAN AND E-MAIL TO:	<a href="mailto:Courtney.Rackers@oa.mo.gov">Courtney.Rackers@oa.mo.gov</a>
FAX TO:	(573) 526-9816
MAIL TO:	DPMM, P.O. Box 809, Jefferson City, Mo 65102-0809
COURIER/DELIVER TO:	DPMM, 301 West High Street, Room 630, Jefferson City, Mo 65101-1517

DELIVER SUPPLIES/SERVICES FOB (Free On Board) DESTINATION TO THE FOLLOWING ADDRESS:

Department of Corrections  
Toxicology Laboratory  
Fulton, MO 65251

SIGNATURE REQUIRED

DOING BUSINESS AS (DBA) NAME Shimadzu Scientific Instruments, Inc.		LEGAL NAME OF ENTITY/INDIVIDUAL FILED WITH IRS FOR THIS TAX ID NO. Shimadzu Scientific Instruments, Inc.	
MAILING ADDRESS 8052 Reeder St.		IRS FORM 1099 MAILING ADDRESS 7102 Riverwood Drive	
CITY, STATE, ZIP CODE Lenexa, KS 66221		CITY, STATE, ZIP CODE Columbia, MD 21046	
CONTACT PERSON Lonny Ennen		EMAIL ADDRESS <a href="mailto:lwennen@shimadzu.com">lwennen@shimadzu.com</a>	
PHONE NUMBER 913-888-9449		FAX NUMBER 913-888-8388	
TAXPAYER ID NUMBER (TIN) 52-01035956	TAXPAYER ID (TIN) TYPE (CHECK ONE) <input checked="" type="checkbox"/> FEIN <input type="checkbox"/> SSN		VENDOR NUMBER (IF KNOWN) 5210359560 0
VENDOR TAX FILING TYPE WITH IRS (CHECK ONE) (NOTE: LLC IS NOT A VALID TAX FILING TYPE.) <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> State/Local Government <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Other			
AUTHORIZED SIGNATURE 		DATE 9/3/2014	
PRINTED NAME Lonny Ennen		TITLE Area Manager	

**AMENDMENT #003 TO CONTRACT C112049001**

**CONTRACT TITLE:**           **GAS CHROMATOGRAPHS/MASS SPECTROMETERS**

**CONTRACT PERIOD:**       **DECEMBER 9, 2014 THROUGH DECEMBER 8, 2015**

*The State of Missouri hereby exercises its option to renew the above-referenced contract.*

The contractor shall indicate on the attached pricing page(s) the firm fixed prices for the above contract period. Any price increase quoted must not exceed the maximum percentage increase stated in the contract (**10% Increase**). The contractor shall understand and agree if the contractor responds with any renewal period pricing increase, such increase may result in a justification request or in the state conducting a new procurement process rather than accepting the contractor's proposed renewal option pricing.

All other terms, conditions and provisions of the contract shall remain the same and apply hereto. The contractor shall sign and return this document, along with completed pricing, on or before the date indicated.

The contractor's failure to complete and return this document shall not stop the action specified herein. If the contractor fails to complete and return this document prior to the return date specified or the effective date of the contract period stated above, whichever is later, the state may renew the contract at the same price(s) as the previous contract period or at the price(s) allowed by the contract, whichever is lower.

PRICING PAGE

<u>LINE ITEM</u>	<u>MANDATORY SPECIFICATIONS</u>	<u>UNIT</u>	<u>UNIT PRICE</u>
001	C/S Code: 49311 <b>Gas Chromatograph/Mass Spectrometer</b> Price to include delivery, installation, a minimum one (1) year manufacturer's warranty, technical support, training, and documentation.  Shimadzu #QP-2010 ULTRA	EA	<u>\$ 74,380.94</u>
002	C/S Code: 49311 <b>Specialized Off-Site Training</b>	SESSION	Included w/GCMS
003	C/S Code: 49311 <b>Premium Preventative Maintenance</b>	YR	<u>\$7264.00</u>
004	C/S Code: 49311 <b>Full Service Maintenance</b>	YR	<u>\$10,255.00</u>
005	C/S Code: 49311 <b>GC/MS Repairs</b>	HR	<u>\$280.00</u>
006	C/S Code: 49311 <b>NIST Mass Spectrum Library</b>	EA	<u>\$Included</u>
007	C/S Code: 49311 <b>Wiley Registry of Mass Spectral Data</b>	EA	<u>\$5557.56</u>
008	C/S Code: 49311 <b>Maurer, Pflieger, Weber Library of Drugs, Poisons and Pesticides</b>	EA	<u>\$7125.30</u>
009	C/S Code: 49311 <b>Roughing Pump Oil</b>		<u>\$ 28.00</u>
	<b>Filaments</b>		<u>\$ 420.00</u>
	<b>Oil Mist Filter</b>		<u>\$ 379.00</u>
	<b>Helium Filter</b>		<u>\$ 175.00</u>

RENEWAL: <u>3<sup>rd</sup></u> PERIOD OF <u>4</u> TOTAL	
<input checked="" type="checkbox"/> Renewal - % Increase <u>10%</u> Cost Savings	Performance Security Deposit: \$ _____
<input type="checkbox"/> Renewal - \$ Increase _____ Cost Savings	Surety Bond: \$ _____
<input type="checkbox"/> Renewal - W/O Increase _____	Annual Wage Order Number: _____
<input type="checkbox"/> SFS Renewal - Prices In Original Contract _____	Annual Wage Order Date: _____
<input type="checkbox"/> SFS Renewal - Prices Not in Original Contract _____	County(ies): _____
EXTENSION PERIOD: _____	Other Instructions: _____
<input type="checkbox"/> Extension - 30-Day	
<input type="checkbox"/> Termination	
<input type="checkbox"/> Extension - \$ Increase _____ Cost Savings	
<input type="checkbox"/> Extension - W/O Increase _____	
<input type="checkbox"/> Assignment	
<input type="checkbox"/> Cancellation/Termination	
<input type="checkbox"/> Other Amendment	

A. Section 34.040.6, RSMo	Buyer/Section Support	CR	9/2
B. DPMM Suspension List	Buyer/Section Support	CR	9/2
C. Federal Suspension - SAM.GOV	Buyer/Section Support	CR	9/2
D. Labor Stds - OA/FMDC Contractor Debarment Lists	Buyer/Section Support		
E. Review of Participation Commitment Attainment - If app, Verify Receipt of 1 <sup>st</sup> Renewal - Blind/Sheel Wkshp Affdvt	Buyer		
F. SFS Review/Justification - Insert Advertising Date, if applicable	Buyer		
	Buyer/Section Support	CR	9/2
	Buyer	jm	9/3/14
	Buyer/Section Support	CR	9/3
Contractor E-Mail Address/Fax Number	Wennen@shimadzu.com		
State Agency Contact E-Mail Address	Sam Hammond		
Section 34.040.6, RSMo, Letter	Follow-Up Notes:		
A. Renewal/Extension Pricing	Buyer/Section Support	CR	9/3
B. Section 34.040.6, RSMo	Buyer/Section Support	jm	9/4
C. Performance Security Deposit/Surety Bond	Buyer/Section Support		
D. Renewal/Extension with Cost Savings Language	Buyer		
E. Statewide Notice	Buyer		
F. SFS Authorized Limit \$	Buyer		
G.			
1. E-Verify Exhibit/Affidavit/Documentation	Buyer/Section Support		
2. Assignment and Consent Form	Buyer/Section Support		
3. DPMM Suspension List	Buyer/Section Support		
4. Federal Suspension - SAM.GOV	Buyer/Section Support		
5. Labor Stds - OA/FMDC Contractor Debarment Lists	Buyer/Section Support		
	Buyer/Section Support	CR	9/3
	Buyer		
	Buyer/Section Support	CR	9/4
AM 300 PMM 000 105447	Buyer/Section Support	CR	9/4
Distribute E-Verify & SDV Documents	Buyer/Section Support	X	X
E-Mail/Fax NOA to Contractor/Assignee & Agency Contact	Buyer/Section Support	CR	9/10
Copy/Save As Statewide Notice to Internet Folder	Buyer/Section Support	X	X
	Central Support-Participation		
	Central Support-Imaging	PT	9-22



## NOTICE OF CONTRACT RENEWAL

State of Missouri  
Office of Administration  
Division of Purchasing and Materials Management  
PO Box 809  
Jefferson City, MO 65102  
<http://www.oa.mo.gov/purch>

CONTRACT NUMBER C112049001	CONTRACT TITLE Gas Chromatographs/Mass Spectrometers
AMENDMENT NUMBER 002	CONTRACT PERIOD December 9, 2013 through December 8, 2014
REQUISITION NUMBER NR 931 YYY13708459	VENDOR NUMBER 5210359560 0
CONTRACTOR NAME AND ADDRESS Shimadzu Scientific Instruments 8052 Reeder St. Lenexa, KS 66214	STATE AGENCY'S NAME AND ADDRESS Missouri Department of Corrections Toxicology Laboratory Fulton, MO 65251
ACCEPTED BY THE STATE OF MISSOURI AS FOLLOWS:  Contract C112049001 is hereby amended pursuant to the attached amendment #002, dated 9/12/13.	
BUYER Laurie Borchelt	BUYER CONTACT INFORMATION Email: <a href="mailto:laurie.borchelt@oa.mo.gov">laurie.borchelt@oa.mo.gov</a> Phone: (573) 751-1702 Fax: (573) 526-9816
SIGNATURE OF BUYER 	DATE 9/12/13
DIRECTOR OF PURCHASING AND MATERIALS MANAGEMENT 	



STATE OF MISSOURI  
OFFICE OF ADMINISTRATION  
DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM)  
CONTRACT RENEWAL

AMENDMENT NO.: 002  
CONTRACT NO.: C112049001  
TITLE: Gas Chromatographs/Mass Spectrometers  
ISSUE DATE: 09/12/13

REQ NO.: NR 931 YYY13708459  
BUYER: Laurie Borchelt  
PHONE NO.: (573) 751-1702  
E-MAIL: [laurie.borchelt@oa.mo.gov](mailto:laurie.borchelt@oa.mo.gov)

TO: Shimadzu Scientific Instruments  
8052 Reeder St.  
Lenexa, KS 66214

RETURN AMENDMENT NO LATER THAN: 09/30/13 AT 5:00 PM CENTRAL TIME TO THE DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM) BY E-MAIL, FAX, OR MAIL/COURIER:

SCAN AND E-MAIL TO:	<a href="mailto:laurie.borchelt@oa.mo.gov">laurie.borchelt@oa.mo.gov</a>
FAX TO:	(573) 526-9816
MAIL TO:	DPMM, P.O. Box 809, Jefferson City, Mo 65102-0809
COURIER/DELIVER TO:	DPMM, 301 West High Street, Room 630, Jefferson City, Mo 65101-1517

DELIVER SUPPLIES/SERVICES FOB (Free On Board) DESTINATION TO THE FOLLOWING ADDRESS:

Department of Corrections  
Toxicology Laboratory  
Fulton, MO 65251

SIGNATURE REQUIRED

DOING BUSINESS AS (DBA) NAME Shimadzu Scientific Instruments, Inc.		LEGAL NAME OF ENTITY/INDIVIDUAL FILED WITH IRS FOR THIS TAX ID NO. Shimadzu Scientific Instruments, Inc.	
MAILING ADDRESS 8052 Reeder Road CITY, STATE, ZIP CODE Lenexa, KS 66214		IRS FORM 1099 MAILING ADDRESS 7102 Riverwood Drive CITY, STATE, ZIP CODE Columbia, MD 21046	
CONTACT PERSON Lonny Ennen		EMAIL ADDRESS <a href="mailto:lwennen@shimadzu.com">lwennen@shimadzu.com</a>	
PHONE NUMBER 913-888-9449		FAX NUMBER 913-888-8388	
TAXPAYER ID NUMBER (TIN) 52-1035956	TAXPAYER ID (TIN) TYPE (CHECK ONE) <input checked="" type="checkbox"/> FEIN <input type="checkbox"/> SSN		VENDOR NUMBER (IF KNOWN) 5210359560 0
VENDOR TAX FILING TYPE WITH IRS (CHECK ONE) (NOTE: LLC IS NOT A VALID TAX FILING TYPE.) <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> State/Local Government <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Other			
AUTHORIZED SIGNATURE 		DATE 9/12/12	
PRINTED NAME Lonny Ennen		TITLE Regional Manager	

**AMENDMENT #002 TO CONTRACT C112049001**

**CONTRACT TITLE: GAS CHROMATOGRAPHS/MASS SPECTROMETERS**

**CONTRACT PERIOD: DECEMBER 9, 2013 THROUGH DECEMBER 8, 2014**

The State of Missouri hereby exercises its option to renew the above-referenced contract.

The contractor shall indicate on the attached Pricing Page the firm fixed price for the above contract period. Any price increase quoted must not exceed the maximum percentage increase stated in the contract (10% increase).

The contractor shall understand and agree that due to the state's budgetary constraints, if the contractor responds with any renewal period pricing increase, such increase may result in the state conducting a new procurement process rather than accepting the contractor's proposed renewal option pricing.

All other terms, conditions and provisions of the previous contract period shall remain the same and apply hereto. The contractor shall sign and return this document, along with completed pricing, on or before the date indicated.

The contractor's failure to complete and return this document shall not stop the action specified herein. If the contractor fails to complete and return this document prior to the return date specified or the effective date of the contract period stated above, whichever is later, the state may renew the contract at the same price(s) as the previous contract period or at the price(s) allowed by the contract, whichever is lower.

PRICING PAGE

<u>LINE ITEM</u>	<u>MANDATORY SPECIFICATIONS</u>	<u>UNIT</u>	<u>UNIT PRICE</u>
001	C/S Code: 49311 <b>Gas Chromatograph/Mass Spectrometer</b> Price to include delivery, installation, a minimum one (1) year manufacturer's warranty, technical support, training, and documentation.  Shimadzu #QP-2010 ULTRA	EA	<u>\$74,380.94</u>
002	C/S Code: 49311 <b>Specialized Off-Site Training</b>	SESSION	Included w/GCMS
003	C/S Code: 49311 <b>Premium Preventative Maintenance</b>	YR	<u>\$7,264.00</u>
004	C/S Code: 49311 <b>Full Service Maintenance</b>	YR	<u>\$10,255.00</u>
005	C/S Code: 49311 <b>GC/MS Repairs</b>	HR	<u>\$280.00</u>
006	C/S Code: 49311 <b>NIST Mass Spectrum Library</b>	EA	<u>\$ included</u>
007	C/S Code: 49311 <b>Wiley Registry of Mass Spectral Data</b>	EA	<u>\$5557.56</u>
008	C/S Code: 49311 <b>Maurer, Pflieger, Weber Library of Drugs, Poisons and Pesticides</b>	EA	<u>\$7,125.30</u>
009	C/S Code: 49311 <b>Roughing Pump Oil</b>		<u>\$ 28.00</u>
	<b>Filaments</b>		<u>\$ 420.00</u>
	<b>Oil Mist Filter</b>		<u>\$ 379.00</u>
	<b>Helium Filter</b>		<u>\$ 175.00</u>

DUNS: 080549942 CAGE Code: 01NQ7  
Status: Active

COLUMBIA, MD, 21046-2502,  
UNITED STATES

**Entity Overview**

**Entity Information**  
Name: SHIMADZU SCIENTIFIC INSTRUMENTS, INC.  
Doing Business As: SHIMADZU SCIENTIFIC INSTRS  
Business Type: Business or Organization  
POC Name: None Specified  
Registration Status: Active  
Expiration Date: 11/14/2013

**Exclusions**  
Active Exclusion Records? No

SAM | System for Award Management 1.0

IBM v1.1149.20130801-1829

WWW3

Note to all Users: This is a Federal Government computer system. Use of this system constitutes consent to monitoring at all times.



USA.gov

1. Indicate Contract Amendment Type		Task	Route	Initial	Date
RENEWAL: <u>2</u> PERIOD OF <u>4</u> TOTAL <input checked="" type="checkbox"/> Renewal - % Increase <u>10%</u> Cost Savings <input type="checkbox"/> Renewal - \$ Increase _____ Cost Savings <input type="checkbox"/> Renewal - W/O Increase _____ <input type="checkbox"/> SFS Renewal - Prices In Original Contract <input type="checkbox"/> SFS Renewal - Prices Not in Original Contract					
EXTENSION PERIOD: <input type="checkbox"/> Extension - 30-Day <input type="checkbox"/> Termination <input type="checkbox"/> Extension - \$ Increase _____ Cost Savings <input type="checkbox"/> Extension - W/O Increase _____ <input type="checkbox"/> Assignment <input type="checkbox"/> Cancellation/Termination <input type="checkbox"/> Other Amendment					
Performance Security Deposit: \$ _____ Surety Bond: \$ _____ Annual Wage Order Number: _____ Annual Wage Order Date: _____ County(ies): _____ Other Instructions: _____					
<b>2. Preliminary Tasks/Verifications</b>					
A. Section 34.040.6, RSMo		Buyer/Section Support		WS	9/12/13
B. DPMM Suspension List		Buyer/Section Support		WS	9/12/13
C. Federal Suspension - SAM.GOV		Buyer/Section Support		WS	9/12/13
D. Labor Stds - OA/FMDC Contractor Debarment Lists		Buyer/Section Support		WS	9/12/13
E. Review of Participation Commitment Attainment - If app, Verify Receipt of 1 <sup>st</sup> Renewal - Blind/Shel Wkshp Affdvt		Buyer		X	X
F. SFS Review/Justification - Insert Advertising Date, if applicable		Buyer		X	X
<b>3. Prepare Contract Amendment</b>		Buyer/Section Support		WS	9/12/13
<b>4. Review/Approve Contract Amendment (If Signature Required)</b>		Buyer		X	X
Initial	Supervisor	Section Manager	Asst Director	Director	
Date	9/12/13	X	X	X	
<b>5. E-Mail/Fax Contract Amendment (If Signature Required)</b>		Buyer/Section Support			
Contractor E-Mail Address/Fax Number					
State Agency Contact E-Mail Address					
Section 34.040.6, RSMo, Letter		Follow-Up Notes:			
<b>6. Review Contract Amendment Response - Verifications</b>					
A. Renewal/Extension Pricing		Buyer/Section Support		WS	9/12/13
B. Section 34.040.6, RSMo		Buyer/Section Support		X	X
C. Performance Security Deposit/Surety Bond		Buyer/Section Support		X	X
D. Renewal/Extension with Cost Savings Language		Buyer		X	X
E. Statewide Notice		Buyer		X	X
F. SFS Authorized Limit \$		Buyer		X	X
G. Contract Assignment Only Verifications - Complete unless completed in Step 2 above.					
1. E-Verify Exhibit/Affidavit/Documentation		Buyer/Section Support			
2. Assignment and Consent Form		Buyer/Section Support			
3. DPMM Suspension List		Buyer/Section Support			
4. Federal Suspension - SAM.GOV		Buyer/Section Support			
5. Labor Stds - OA/FMDC Contractor Debarment Lists		Buyer/Section Support			
<b>7. Prepare Contract Amendment Award Document/Statewide Notice</b>		Buyer/Section Support		WS	9/12/13
<b>8. Review/Approve Contract Amendment Award Document</b>		Buyer		X	X
Initial	Supervisor	Section Manager	Asst Director	Director	
Date	9/12/13	X	X	X	
<b>9. Process Contract Amendment</b>		Buyer/Section Support			
AM 300 PMM 000 71580		Buyer/Section Support			9-12
Distribute E-Verify & SDV Documents		Buyer/Section Support			9-12
E-Mail/Fax NOA to Contractor/Assignee & Agency Contact		Buyer/Section Support			X
Copy/Save As Statewide Notice to Internet Folder		Buyer/Section Support			9-12
<b>10. Log Participation Commitment Information</b>		Central Support-Participation			X
<b>11. Image Contract Amendment Packet</b>		Central Support-Imaging			10-23



## NOTICE OF CONTRACT RENEWAL

State of Missouri  
Office of Administration  
Division of Purchasing and Materials Management  
PO Box 809  
Jefferson City, MO 65102  
<http://www.oa.mo.gov/purch>

CONTRACT NUMBER C112049001	CONTRACT TITLE Gas Chromatographs/Mass Spectrometers
AMENDMENT NUMBER 001	CONTRACT PERIOD December 9, 2012 through December 8, 2013
REQUISITION NUMBER NR 931 YYY12708429	VENDOR NUMBER 5210359560 0
CONTRACTOR NAME AND ADDRESS Shimadzu Scientific Instruments 8052 Reeder St. Lenexa, KS 66214	STATE AGENCY'S NAME AND ADDRESS Missouri Department of Corrections Toxicology Laboratory Fulton, MO 65251
ACCEPTED BY THE STATE OF MISSOURI AS FOLLOWS:  Contract C112049001 is hereby amended pursuant to the attached amendment #001, dated 10/03/12.	
BUYER Laurie Borchelt	BUYER CONTACT INFORMATION Email: <a href="mailto:laurie.borchelt@oa.mo.gov">laurie.borchelt@oa.mo.gov</a> Phone: (573) 751-1702 Fax: (573) 526-9816
SIGNATURE OF BUYER 	DATE 10/3/12
DIRECTOR OF PURCHASING AND MATERIALS MANAGEMENT 	



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM)  
 CONTRACT RENEWAL

AMENDMENT NO.: 001  
 CONTRACT NO.: C112049001  
 TITLE: Gas Chromatographs/Mass Spectrometers  
 ISSUE DATE: 10/02/12

REQ NO.: NR 931 YYY12708429  
 BUYER: Laurie Borchelt  
 PHONE NO.: (573) 751-1702  
 E-MAIL: [laurie.borchelt@oa.mo.gov](mailto:laurie.borchelt@oa.mo.gov)

TO: Shimadzu Scientific Instruments  
 8052 Reeder St.  
 Lenexa, KS 66214

RETURN AMENDMENT NO LATER THAN: 10/21/12 AT 5:00 PM CENTRAL TIME TO THE DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM) BY E-MAIL, FAX, OR MAIL/COURIER:

SCAN AND E-MAIL TO:	<a href="mailto:laurie.borchelt@oa.mo.gov">laurie.borchelt@oa.mo.gov</a>
FAX TO:	(573) 526-9816
MAIL TO:	DPMM, P.O. Box 809, Jefferson City, Mo 65102-0809
COURIER/DELIVER TO:	DPMM, 301 West High Street, Room 630, Jefferson City, Mo 65101-1517

DELIVER SUPPLIES/SERVICES FOB (Free On Board) DESTINATION TO THE FOLLOWING ADDRESS:

Department of Corrections  
 Toxicology Laboratory  
 Fulton, MO 65251

SIGNATURE REQUIRED

DOING BUSINESS AS (DBA) NAME <i>Shimadzu Scientific Instruments</i>
MAILING ADDRESS <i>8052 Reeder St</i>
CITY, STATE, ZIP CODE <i>Lenexa, KS 66214</i>

LEGAL NAME OF ENTITY/INDIVIDUAL FILED WITH IRS FOR THIS TAX ID NO. <i>Shimadzu Scientific Instruments</i>
IRS FORM 1099 MAILING ADDRESS <i>7102 Riverwood Dr.</i>
CITY, STATE, ZIP CODE <i>Columbia, MO 21046</i>

CONTACT PERSON <i>Josh Duncan</i>		EMAIL ADDRESS <i>Jdduncan@shimadzu.com</i>	
PHONE NUMBER <i>913-888-9449</i>		FAX NUMBER <i>913-888-8388</i>	
TAXPAYER ID NUMBER (TIN) <i>52-1035956</i>	TAXPAYER ID (TIN) TYPE (CHECK ONE) <input checked="" type="checkbox"/> FEIN <input type="checkbox"/> SSN	VENDOR NUMBER (IF KNOWN) <i>5210359560</i>	
VENDOR TAX FILING TYPE WITH IRS (CHECK ONE) (NOTE: LLC IS NOT A VALID TAX FILING TYPE.) <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> State/Local Government <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Other			
AUTHORIZED SIGNATURE <i>[Signature]</i>		DATE <i>October 3, 2012</i>	
PRINTED NAME <i>Lonny ENNEN</i>		TITLE <i>Regional Manager</i>	

**AMENDMENT #001 TO CONTRACT C112049001**

**CONTRACT TITLE: GAS CHROMATOGRAPHS/MASS SPECTROMETERS**

**CONTRACT PERIOD: DECEMBER 9, 2012 THROUGH DECEMBER 8, 2013**

The State of Missouri hereby exercises its option to renew the above-referenced contract.

The contractor shall indicate on the attached Pricing Page the firm fixed price for the above contract period. Any price increase quoted must not exceed the maximum percentage increase stated in the contract (**5% increase**).

The contractor shall understand and agree that due to the state's budgetary constraints, if the contractor responds with any renewal period pricing increase, such increase may result in the state conducting a new procurement process rather than accepting the contractor's proposed renewal option pricing.

All other terms, conditions and provisions of the previous contract period shall remain the same and apply hereto. The contractor shall sign and return this document, along with completed pricing, on or before the date indicated.

The contractor's failure to complete and return this document shall not stop the action specified herein. If the contractor fails to complete and return this document prior to the return date specified or the effective date of the contract period stated above, whichever is later, the state may renew the contract at the same price(s) as the previous contract period or at the price(s) allowed by the contract, whichever is lower.

**PRICING PAGE**

<b><u>LINE ITEM</u></b>	<b><u>MANDATORY SPECIFICATIONS</u></b>	<b><u>UNIT</u></b>	<b><u>UNIT PRICE</u></b>
001	C/S Code: 49311 <b>Gas Chromatograph/Mass Spectrometer</b> Price to include delivery, installation, a minimum one (1) year manufacturer's warranty, technical support, training, and documentation.  Shimadzu #QP-2010 ULTRA	EA	\$ <u>74,380.</u> <sup>94</sup>
002	C/S Code: 49311 <b>Specialized Off-Site Training</b>	SESSION	Included w/GCMS
003	C/S Code: 49311 <b>Premium Preventative Maintenance</b>	YR	\$ <u>7,264.</u> <sup>-</sup>
004	C/S Code: 49311 <b>Full Service Maintenance</b>	YR	\$ <u>10,255.</u> <sup>-</sup>
005	C/S Code: 49311 <b>GC/MS Repairs</b>	HR	\$ <u>280.</u> <sup>-</sup>
006	C/S Code: 49311 <b>NIST Mass Spectrum Library</b>	EA	\$ <u>Included</u>
007	C/S Code: 49311 <b>Wiley Registry of Mass Spectral Data</b>	EA	\$ <u>5,557.</u> <sup>56</sup>
008	C/S Code: 49311 <b>Maurer, Pflieger, Weber Library of Drugs, Poisons and Pesticides</b>	EA	\$ <u>7,125.</u> <sup>30</sup>
009	C/S Code: 49311 <b>Roughing Pump Oil</b>		\$ <u>28.</u> <sup>00</sup>
	<b>Filaments</b>		\$ <u>420.</u> <sup>00</sup>
	<b>Oil Mist Filter</b>		\$ <u>379.</u> <sup>00</sup>
	<b>Helium Filter</b>		\$ <u>175.</u> <sup>00</sup>

TAXATION DIVISION  
P O BOX 3666  
JEFFERSON CITY MO 65105-3666



*Missouri*  
DEPARTMENT OF REVENUE

Telephone: (573) 751-9268  
Fax: (573) 522-1265  
E-mail: taxclearance@dor.mo.gov

## VENDOR NO TAX DUE

SHIMADZU SCIENTIFIC INSTRUMENT INC  
7102 RIVERWOOD DR  
COLUMBIA MD 21046

DATE ISSUED: OCTOBER 2, 2012  
VALID THROUGH: JANUARY 1, 2013

MISSOURI TAX ID NUMBER: 17090261  
FEDERAL IDENTIFICATION NUMBER: 521035956

The Missouri Department of Revenue certifies that based on the information provided the above listed vendor and its affiliates are properly registered to collect and pay sales and/or use tax in compliance with Section 34.040.6, RSMo. and has fully filed and paid all tax due, including penalties and interest, or does not owe any sales and/or use tax, according to the records of the Department as of October 2, 2012.

This statement of no sales and/or use tax due is valid for 90 days from the date of issuance. This statement does not limit the authority of the Director of Revenue to assess and/or collect liabilities under appeal or that become known to the Department as a result of audit or determination of successor liability.

DIRECTOR OF REVENUE OR DELEGATE  
STATE OF MISSOURI

BY:

A handwritten signature in cursive script that reads "Dwayne Maples".

Dwayne Maples  
Administrator, Business Tax

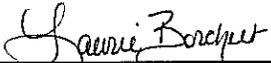
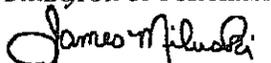
SL:DU0306

CBN045  
201227600300914



## NOTICE OF AWARD

State of Missouri  
Office of Administration  
Division of Purchasing and Materials Management  
PO Box 809  
Jefferson City, MO 65102  
<http://www.oa.mo.gov/purch>

<b>SOLICITATION NUMBER</b> B1E12049	<b>CONTRACT TITLE</b> Gas Chromatographs/Mass Spectrometers
<b>CONTRACT NUMBER</b> C112049001	<b>CONTRACT PERIOD</b> December 9, 2011 through December 8, 2012
<b>REQUISITION NUMBER</b> NR 931 YYY12708016	<b>VENDOR NUMBER</b> 5210359560 0
<b>CONTRACTOR NAME AND ADDRESS</b> Shimadzu Scientific Instruments 8052 Reeder St. Lenexa, KS 66214	<b>STATE AGENCY'S NAME AND ADDRESS</b> Department of Corrections Toxicology Laboratory Fulton, MO
<b>ACCEPTED BY THE STATE OF MISSOURI AS FOLLOWS:</b>  The bid submitted by Shimadzu Scientific Instruments in response to B1E12049, including the attached emails from Joshua Duncan of Shimadzu dated 12/8/11 and 11/10/11, is accepted in its entirety.	
<b>BUYER</b> Laurie Borchelt	<b>BUYER CONTACT INFORMATION</b> Email: <a href="mailto:laurie.borchelt@oa.mo.gov">laurie.borchelt@oa.mo.gov</a> Phone: (573) 751-1702 Fax: (573) 526-9816
<b>SIGNATURE OF BUYER</b> 	<b>DATE</b> 12/9/11
<b>DIRECTOR OF PURCHASING AND MATERIALS MANAGEMENT</b> 	



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF PURCHASING AND MATERIALS MANAGEMENT (DPMM)  
 INVITATION FOR BID (IFB)

IFB NO.: B1E12049  
 TITLE: GAS CHROMATOGRAPH/MASS SPECTROMETER  
 ISSUE DATE: 10/06/11

REQ NO.: NR 931 YYY12708016  
 BUYER: LAURIE BORCHELT  
 PHONE NO.: (573) 751-1702  
 E-MAIL: [laurie.borchelt@oa.mo.gov](mailto:laurie.borchelt@oa.mo.gov)

RETURN BID NO LATER THAN: 10/24/11 AT 2:00 PM CENTRAL TIME

MAILING INSTRUCTIONS: Print or type IFB Number and Return Due Date on the lower left hand corner of the envelope or package. Delivered sealed bids must be in DPMM office (301 W High Street, Room 630) by the return date and time.

(U.S. Mail) RETURN BID TO: DPMM PO BOX 809 JEFFERSON CITY MO 65102-0809	or	(Courier Service) DPMM 301 WEST HIGH STREET, ROOM 630 JEFFERSON CITY MO 65101-1517
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CONTRACT PERIOD: DATE OF AWARD THROUGH ONE YEAR

DELIVER SUPPLIES/SERVICES FOB (Free On Board) DESTINATION TO THE FOLLOWING ADDRESS:

DEPARTMENT OF CORRECTIONS  
 TOXICOLOGY LABORATORY  
 FULTON, MO

The bidder hereby declares understanding, agreement and certification of compliance to provide the items and/or services, at the prices quoted, in accordance with all requirements and specifications contained herein and the Terms and Conditions Invitation for Bid (Revised 10/05/11). The bidder further agrees that the language of this IFB shall govern in the event of a conflict with his/her bid. The bidder further agrees that upon receipt of an authorized purchase order from the Division of Purchasing and Materials Management or when a Notice of Award is signed and issued by an authorized official of the State of Missouri, a binding contract shall exist between the bidder and the State of Missouri.

SIGNATURE REQUIRED

DOING BUSINESS AS (DBA) NAME Shimadzu Scientific Instruments	LEGAL NAME OF ENTITY/INDIVIDUAL FILED WITH IRS FOR THIS TAX ID NO. Shimadzu Scientific Instruments
MAILING ADDRESS 8052 Reeder St.	IRS FORM 1099 MAILING ADDRESS 7102 Riverwood Dr
CITY, STATE, ZIP CODE Lenexa, KS 66214	CITY, STATE, ZIP CODE Columbia, MD 21046

CONTACT PERSON Josh Duncan	EMAIL ADDRESS jdduncan@shimadzu.com	
PHONE NUMBER 913-888-9449	FAX NUMBER 913-888-9449	
TAXPAYER ID NUMBER (TIN) 52-1035956	TAXPAYER ID (TIN) TYPE (CHECK ONE) <input checked="" type="checkbox"/> FEIN <input type="checkbox"/> SSN	VENDOR NUMBER (IF KNOWN) 52103595600
VENDOR TAX FILING TYPE WITH IRS (CHECK ONE) <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Individual <input type="checkbox"/> State/Local Government <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> IRS Tax-Exempt		
AUTHORIZED SIGNATURE 	DATE October 13, 2011	
PRINTED NAME Lonny Ennen	TITLE Regional Manager	

TAXATION DIVISION  
P O BOX 3666  
JEFFERSON CITY MO 65105-3666



*Missouri*  
DEPARTMENT OF REVENUE

Telephone: (573) 751-9268  
Fax: (573) 522-1265  
E-mail: taxclearance@dor.mo.gov

## VENDOR NO TAX DUE

SHIMADZU SCIENTIFIC INSTRUMENT INC  
7102 RIVERWOOD DR  
COLUMBIA MD 21046

DATE ISSUED: DECEMBER 8, 2011  
VALID THROUGH: MARCH 8, 2012

MISSOURI TAX ID NUMBER: 17090261  
FEDERAL IDENTIFICATION NUMBER: 521035956

The Missouri Department of Revenue certifies that based on the information provided the above listed vendor and its affiliates are properly registered to collect and pay sales and/or use tax in compliance with Section 34.040.6, RSMo. and has fully filed and paid all tax due, including penalties and interest, or does not owe any sales and/or use tax, according to the records of the Department as of December 7, 2011.

This statement of no sales and/or use tax due is valid for 90 days from the date of issuance. This statement does not limit the authority of the Director of Revenue to assess and/or collect liabilities under appeal or that become known to the Department as a result of audit or determination of successor liability.

DIRECTOR OF REVENUE OR DELEGATE  
STATE OF MISSOURI

BY:

Dwayne Maples  
Administrator, Business Tax

AD:DUI301

CBN045  
201134200300257

## **Borchelt, Laurie**

---

**From:** Duncan, Joshua [jdduncan@SHIMADZU.com]  
**Sent:** Thursday, December 08, 2011 3:58 PM  
**To:** Borchelt, Laurie  
**Subject:** RE: B1E12049 - Gas Chromatographs/Mass Spectrometers

Yes. The S/N specification for our instrument is greater (better) than the one listed in the bid.

Josh Duncan  
*Shimadzu Scientific Instruments*  
Phone: 877.698.7923 ext. 1282

---

**From:** Borchelt, Laurie [mailto:Laurie.Borchelt@oa.mo.gov]  
**Sent:** Thursday, December 08, 2011 3:47 PM  
**To:** Duncan, Joshua  
**Subject:** B1E12049 - Gas Chromatographs/Mass Spectrometers

One more quick question on the GC/MS bid for Department of Corrections, Toxicology Lab in Fulton, Missouri...

The Shimadzu Responses to Bid Specification Requirements page submitted with your bid in response to paragraph 1.1.7 states, "Mass spectrometer operating mass range 1.5 m/z to 1090 m/z, EI signal-to-noise ratio of >500:1 for 1pg OFN in full scan mode, and signal-to-notice ratio of >160:1 RMS for 100fg OFN at 272 m/z in SIM mode."

Paragraph 4.1.7 requires a EI signal-to-noise ratio of >200:1 for 1pg OFN in full scan mode.

I'm assuming that a >500:1 is better, but please confirm.

Thanks...Laurie

*Laurie Borchelt*  
*State of Missouri*  
*Division of Purchasing and Materials Management*  
*301 West High St., Room 630*  
*Jefferson City, MO 65101*

*Phone: (573) 751-1702*  
*Fax: (573) 526-9816*  
*Email: [laurie.borchelt@oa.mo.gov](mailto:laurie.borchelt@oa.mo.gov)*

## **Borchelt, Laurie**

---

**From:** Duncan, Joshua [jdduncan@SHIMADZU.com]  
**Sent:** Thursday, November 10, 2011 12:48 PM  
**To:** Borchelt, Laurie  
**Cc:** Ennen, Lonny; Jaklevich, Lori  
**Subject:** RE: B1E12049 - Gas Chromatograph/Mass Spectrometer

Laurie,

Good afternoon. Sorry for any confusion with our bid and the bid documents. I take the blame as I thought I had the correct information listed, but may not have implemented as I meant. Regarding your questions/requests:

- We agree to the terms of the IFB.
- We are aware that the pricing listed on the quotation is effective for the full year following the acceptance of the contract per the IFB and State of Missouri, and that the IFB terms supersede the effective dates on the quotation. This was an error on my part to not extend the expiry date, but I was not sure when the official effective date would begin so I arbitrarily chose the end of the year. The IFB in this case will overwrite the effective and expiry dating.
- We agree to the IFB requirement of "All orders must be shipped F.O.B. Destination, Freight Prepaid and Allowed."
- We agree that the IFB document is the de facto language regarding terms and conditions for potential purchase of equipment by Purchaser (State of Missouri) from Vendor/Provider (Shimadzu).

Please let me know if there are any other questions regarding our bid proposal. I sincerely appreciate you taking the time and allowing us to clarify statements made in the bid document.

Thank you and have a great day!

Josh Duncan  
*Shimadzu Scientific Instruments*  
Phone: 877.698.7923 ext. 1282

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**From:** Borchelt, Laurie [<mailto:Laurie.Borchelt@oa.mo.gov>]  
**Sent:** Thursday, November 10, 2011 10:50 AM  
**To:** Duncan, Joshua  
**Subject:** B1E12049 - Gas Chromatograph/Mass Spectrometer

Josh: Thank you very much for your response to the above-referenced solicitation for Gas Chromatographs/Mass Spectrometers for the Missouri Department of Corrections' Toxicology Lab in Fulton, Missouri. I've got a couple of questions regarding your response that warrants clarification.

As indicated on the cover page of the Invitation for Bid, by signing the bid, you hereby declare understanding, agreement and certification of compliance to provide items/services in accordance with all requirements and specifications. You further agree that the language of the IFB shall govern in the event of a conflict with your bid. This is further acknowledged by your signature in response to the "Addendum to Terms and Conditions" section of the Price Page.

Reference the "Contract Period" on the cover page of the IFB. The contract period is "Date of Award through One Year". As indicated in paragraph 5.13.3, "All prices stated shall be considered firm for the duration of the contract period." Section 4 (Preparation of Bids), paragraph h. of the State of Missouri Terms and Conditions states, "Bids, including all pricing therein, shall remain valid for 90 days from bid opening unless otherwise indicated. If the bid is accepted, the entire bid, including all prices, shall be firm for the specified contract period." By signing the bid, you agreed to prices being firm for the contract term (Date of Award through One Year). The quotation submitted with your response, however, indicates an expiration date of 12/30/2011. Please clarify this discrepancy and indicate your understanding and agreement that pricing shall be firm and fixed for the 12-month term of the contract.

Reference also paragraph 3.4.1 of the IFB. This paragraph, in part, states "All orders must be shipped F.O.B. Destination, Freight Prepaid and Allowed." This is also reiterated on the Pricing Page and in Section 4, paragraph g. of the State of Missouri Terms and Conditions. The quotation submitted with your response indicates "Shipping Terms" as "Prepaid and Add". Please clarify this contradiction and indicate your understanding and agreement of the delivery requirements as F.O.B. Destination, Freight Prepaid and Allowed.

Reference your signature in the "Addendum to Terms and Conditions" section of the Pricing Page. Reference also the Shimadzu "General Terms and Conditions of Sale" submitted with your quotation. Please reconfirm your understanding and agreement that the language of the IFB shall govern in the event of a conflict with your response, including any pre-printed terms and conditions submitted with your bid response. Please also reconfirm your understanding and agreement that any terms and conditions submitted that may be in conflict with the IFB's terms and conditions, shall have no force or effect and are therefore considered invalid.

Your response to this request for clarification is appreciated. If you have any questions, please don't hesitate to contact me. Thanks...Laurie

*Laurie Borchelt  
State of Missouri  
Division of Purchasing and Materials Management  
301 West High St., Room 630  
Jefferson City, MO 65101*

*Phone: (573) 751-1702  
Fax: (573) 526-9816  
Email: [laurie.borchelt@on.mo.gov](mailto:laurie.borchelt@on.mo.gov)*

## **1. INTRODUCTION**

### **1.1 Purpose:**

1.1.1 This document constitutes an invitation for sealed bids from prospective bidders for the purchase of a Gas Chromatograph/Mass Spectrometer (GC/MS) for the Missouri Department of Corrections (DOC), Toxicology Laboratory (hereinafter referred to as the "state agency") located in Fulton, Missouri, in accordance with the requirements and provisions stated herein.

### **1.2 Background:**

1.2.1 The Missouri Department of Correction's Toxicology Laboratory performs approximately 8,000 confirmations a year. The Toxicology Laboratory currently confirms Amphetamine, Cocaine, PCP, THC, Opiates, Benzodiazepines, Barbiturates, EtG, and Ketamine.

1.2.2 The Toxicology Laboratory currently owns three (3) Shimadzu QP2010 plus gas chromatograph/mass spectrometers and one (1) Shimadzu QP2010 Ultra.

## **2. CONTRACTUAL REQUIREMENTS**

### **2.1 Contract:**

2.1.1 A binding contract shall consist of: (1) the IFB and any amendments thereto, (2) the contractor's response (bid) to the IFB, (3) clarification of the bid, if any, and (4) the Division of Purchasing and Materials Management's acceptance of the response (bid) by "notice of award". All Exhibits and Attachments included in the IFB shall be incorporated into the contract by reference.

2.1.2 A notice of award issued by the State of Missouri does not constitute an authorization for shipment of equipment or supplies or a directive to proceed with services. Before providing equipment, supplies and/or services for the State of Missouri, the contractor must receive a properly authorized purchase order or other form of authorization given to the contractor at the discretion of the state agency.

2.1.3 The contract expresses the complete agreement of the parties and performance shall be governed solely by the specifications and requirements contained therein.

2.1.4 Any change to the contract, whether by modification and/or supplementation, must be accomplished by a formal contract amendment signed and approved by and between the duly authorized representative of the contractor and the Division of Purchasing and Materials Management prior to the effective date of such modification. The contractor expressly and explicitly understands and agrees that no other method and/or no other document, including correspondence, acts, and oral communications by or from any person, shall be used or construed as an amendment or modification to the contract.

### **2.2 Contract Period:**

2.2.1 The original contract period shall be as stated on page 1 of the Invitation for Bid (IFB). The contract shall not bind, nor purport to bind, the state for any contractual commitment in excess of the original contract period. The Division of Purchasing and Materials Management shall have the right, at its sole option, to renew the contract for four (4) additional one-year periods, or any portion thereof. In the event the Division of Purchasing and Materials Management exercises such right, all terms and conditions, requirements and specifications of the contract shall remain the same and apply during the renewal period, pursuant to applicable option clauses of this document.

**2.3 Renewal Periods:**

- 2.3.1 If the option for renewal is exercised by the Division of Purchasing and Materials Management, the contractor shall agree that the prices for the renewal period shall not exceed the maximum percent of increase for the applicable renewal period stated on the Pricing Page of the contract.
- a. If renewal percentages are not provided, then prices during renewal periods shall be the same as during the original contract period.
  - b. The Division of Purchasing and Materials Management does not automatically exercise its option for renewal based upon the maximum percent of increase and reserves the right to offer or to request renewal of the contract at a price less than the maximum percent of increase stated.

**2.4 Price:**

- 2.4.1 All prices shall be as indicated on the Pricing Page. The state shall not pay nor be liable for any other additional costs including but not limited to taxes, shipping charges, insurance, interest, penalties, termination payments, attorney fees, liquidated damages, etc.

**2.5 Termination:**

- 2.5.1 The Division of Purchasing and Materials Management reserves the right to terminate the contract at any time, for the convenience of the State of Missouri, without penalty or recourse, by giving written notice to the contractor at least thirty (30) calendar days prior to the effective date of such termination. The contractor shall be entitled to receive compensation for services and/or supplies delivered to and accepted by the State of Missouri pursuant to the contract prior to the effective date of termination.

**2.6 Insurance:**

- 2.6.1 The contractor shall understand and agree that the State of Missouri cannot save and hold harmless and/or indemnify the contractor or employees against any liability incurred or arising as a result of any activity of the contractor or any activity of the contractor's employees related to the contractor's performance under the contract. Therefore, the contractor must acquire and maintain adequate liability insurance in the form(s) and amount(s) sufficient to protect the State of Missouri, its agencies, its employees, its clients, and the general public against any such loss, damage and/or expense related to his/her performance under the contract.

**2.7 Payment Terms:**

- 2.7.1 The contractor shall understand and agree the state reserves the right to make contract payments to the contractor through electronic funds transfer (EFT). Therefore, prior to any payments becoming due under the contract, the contractor must return a completed state Vendor ACH/EFT Application, which is downloadable from the Vendor Services Portal at: <https://www.vendorservices.mo.gov/vendorservices/Portal/Default.aspx>. Each contractor invoice must be on the contractor's original descriptive business invoice form and must contain a unique invoice number. The invoice number will be listed on the state's EFT addendum record to enable the contractor to properly apply state payments to invoices. The contractor must comply with all other invoicing requirements stated in the IFB.
- 2.7.2 The contractor may obtain detailed information for payments issued for the past 24 months from the State of Missouri's central accounting system (SAM II) on the Vendor Services Portal at <https://www.vendorservices.mo.gov/vendorservices/Portal/Default.aspx>.
- 2.7.3 All payment terms shall be as stated in the Terms and Conditions of the contract (see paragraph 10, "Invoicing and Payment") unless otherwise addressed in the IFB, or mutually agreed to by the state and the contractor. Payment terms should be net 30 days unless otherwise stated in the IFB. No late charges shall be applied which are not in compliance with Chapter 34.055 RSMo. This statute may be found at <http://www.moga.mo.gov/STATUTES/STATUTES.HTM>.

**2.8 Contractor Liability:**

- 2.8.1 The contractor shall be responsible for any and all personal injury (including death) or property damage as a result of the contractor's negligence involving any equipment or service provided under the terms and conditions, requirements and specifications of the contract. In addition, the contractor assumes the obligation to save the State of Missouri, including its agencies, employees, and assignees, from every expense, liability, or payment arising out of such negligent act. The contractor also agrees to hold the State of Missouri, including its agencies, employees, and assignees, harmless for any negligent act or omission committed by any subcontractor or other person employed by or under the supervision of the contractor under the terms of the contract.
- 2.8.2 The contractor shall not be responsible for any injury or damage occurring as a result of any negligent act or omission committed by the State of Missouri, including its agencies, employees, and assignees.
- 2.8.3 Under no circumstances shall the contractor be liable for any of the following: (1) third party claims against the state for losses or damages (other than those listed above); (2) loss of, or damage to, the state's records or data; or (3) economic consequential damages (including lost profits or savings) or incidental damages, even if the contractor is informed of their possibility.

**2.9 Estimated Quantities:**

- 2.9.1 The quantities indicated in this Invitation for Bid are estimates that pertain to the total aggregate quantities that may be ordered throughout the stated contract period. The estimates do not indicate single order amounts unless otherwise stated. The State of Missouri makes no guarantees about single order quantities or total aggregate order quantities.

**2.10 Federal Funds Requirement:**

- 2.10.1 The contractor shall understand and agree that this procurement may involve the expenditure of federal funds. Therefore, in accordance with the Departments of Labor, Health and Human Services, and Education and Related Agencies Appropriations Act, Public Law 101-166, Section 511, "Steven's Amendment", the contractor shall not issue any statements, press releases, and other documents describing projects or programs funded in whole or in part with Federal money unless the prior approval of the state agency is obtained and unless they clearly state the following as provided by the state agency:
- a. the percentage of the total costs of the program or project which will be financed with Federal money;
  - b. the dollar amount of Federal funds for the project or program; and
  - c. percentage and dollar amount of the total costs of the project or program that will be financed by nongovernmental sources.

**2.11 Inventions, Patents, and Copyrights:**

- 2.11.1 The contractor shall report to the state promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of the contract of which the contractor has knowledge.
- 2.11.2 The state agrees that the contractor has the right to defend or at its option to settle, and the contractor agrees to defend at its own expense or at its option to settle, any claim, suit or proceeding brought against the state on the issue of infringement of any United States patent or copyright by any product, or any part thereof, supplied by the contractor to the state under this agreement. The contractor agrees to pay, subject to the limitations hereinafter set forth in this paragraph, any final judgment entered against the state on such issue in any suit or proceeding defended by the contractor. The state agrees that the contractor at its sole option shall be relieved of the foregoing obligations unless the state notifies the contractor promptly in writing of any such claim, suit, or proceeding, and at the contractor's expense, gives the contractor proper and full information needed to settle and/or to defend any such claim, suit, or proceeding. If the product, or any part thereof, furnished by the contractor to the state becomes, or in the opinion of the contractor may become, the subject of any claim, suit, or proceeding for infringement of any United States patent or copyright, or in the event of any adjudication

that such product or part infringes any United States patent or copyright, or if the use, lease, or sale of such product or part is enjoined, the contractor may, at its option and its expense: (1) procure for the state the right under such patent or copyright to use, lease, or sell as appropriate such product or part, or (2) replace such product or part with other product or part suitable to the state, or (3) suitably modify such product or part, or (4) discontinue the use of such product or part and refund the aggregated payments and transportation costs paid therefore by the state, less a reasonable sum for use and damage. The contractor shall have no liability for any infringement based upon: (1) the combination of such product or part with any other product or part not furnished to the state by the contractor, or (2) the modification of such product or part unless such modification was made by the contractor, or (3) the use of such product or part in manner for which it was not designed.

2.11.3 The contractor shall not be liable for any cost, expense, or compromise, incurred or made by the state in conjunction with any issue of infringement without the contractor's prior written authorization. The foregoing defines the entire warranty by the contractor and the exclusive remedy of the state with respect to any alleged patent infringement by such product or part.

## **2.12 Contractor Status:**

2.12.1 The contractor represents himself or herself to be an independent contractor offering such services to the general public and shall not represent himself/herself or his/her employees to be an employee of the State of Missouri. Therefore, the contractor shall assume all legal and financial responsibility for taxes, FICA, employee fringe benefits, workers compensation, employee insurance, minimum wage requirements, overtime, etc., and agrees to indemnify, save, and hold the State of Missouri, its officers, agents, and employees, harmless from and against, any and all loss; cost (including attorney fees); and damage of any kind related to such matters.

## **2.13 Subcontractors:**

2.13.1 Any subcontracts for the products/services described herein must include appropriate provisions and contractual obligations to ensure the successful fulfillment of all contractual obligations agreed to by the contractor and the State of Missouri and to ensure that the State of Missouri is indemnified, saved, and held harmless from and against any and all claims of damage, loss, and cost (including attorney fees) of any kind related to a subcontract in those matters described in the contract between the State of Missouri and the contractor. The contractor shall expressly understand and agree that he/she shall assume and be solely responsible for all legal and financial responsibilities related to the execution of a subcontract. The contractor shall agree and understand that utilization of a subcontractor to provide any of the products/services in the contract shall in no way relieve the contractor of the responsibility for providing the products/services as described and set forth herein. The contractor must obtain the approval of the State of Missouri prior to establishing any new subcontracting arrangements and before changing any subcontractors. The approval shall not be arbitrarily withheld.

## **2.14 Participation by Other Organizations:**

2.14.1 The contractor must comply with any Organization for the Blind/Sheltered Workshop participation levels committed to in the contractor's awarded bid.

2.14.2 The contractor shall prepare and submit to the Division of Purchasing and Materials Management a report detailing all payments made by the contractor to Organizations for the Blind/Sheltered Workshops participating in the contract for the reporting period. The contractor must submit the report on a monthly basis, unless otherwise determined by the Division of Purchasing and Materials Management.

2.14.3 The Division of Purchasing and Materials Management will monitor the contractor's compliance in meeting the Organizations for the Blind/Sheltered Workshop participation levels committed to in the contractor's awarded bid. If the contractor's payments to the participating entities are less than the amount committed, the state may cancel the contract and/or suspend or debar the contractor from participating in future state procurements, or retain payments to the contractor in an amount equal to the value of the participation

commitment less actual payments made by the contractor to the participating entity. If the Division of Purchasing and Materials Management determines that the contractor becomes compliant with the commitment, any funds retained as stated above, will be released.

- 2.14.4 If a participating entity fails to retain the required certification or is unable to satisfactorily perform, the contractor must obtain other organizations for the blind/sheltered workshops to fulfill the participation requirements committed to in the contractor's awarded bid.
- a. The contractor must obtain the written approval of the Division of Purchasing and Materials Management for any new entities. This approval shall not be arbitrarily withheld.
  - b. If the contractor cannot obtain a replacement entity, the contractor must submit documentation to the Division of Purchasing and Materials Management detailing all efforts made to secure a replacement. The Division of Purchasing and Materials Management shall have sole discretion in determining if the actions taken by the contractor constitute a good faith effort to secure the required participation and whether the contract will be amended to change the contractor's participation commitment.
- 2.14.5 Within thirty days of the end of the original contract period, the contractor must submit an affidavit to the Division of Purchasing and Materials Management. The affidavit must be signed by the director or manager of the participating Organizations for the Blind/Sheltered Workshop verifying provision of products and/or services and compliance of all contractor payments made to the Organizations for the Blind/Sheltered Workshops. The contractor may use the affidavit available on the Division of Purchasing and Materials Management's website at <http://oa.mo.gov/purch/vendor.html> or another affidavit providing the same information.

## **2.15 Contractor's Personnel:**

- 2.15.1 The contractor shall only utilize personnel authorized to work in the United States in accordance with applicable federal and state laws. This includes but is not limited to the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) and INA Section 274A.
- 2.15.2 If the contractor is found to be in violation of this requirement or the applicable state, federal and local laws and regulations, and if the State of Missouri has reasonable cause to believe that the contractor has knowingly employed individuals who are not eligible to work in the United States, the state shall have the right to cancel the contract immediately without penalty or recourse and suspend or debar the contractor from doing business with the state.
- 2.15.3 The contractor shall agree to fully cooperate with any audit or investigation from federal, state, or local law enforcement agencies.

## **2.16 Confidentiality and Security Documents:**

- 2.16.1 If required by the state agency, the contractor and any required contractor personnel must sign specific documents regarding confidentiality, security or other similar documents upon request. Failure of the contractor and any required personnel to sign such documents shall be considered a breach of contract and subject to the cancellation provisions of this document.

## **3. PERFORMANCE REQUIREMENTS**

### **3.1 General:**

- 3.1.1 The contractor shall provide a gas chromatograph/mass spectrometer in accordance with the terms and conditions stated herein. The contractor shall agree that all products and/or services provided under the contract shall conform to all specifications and requirements.

**3.2 Substitutions:**

- 3.2.1 The contractor shall not substitute any item(s) that has been awarded to the contractor without the prior written approval of the Division of Purchasing and Materials Management. Any product substitution must be of equal or better functionality and of equal or lower pricing.
- 3.2.2 The state reserves the right to allow the contractor to substitute any new equipment offered by the contractor on all unshipped and future orders if capabilities and quality are equal to or greater than the equipment under contract and if prices are equal to or less than contract prices. The Division of Purchasing and Materials Management shall be the final authority as to acceptability.

**3.3 Replacement of Damaged Product:**

- 3.3.1 The contractor shall be responsible for replacing any item received in damaged condition at no cost to the State of Missouri. This includes all shipping costs for returning non-functional items to the contractor for replacement.

**3.4 Delivery Performance:**

- 3.4.1 The contractor shall deliver products in accordance with the contracted delivery times stated herein to the state agency upon receipt of an authorized purchase order or P-card transaction notice. Delivery shall include unloading shipments at the state agency's dock and set in place in the lab as designated by the state agency. All orders must be shipped F.O.B. Destination, Freight Prepaid and Allowed. All orders received on the last day of the contract, must be shipped at the contract price. All deliveries must be coordinated with the state agency.

**3.5 Installation/Calibration:**

- 3.5.1 The contractor shall provide for the complete installation/set-up and calibration of the system, including all hardware and software, to the satisfaction of the state agency at no additional cost. The contractor shall schedule installation and calibration of the equipment after delivery at a mutually agreed to time with the state agency.

**3.6 Training:**

- 3.6.1 The contractor must provide one (1) or two (2) day onsite training to state agency personnel at no additional cost to the State of Missouri. The training must include, but is not limited to, fundamentals of GC/MS, tuning of GC/MS, developing GC/MS methods for drugs of abuse testing, method for quantitation, spectral data processing and library searching, system maintenance and troubleshooting procedure, data acquisition, general maintenance and general preventative maintenance, and supervised practical application for one (1) full day of acquiring data from the equipment for at least three (3) drugs of abuse (i.e. Amphetamine, Cocaine and Opiates).

**3.7 Specialized Training:**

- 3.7.1 The contractor must provide a specialized off-site training session at no extra cost to the state agency. The specialized training shall include extensive training and maintenance of the equipment not previously covered under the training provided herein during installation and validation of the equipment.

**3.8 Documentation:**

- 3.8.1 The contractor must provide all necessary operating and maintenance manuals as well as any specialized tools needed to perform general maintenance at no additional cost to the state agency.

**3.9 Warranty:**

- 3.9.1 The contractor shall provide a one (1) year manufacturer's warranty to include labor for defective parts. Warranty shall begin upon complete installation and acceptance of equipment by the State of Missouri.

**4. TECHNICAL SPECIFICATIONS****4.1 Gas Chromatograph/Mass Spectrometer (GC/MS):**

- 4.1.1 The gas chromatograph shall be fully automatic with an oven design that allows easy access to columns.
- 4.1.2 The gas chromatograph's column oven shall:
- Be able to cool from 300 degrees C to 50 degrees C in less than five (5) minutes.
  - Have a programmable temperature to 250 degrees C/min.
  - Have an oven temperature reaching at least 450 degrees C.
  - Have a programming rate range of approximately - 400 to 400 KPa/min.
- 4.1.3 The gas chromatograph must be split/splitless capillary injection design equipped with an autosampler allowing for various injection speeds and must be able to use columns from 0.1 to 0.75 mm inter-diameter in split and splitless modes.
- 4.1.4 The gas chromatograph must have at least 80 sample positions and reproducibility of injection <0.5% RSD for packed columns for 1 uL injections.
- 4.1.5 The gas chromatograph must have pressure and flow program ramps with a flow control rate of up to 1200 ml/min.
- 4.1.6 The mass spectrometer must be quadrupole technology, full serviceable, equipped with solid molybdenum (metallic) alloy rod (or equal) and designed with pre-filter system before the main quadrupole rods. The unit must have easily accessible quadrupole. The system shall have a linear dynamic range of at least  $10^6$  in scan mode. The system should have pre-quads with 60 khz ripple applied for maximum ion transfer through the RF filter and minimize the contamination of the main quads allowing longer operation without maintenance.
- 4.1.7 The mass spectrometer must have an operating mass range within the guideline range from 1.5 m/z to 1090 m/z. Must be able to have an EI signal-to-noise ratio of >200:1 for 1pg OFN in full scan mode, and signal-to-noise ratio of >160:1 RMS for 100fg OFN at 272 m/z in SIM mode.
- 4.1.8 The mass spectrometer must allow the user to change the filament without removing the quadrupole assembly; must be a dual filament system. The ion chamber should be located at the front of the instrument for easy maintenance. The filaments should be two rhenium coil filaments with automatic on/off controls to prevent filament damage.
- 4.1.9 The mass spectrometer must allow the user to remove the inner ion source without removing optical lenses or quadrupole assembly. The ion source must be independently heated from 100 - 300 degrees C selectable from the method. Must be able to set interface from 50 - 350 degrees C.
- 4.1.10 The mass spectrometer's scan rate must be able to set up to 10,000 amu/sec or 50 scans per second in full scan mode.
- 4.1.11 The mass spectrometer's SIM mode should be capable of 64 channels by 64 groups (max.).
- 4.1.12 The mass spectrometer's software must be capable of sorting an adequate number of chromatographic methods, with the appropriate number of ramps and isothermal holds, in order to perform analysis on drugs of abuse with specificity and precision. The instrument should have internally controlled pirani gauge. The detector should be a +/- 10 kv conversion dynode.

- 4.1.13 The mass spectrometer must have a gas saver system. The rotary pump must be a minimum of 304 min standard to 75 L/minute (optional).
- 4.1.14 The mass spectrometer must be able to acquire vacuum within 2 to 4 hours of bringing the system back up. Must have dual flow differential turbo molecular pumps that require no oil so no oil contamination can occur in mass spectrometer (high capacity 179L/sec + 185 L/sec).
- 4.1.15 The mass spectrometer must not require gases (except helium or hydrogen), water, heating, and/or cooling requirements. The carrier gas should be able to maintain a constant linear velocity and control by the GC/MS.
- 4.1.16 The mass spectrometer must have a fully automated system where the capacity to detect a minimum of seven (7) drugs of abuse for a minimum of 100 samples in a 16 hour period using select ion monitoring.
- 4.1.17 The mass spectrometer must have printout (report) capability to provide reportage consisting of at a minimum listing of specimens, identification of test, and test result.
- 4.1.18 The computer/data acquisition system of the GC/MS must include a computer, 22 inch LCD monitor with a resolution of 1024 x 768 or higher, keyboard and mouse; an IBM computer is preferred but not mandatory.
- 4.1.19 The computer system/data acquisition system of the GC/MS must include Windows 2000 operating system (or newer version) on a CPU that is a Pentium IV (2000 MHz) or larger. The CPU must include a read/write CD-ROM for archival of data with a minimum of 512 DDR megabytes of RAM and must have a minimum of 60 GB hard drive. The CPU must have Ethernet interface capability (100 BASE-TX/10 BASE-T).
- 4.1.20 The computer/data acquisition system of the GC/MS must have the ability to acquire scan as well as SIM data on one peak simultaneously with quantitation of both data sets. Both data sets must be contained within the same data file.
- 4.1.21 The computer/data acquisition system of the GC/MS must be able to share existing laser printer via an automatic switch box or the contractor must provide a dedicated laser printer that can print a minimum of 16 pager per minute.
- 4.1.22 The data acquisition software must contain pass/fail evaluation of recovery, degradation check, spectral pattern check etc.
- 4.1.23 The data acquisition software must be able to store change histories of method files, data files, and configuration setting files.

## **5. BIDDERS' INSTRUCTIONS**

### **5.1 Contact:**

- 5.1.1 Any and all communication from bidders regarding specifications, requirements, competitive bid process, etc. related to the bid document must be referred to the buyer identified on the first page of this document. Such communication should be received at least ten (10) calendar days prior to the official bid opening date.

### **5.2 Business Compliance:**

- 5.2.1 The bidder must be in compliance with the laws regarding conducting business in the State of Missouri. The bidder certifies by signing the signature page of this original document and any amendment signature page(s) or by submitting an on-line bid that the bidder and any proposed subcontractors either are presently in compliance with such laws or shall be in compliance with such laws prior to any resulting contract award. The bidder shall provide documentation of compliance upon request by the Division of Purchasing and Materials Management. The compliance to conduct business in the state shall include but may not be limited to:

- Registration of business name (if applicable)
- Certificate of authority to transact business/certificate of good standing (if applicable)
- Taxes (e.g., city/county/state/federal)
- State and local certifications (e.g., professions/occupations/activities)
- Licenses and permits (e.g., city/county license, sales permits)
- Insurance (e.g., worker's compensation/unemployment compensation)

### **5.3 Electronic Bids:**

- 5.3.1 If a Premium registered bidder is responding electronically through the On-Line Bidding/Vendor Registration System website, the Premium registered bidder should submit completed exhibits, forms, and other information concerning the bid as an attachment to the electronic bid. Instructions on how to enter a Premium Registration, how to respond to a bid on-line, and how to submit electronic attachments are available on the On-Line Bidding/Vendor Registration System website at <https://www.moolb.mo.gov>. Be sure to include the bid number, company name, and a contact name on any attachments submitted with the electronic bid.
- 5.3.2 Premium registered bidders submitting electronic and hard copy bid responses which are not identical should explain which response(s) is(are) valid for the state's consideration. In the absence of such explanation, the state reserves the right to evaluate the response which serves its best interest.
- 5.3.3 The exhibits and forms provided herein can be saved into a word processing document of the Premium registered bidder's own creation, completed by the bidder, and then attached to the electronic submission. Other requested or required information should be attached to the electronic bid in whatever format the bidder desires.
- 5.3.4 Specifically the Premium registered bidder should submit the following with the electronic bid as an attachment: Pricing Page; Exhibit A - Bidder's References; Exhibit B - Domestic Products Procurement Act; Exhibits C and D - Blind and Sheltered Workshop Preference (if applicable); Exhibit E - Missouri Service-Disabled Veteran Business Preference (if applicable); Exhibit F - Certification Regarding Debarment; and product information.
- 5.3.5 Exhibits, forms and other information may also be submitted through mail or courier service. However, any such submission should be received prior to the specified closing date and time.

### **5.4 Open Competition:**

- 5.4.1 The bidder may offer any brand of product that meets or exceeds the specifications. In addition to identifying the manufacturer's name and model number, the bidder should explain in detail how their product meets or exceed the specifications. Bids which do not comply with the requirement and the specifications are subject to rejection without clarification.

### **5.5 Description of Product:**

- 5.5.1 The bidder should present a detailed description of all products and services proposed in the response to this Invitation for Bid. It is the bidder's responsibility to make sure all products proposed are adequately described in order to conduct an evaluation of the bid to insure its compliance with mandatory technical specifications. It should not be assumed that the evaluator has specific knowledge of the products proposed; however, the evaluator does have sufficient technical background to conduct an evaluation when presented complete information.

### **5.6 Preprinted Marketing Materials:**

- 5.6.1 The bidder may submit preprinted marketing materials with the bid. However, the bidder is advised that such brochures normally do not address the needs of the evaluators with respect to the technical evaluation process and the specific responses which have been requested of the bidder. The bidder is strongly discouraged from relying on such materials in presenting products and services for consideration by the state.

5.6.2 It is the bidder's responsibility to provide detailed information about how the item bid meets the specifications presented herein. If preprinted marketing materials do not specifically address each specification, the bidder should provide detailed information to assure that the product meets the state's mandatory requirements. In the event this information is not submitted with the bid, the buyer may, but is not required to, seek written clarification from the bidder to provide assurance that the product bid meets specifications.

#### **5.7 Bid Detail Requirements and Deviations:**

5.7.1 It is the bidder's responsibility to submit a bid that meets all mandatory specifications stated herein. The bidder should clearly identify any and all deviations from both the mandatory and desirable specifications stated in the IFB. Any deviation from a mandatory requirement may render the bid non-responsive. Any deviation from a desirable specification may be reviewed by the state as to its acceptability and impact on competition.

5.7.2 Note: A descriptive brochure of the model bid may not be acceptable as clear identification of deviations from the written specification.

#### **5.8 Unit of Measure:**

5.8.1 If the unit of measure specified on the attached pricing pages is different than the manner in which the bidder offers that item, then the unit of measure being proposed by the bidder must be clearly identified on the pricing page. All mathematical conversions should be shown by the bidder, and must be provided upon specific request from the Buyer.

5.8.2 In the cost evaluation, a unit price conversion will be done to fairly evaluate bid prices. However, for any resulting contract, the unit of measure bid will be the unit of measure awarded. Bidders are encouraged to contact the Buyer **prior to** submission of their bid to discuss anticipated unit modifications. The bidder is cautioned that the State of Missouri reserves the right to clarify the unit of measure modification or to disqualify the bid for that line item if the unit of measure modification is not deemed appropriate or in the best interests of the State of Missouri.

#### **5.9 Compliance with Terms and Conditions:**

5.9.1 The bidder's response shall not take exception to or conflict with the mandatory requirements of the IFB (denoted by the words "must" and "shall") including the IFB terms and conditions.

5.9.2 The bidder is cautioned when submitting pre-printed terms and conditions or other documentation regarding proprietary information, copyright, usage restrictions, license agreements, etc., to make sure such documents do not contain other terms and conditions which conflict with those of the IFB and its contractual requirements.

5.9.3 The bidder's terms and conditions, including any pre-printed documents which must be executed in order to provide the goods/services required in the IFB, must be submitted herein. The bidder shall be required to do one of the following if terms and conditions are submitted: (1) The bidder must clearly state on the first page of each of their terms and conditions documents the following, "In the event of conflict between any of the ("name of company") terms and conditions and those contained in the IFB B1E12049, the IFB shall govern" or (2) Sign the signature block under "Addendum to the Bidder's Terms and Conditions" section of the Pricing Page. Failure to place this statement with the bidder's terms and conditions or not signing the "Addendum to Bidder's Terms and Conditions" section of the Pricing Page, and/or taking exception to the State's terms and conditions may render a bidder's bid as non-responsive and remove it from consideration for award.

#### **5.10 Bidder's References:**

5.10.1 On **Exhibit A** the bidder should provide a list of at least three (3) current customers who have acquired and installed the proposed item/service from the bidder. The list should include the following:

Company name  
Contact name  
Contact's title  
City and state  
Telephone number and area code  
Description of items/services  
Availability status if contact is requested by the evaluation team.

#### **5.11 Demonstration of System:**

5.11.1 The bidder may be required to provide a demonstration of his/her system's capabilities at a location within central Missouri and acceptable to the state agency. The demonstration should be constructed to both clarify and verify the bidder's response. Travel expenses incurred by the bidder will be the responsibility of the bidder.

#### **5.12 Question/Answer Conference:**

5.12.1 After an initial screening process, a question and answer conference may be conducted with the bidder, if deemed necessary. In addition, the bidder may be asked to make an oral presentation of their bid during the conference. Attendance cost at the conference shall be at the bidder's own expense. All arrangements and scheduling shall be coordinated by the Division of Purchasing and Materials Management.

#### **5.13 Prices:**

5.13.1 The bidder shall submit a firm, fixed price for the Gas Chromatograph/Mass Spectrometer (line item 001) on the Pricing Page. The prices stated shall include delivery, installation, a minimum one (1) year manufacturer's warranty, facility on-site training, and documentation. All costs necessary to satisfy the requirements of the IFB must be stated. Unless indicated herein, the state shall assume absolutely no other costs exist to satisfy the IFB's requirements. Therefore, the successful bidder shall be responsible for any additional costs.

5.13.2 In addition to the above, the bidder must submit pricing for the following:

- a. Specialized Training (line item 002): The bidder must provide firm, fixed pricing for off-site specialized training. The training must be at a mutually agreed to location.
- b. Premium Preventative Maintenance (line item 003) to include replacing Turbo & roughing pump for MS, if necessary. The bidder must provide a firm, fixed yearly price for an annual preventative maintenance service agreement after the first year of the contract. The bidder should list all that is included in the premium preventative maintenance on the Pricing Page.
- c. Full Service Maintenance (line item 004): The bidder must provide a firm, fixed yearly pricing for a full maintenance service agreement after the first year of the contract. The bidder should list all that is included in the full service maintenance on the Pricing Page.
- d. GC/MS Repairs (line item 005): The bidder must provide a firm, fixed per hour price for necessary repairs after expiration of the warranty.
- e. Additional Features/Options: The bidder must provide firm, fixed prices for the NIST Mass Spectrum Library (line item 006), the Wiley Registry of Mass Spectral Data (line item 007), and the Maurer, Pflieger, Weber Library of Drugs, Poisons & Pesticides (line item 008). In addition, the bidder must state firm, fixed prices for supplies (i.e. oil, filaments, etc.), and any additional features, expansion options, and/or enhancements available on the proposed equipment. These options should be described and priced in the Other Features/Options section (line item 009) of the Pricing Page.

- f. **Renewal Pricing:** The bidder must state any applicable firm, fixed renewal percentage price adjustments for the renewal periods under the Renewal Options section of the Pricing Page (line items 010 through 013).

5.13.3 All prices stated shall be considered firm for the duration of the contract period.

#### **5.14 Cost Evaluation:**

5.14.1 The evaluation shall cover the original contract period plus renewal periods. The cost evaluation shall include all mandatory requirements, including installation, maintenance and training. The State of Missouri reserves the right to evaluate optional items, if deemed necessary.

#### **5.15 Determination for Award:**

5.15.1 The award shall be made to the lowest priced responsive bidder. Other factors that affect the determination of the lowest price responsive bidder include consideration of the Domestic Product Procurement Act, the Blind/Sheltered Workshop Preference, and the Missouri Service Disabled Veterans Preference explained in the paragraphs that follow.

5.15.2 The State of Missouri reserves the right to reject any bid which is determined unacceptable for reasons which may include but are not necessarily limited to: 1) failure of the bidder to meet mandatory general performance specifications; and/or 2) failure of the bidder to meet mandatory technical specifications; and/or, 3) receipt of any information, from any source, regarding delivery of unsatisfactory product or service by the bidder within the past three years. As deemed in its best interests, the State of Missouri reserves the right to clarify any and all portions of any bidder's offer.

#### **5.16 Domestic Product Procurement Act:**

5.16.1 In accordance with the Domestic Product Procurement Act (hereinafter referred to as the Buy American Act) sections 34.350 to 34.359, RSMo, the bidder is advised that any goods purchased or leased by any public agency shall be manufactured or produced in the United States.

5.16.2 Bidders who can certify that goods or commodities to be provided in accordance with the contract are manufactured or produced in the United States or imported in accordance with a qualifying treaty, law, agreement, or regulation shall be entitled to a ten percent (10%) preference over bidders whose products do not qualify.

5.16.3 The requirements of the Buy American Act shall not apply if other exceptions to the Buy American mandate in section 34.353, RSMo, are met.

5.16.4 If the bidder claims there is only one line of the good manufactured or produced in the United States, subsection 2 of section 34.353, RSMo, or that one of the exceptions of subsection 3 of 34.353, RSMo, applies, the Executive Head of the Agency bears the burden of certification as required prior to the award of a contract.

5.16.5 In accordance with the Buy American Act, the bidder must provide proof of compliance with section 34.353, RSMo. Therefore the bidder should complete and return **Exhibit B**, certification regarding proof of compliance, with the bid. This document must be satisfactorily completed prior to an award of a contract.

5.16.6 If the lowest priced bidder qualifies as American-made or in the event all of the bidders or none of the bidders qualify for the Buy American preference, no further calculation is necessary. In the event the lowest priced bidder does not qualify for the Buy American Preference but other bidders do qualify, then the low bidder's price(s) is increased by 10% for those items not eligible for the Buy American Preference.

5.16.7 If any products and/or services offered under this IFB are being manufactured or performed at sites outside the United States, the offeror **MUST** disclose such fact and provide details with the proposal.

**5.17 Preference for Organizations for the Blind and Sheltered Workshops:**

5.17.1 Pursuant to section 34.165, RSMo, a ten (10) bonus point preference shall be granted to bidders including products and/or services manufactured, produced or assembled by a qualified nonprofit organization for the blind established pursuant to 41 U.S.C. sections 46 to 48c or a sheltered workshop holding a certificate of approval from the Department of Elementary and Secondary Education pursuant to section 178.920, RSMo.

5.17.2 In order to qualify for the ten bonus points, the following conditions must be met and the following evidence must be provided:

- a. The bidder must either be an organization for the blind or sheltered workshop or must be proposing to utilize an organization for the blind/sheltered workshop as a subcontractor and/or supplier in an amount that must equal the greater of \$5,000 or 2% of the total dollar value of the contract for purchases not exceeding \$10 million.
- b. The services performed or the products provided by the organization for the blind or sheltered workshop must provide a commercially useful function related to the delivery of the contractually-required service/product in a manner that will constitute an added value to the contract and shall be performed/provided exclusive to the performance of the contract. Therefore, if the services performed or the products provided by the organization for the blind or sheltered workshop is utilized, to any extent, in the bidder's obligations outside of the contract, it shall not be considered a valid added value to the contract and shall not qualify as participation in accordance with this clause.

c. If the bidder is proposing participation by an organization for the blind or sheltered workshop, in order to receive evaluation consideration for participation by the organization for the blind or sheltered workshop, the bidder must provide the following information with the bid:

- Participation Commitment - The bidder must complete **Exhibit C**, Participation Commitment, by identifying the organization for the blind or sheltered workshop, the amount of participation committed, and the commercially useful products/services to be provided by the listed organization for the blind or sheltered workshop. If the bidder submitting the bid is an organization for the blind or sheltered workshop, the bidder must be listed in the appropriate table on the Participation Commitment Form
- Documentation of Intent to Participate - The bidder must either provide a properly completed **Exhibit D**, Documentation of Intent to Participate Form, signed by the organization for the blind or sheltered workshop proposed or must provide a recently dated letter of intent signed by the organization for the blind or sheltered workshop which: (1) must describe the products/services the organization for the blind/sheltered workshop will provide and (2) should include evidence of the organization for the blind/sheltered workshop qualifications (e.g. copy of certificate or Certificate Number for Missouri Sheltered Workshop)

NOTE: If the bidder submitting the bid is an organization for the blind or sheltered workshop, the bidder is not required to complete **Exhibit D**, Documentation of Intent to Participate Form or provide a recently dated letter of intent.

d. A list of Missouri sheltered workshops can be found at the following internet address:

<http://www.dese.mo.gov/divspeced/shelteredworkshops/index.html>.

e. The websites for the Missouri Lighthouse for the Blind and the Alphapointe Association for the Blind can be found at the following Internet addresses:

<http://www.lhbindustries.com>

<http://www.alphapointe.org>

d. Commitment – If the bidder's bid is awarded, the participation committed to by the bidder on **Exhibit C**, Participation Commitment, shall be interpreted as a contractual requirement.

5.17.3 The Blind/Sheltered Workshop Preference required under section 34.165, RSMo, allows for ten (10) bonus points to a qualifying vendor. If the lowest priced bidder qualifies for the preference, or in the event none of the bidders qualify for the preference, no further calculation is necessary.

5.17.4 In the event the lowest priced bidder does not qualify for the preference but other bidders do, then the following evaluation point formula shall apply to determine cost evaluation points:

<u>Lowest Responsive Bidder's Price</u> Compared Bidder's Price	x	200 Maximum Cost Evaluation Points	=	Awarded Cost Evaluation Points
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**5.18 Missouri Service-Disabled Veteran Business Preference:**

5.18.1 Pursuant to section 34.074, RSMo, a three (3) bonus point preference shall be granted to bidders who qualify as Missouri service-disabled veteran businesses and who complete and submit **Exhibit E**, Missouri Service-Disabled Veteran Business Preference with the bid. If the bid does not include the completed Exhibit E and the documentation specified on Exhibit E in accordance with the instructions provided therein, no preference points will be applied.

5.18.2 If the lowest priced bidder qualifies for the preference, or in the event none of the bidders qualify for the preference, no further calculation is necessary.

5.18.3 In the event the lowest priced bidder does not qualify for the preference but other bidders do, then the following evaluation point formula shall apply to determine cost evaluation points:

<u>Lowest Responsive Bidder's Price</u> Compared Bidder's Price	x	200 Maximum Cost Evaluation Points	=	Awarded Cost Evaluation Points
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**5.19 Debarment Certification:**

5.19.1 The bidder certifies by signing the signature page of this original document and any amendment signature page(s) that the bidder is not presently debarred, suspended, proposed for debarment, declared ineligible, voluntarily excluded from participation, or otherwise excluded from or ineligible for participation under federal assistance programs. The bidder should complete and return the attached certification regarding debarment, etc., **Exhibit F** with their bid. This document must be satisfactorily completed prior to award of the contract.

**PRICING PAGE**

The equipment shall conform to the specifications contained herein. The prices stated below shall be considered firm and fixed and shall include all packing, handling, shipping and freight charges FOB Destination, Freight Prepaid and Allowed.

<b><u>LINE ITEM</u></b>	<b><u>MANDATORY SPECIFICATIONS</u></b>	<b><u>EST QTY</u></b>	<b><u>UNIT</u></b>	<b><u>UNIT PRICE</u></b>
001	C/S Code: 49311 <i>Gas Chromatograph</i> Gas Chromatograph/Mass Spectrometer Price to include delivery, installation, a minimum one (1) year manufacturer's warranty, technical support, training, and documentation	2	EA	\$ <u>72,214.50</u>
Bidder to state the following:				
Brand: <u>Shimadzu</u> Model No.: <u>QP-2010 ULTRA</u>				
002	C/S Code: 49311 <i>Gas Chromatograph</i> Specialized Off-Site Training	1	SESSION	\$ <u>0, included with GCMS purchase</u>
003	C/S Code: 49311 <i>Gas Chromatograph</i> Premium Preventative Maintenance (after first year of contract)	1	YR	\$ <u>7,264</u>
Bidder to indicate what is included in the premium preventative maintenance:				
<ul style="list-style-type: none"> <li>• <u>Clean Ion Source Box, Repeller and Ceramics or replace with comparable part.</u></li> <li>• <u>Clean Lens stack and Ceramics.</u></li> <li>• <u>Clean Pre-Rods.</u></li> <li>• <u>Replace Filaments.</u></li> <li>• <u>Perform injector AFC leak check per service manual and repair any leaks.</u></li> <li>• <u>Replace Injection Port O-ring and Glass Insert.</u></li> <li>• <u>Replace Injection Port Septum.</u></li> <li>• <u>Replace carrier gas filters.</u></li> <li>• <u>Replace Column Ferrules if column has been removed.</u></li> <li>• <u>Perform Vacuum Leak Check per SOP. Repair any vacuum leaks due to consumable parts.</u></li> <li>• <u>Change Oil for Rotary Vacuum Pump.</u></li> <li>• <u>Check Run Time for Turbo Pump. If &gt; 25000 hr. of use, will replace Turbo Pump with Rebuilt unit.</u></li> <li>• <u>Reset Consumable counters in the software.</u></li> <li>• <u>Check helium purifier: check the installation date and how many tanks have been used since the purifier was installed; if more than four tanks were used, Replace.</u></li> <li>• <u>Check response for Standard Sample per SOP.</u></li> </ul>				
004	C/S Code: 49311 <i>Gas Chromatograph</i> Full Service Maintenance (after first year of contract)	1	YR	\$ <u>10,255</u>
Bidder to indicate what is included in the full service maintenance:				





State delivery days ARO: 45 days is acceptable

**WARRANTY**

The bidder should state the warranty period which shall cover all equipment. The warranty shall commence upon delivery and acceptance of the equipment/supplies by the State of Missouri.

State warranty period: 1 year from date of completed installation/training

**INSTALLATION**

The bidder should describe the procedure for installing the proposed equipment. The bidder should identify the state's responsibility (if any) and the contractor's responsibility pertaining to the installation.

*Vendor will coordinate installation of equip with State Agency. Vendor will un-pack, set-up and install the instrument. Vendor will provide hands-on-training. Customer is responsible for appropriate MS grade gases and tubing, as requested by vendor, as well as suitable facilities to house instrumentation.*

**EMPLOYEE BIDDING/CONFLICT OF INTEREST**

Bidders who are employees of the State of Missouri, a member of the General Assembly or a statewide elected official must comply with Sections 105.450 to 105.458 RSMo regarding conflict of interest. If the bidder or any owner of the bidder's organization is currently an employee of the State of Missouri, a member of the General Assembly or a statewide elected official, please provide the following information.

Name and title of state employee, General Assembly member or statewide elected official: \_\_\_\_\_

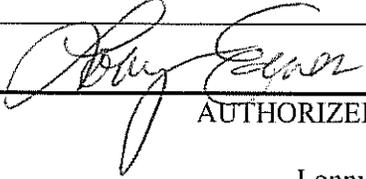
Name of state agency where employed: \_\_\_\_\_

Percentage of ownership interest in bidder's organization held by state employee, General Assembly member or statewide elected official: \_\_\_\_\_%

**ADDENDUM TO TERMS AND CONDITONS**

By signing the signature block below, the bidder hereby declares understanding and agreement with the following: (1) that the language of this IFB shall govern in the event of a conflict with his/her response, including any pre-printed terms and conditions documents that are submitted as part of his/her response, and (2) that any of the bidder's terms and conditions contained in the submitted response or pre-printed terms and conditions documents that conflict with the IFB's terms and conditions, shall have no force or effect and are hereby considered invalid. All other terms and provisions of the bidder's response or pre-printed terms and conditions documents that are not in conflict with the IFB shall apply hereto.

**(SIGNATURE REQUIRED)**

	<u>10/19/11</u>
AUTHORIZED SIGNATURE	DATE
Lonny Ennen	Regional Manager
PRINTED NAME	TITLE
Shimadzu Scientific Instruments	
BIDDER'S COMPANY NAME	

**EXHIBIT A**

**BIDDER'S REFERENCES**

1. Company Name: American Bottoms
  2. Contact Name: Josh Kathrinus
  3. Contact's Title: Laboratory Supervisor
  4. City: Sauget State: IL
  5. Telephone Number and Area Code: (618) 337-1710
  6. Description of Equipment/Services Furnished: GCMS QP-2010 Plus
  7. Availability status of Reference: Available via email and phone.
- 

1. Company Name: University of Minnesota – Twin Cities
  2. Contact Name: Yanhong Dong
  3. Contact's Title: Lab Supervisor
  4. City: Saint Paul State: MN
  5. Telephone Number and Area Code: (612) 625-2751
  6. Description of Equipment/Services Furnished: GCMS QP-2010 and QP-2010 Plus
  7. Availability of Reference: Phone
- 

1. Company Name: Missouri State Highway Patrol
  2. Contact Name: Michael Baker
  3. Contact's Title: Trace Evidence Supervisor
  4. City: Springfield State: MO
  5. Telephone Number and Area Code: (417) 868-9440 x4458
  6. Description of Equipment Furnished: GCMS QP-2010S
  7. Availability of Reference: M-F days
-

**EXHIBIT B**

**STATE OF MISSOURI -- OFFICE OF ADMINISTRATION  
DOMESTIC PRODUCTS PROCUREMENT ACT (BUY AMERICAN)**

The Missouri Domestic Products Procurement Act (sections 34.350 to 34.359, RSMo) requires that for all bids with a value of \$25,000 or more, the goods or commodities purchased by any public agency or used or supplied in the construction, alteration, repair, or maintenance of any public works must be **manufactured or produced** in the United States. As defined in section 34.350, RSMo, United States means the United States of America, the District of Columbia, and all territories and possessions subject to the jurisdiction of the United States. The law also requires that the bidder must provide proof of compliance. **Note: In general, if an import tariff is applied to an item, it does not qualify for the Buy American preference. In addition, Most Favored Nation status does not allow application of the preference.**

**Section A – All Products Are Manufactured or Produced In U.S.**

If all products bid qualify as domestic products under Missouri law, complete only Section A.

I hereby certify that all products qualify as domestic, that the information provided is true and correct, and complies with all provisions of sections 34.350 to 34.359, RSMo. I understand that any misrepresentation herein constitutes the commission of a class A misdemeanor.

SIGNATURE (If submitting bid electronically, typed signature required).

COMPANY NAME

Shimadzu Scientific Instruments

If Section A is completed, do not complete Section B.

**Section B – Only One Product Line or No Products Are Manufactured or Produced In U.S.**

If only one product line or no products are manufactured or produced in the U.S. complete only section B.

I hereby certify that there is only one product line or no product manufactured or produced in the U.S., that the information provided is true and correct, and complies with all provisions of sections 34.350 to 34.359, RSMo. I understand that any misrepresentation herein constitutes the commission of a class A misdemeanor.

SIGNATURE (If submitting bid electronically, typed signature required).

COMPANY NAME

**Section C – Products May Qualify Because of Qualifying Treaty**

If some or all products bid qualify for domestic status because of a trade treaty, etc., then the bidder must identify each product, country and qualifying treaty, etc. below. **The bidder must list ALL products which are or may qualify as domestic below.** If more space is needed, please copy this form and submit as an attachment.

BID ITEM NUMBER(S)	COUNTRY WHERE MANUFACTURED OR PRODUCED	QUALIFYING TREATY, LAW, AGREEMENT, OR REGULATION

**SECTION C**

I hereby certify that the specific items listed above are domestic, that the information provided is true and correct, and complies with all provisions of sections 34.350 to 34.359, RSMo. I understand that any misrepresentation herein constitutes the commission of a class A misdemeanor.

SIGNATURE (If submitting bid electronically, typed signature required)

COMPANY NAME

**NOTE: Any product not listed above in Section C will be considered non-domestic if Section A is not signed. If this form is not completed, signed, and returned, items bid may not receive the domestic preference.**

**EXHIBIT C**

**PARTICIPATION COMMITMENT**

**Organization for the Blind/Sheltered Workshop Participation Commitment** – If the bidder is committing to participation by or if the bidder is a qualified organization for the blind/sheltered workshop, the bidder must provide the required information in the table below for the organization proposed and must submit the completed exhibit with the bidder’s bid.

<b>Organization for the Blind/Sheltered Workshop Commitment Table</b> By completing this table, the bidder commits to the use of the organization at the greater of \$5,000 or 2% of the actual total dollar value of contract.	
(The services performed or the products provided by the listed Organization for the Blind/Sheltered Workshop must provide a commercially useful function related to the delivery of the contractually-required service/product in a manner that will constitute an added value to the contract and shall be performed/provided exclusive to the performance of the contract.)	
<b>Name of Organization for the Blind or Sheltered Workshop Proposed</b>	<b>Description of Products/Services to be Provided by Listed Organization for the Blind/Sheltered Workshop</b>
1.	
2.	

**EXHIBIT D**

**DOCUMENTATION OF INTENT TO PARTICIPATE**

If the bidder is proposing to include the participation of an Organization for the Blind/Sheltered Workshop in the provision of the products/services required in the IFB, the bidder must either provide a recently dated letter of intent from each organization documenting the following information, or complete and provide this Exhibit with the bidder's bid.

*~ Copy This Form For Each Organization Proposed ~*

Bidder Name: \_\_\_\_\_

**This Section To Be Completed by Participating Organization:**

*By completing and signing this form, the undersigned hereby confirms the intent of the named participating organization to provide the products/services identified herein for the bidder identified above.*

Indicate appropriate business classification(s):

\_\_\_\_\_ Organization \_\_\_\_\_ Sheltered  
for the Blind \_\_\_\_\_ Workshop

Name of Organization \_\_\_\_\_

Contact Name: \_\_\_\_\_ Email: \_\_\_\_\_

Address: \_\_\_\_\_ Phone #: \_\_\_\_\_

City: \_\_\_\_\_ Fax #: \_\_\_\_\_

State/Zip: \_\_\_\_\_ Certification # \_\_\_\_\_

(or attach copy of certification)

Certification Expiration Date: \_\_\_\_\_

Describe the products/services you *(as the participating organization)* have agreed to provide:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Authorized Signature:**

\_\_\_\_\_  
*Authorized Signature of Participating Organization*

\_\_\_\_\_  
*Date*

**EXHIBIT E**

**MISSOURI SERVICE-DISABLED VETERAN BUSINESS PREFERENCE**

Pursuant to section 34.074, RSMo, the Division of Purchasing and Materials Management has a goal of awarding three (3) percent of all contracts for the performance of any job or service to service-disabled veteran businesses (see below for definitions included in section 34.074, RSMo) either doing business as Missouri firms, corporations, or individuals; or which maintain Missouri offices or places of business.

Definitions:

**Service-Disabled Veteran** is defined as any individual who is disabled as certified by the appropriate federal agency responsible for the administration of veterans' affairs.

**Service-Disabled Veteran Business** is defined as a business concern:

- a. not less than fifty-one (51) percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than fifty-one (51) percent of the stock of which is owned by one or more service-disabled veterans; and
- b. the management and daily business operations of which are controlled by one or more service-disabled veterans.

If a bidder meets the definitions of a service-disabled veteran and a service-disabled veteran business as defined in section 34.074, RSMo, and is either doing business as a Missouri firm, corporation, or individual; or maintains a Missouri office or place of business, the bidder **must** provide the following with the bid in order to receive the Missouri service-disabled veteran business preference of a three-point bonus over a non-Missouri service-disabled veteran business:

- a. a copy of an award letter from the Department of Veterans Affairs (VA), or a copy of the bidder's discharge paper (DD Form 214, Certificate of Release or Discharge from Active Duty) from the branch of service the bidder was in; and
- b. a completed copy of this exhibit

(NOTE: For ease of evaluation, please attach copy of the above-referenced letter from the VA or a copy of the bidder's discharge paper to this Exhibit. The above-referenced letter from the VA and a copy of the bidder's discharge paper shall be considered confidential pursuant to subsection 14 of section 610.021, RSMo.)

By signing below, I certify that I meet the definitions of a service-disabled veteran and a service-disabled veteran business as defined in section 34.074, RSMo, and that I am either doing business as a Missouri firm, corporation, or individual; or maintain Missouri offices or places of business at the location(s) listed below.

\_\_\_\_\_  
Service-Disabled Veteran's Name  
(Please Print)

\_\_\_\_\_  
Service-Disabled Veteran Business Name

\_\_\_\_\_  
Service-Disabled Veteran's Signature

\_\_\_\_\_  
\_\_\_\_\_  
Missouri Address of Service-Disabled Veteran Business

**EXHIBIT F****Certification Regarding  
Debarment, Suspension, Ineligibility and Voluntary Exclusion  
Lower Tier Covered Transactions**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 29 CFR Part 98 Section 98.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988, Federal Register (pages 19160-19211).

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS FOR CERTIFICATION)

- (1) The prospective recipient of Federal assistance funds certifies, by submission of this bid, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective recipient of Federal assistance funds is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid.

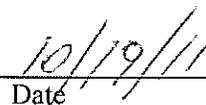
Lonny Ennen – Regional Manager

Name and Title of Authorized Representative



Signature

Date



**Instructions for Certification**

1. By signing and submitting this bid, the prospective recipient of Federal assistance funds is providing the certification as set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective recipient of Federal assistance funds knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department of Labor (DOL) may pursue available remedies, including suspension and/or debarment.
3. The prospective recipient of Federal assistance funds shall provide immediate written notice to the person to which this bid is submitted if at any time the prospective recipient of Federal assistance funds learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "bid," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this bid is submitted for assistance in obtaining a copy of those regulations.
5. The prospective recipient of Federal assistance funds agrees by submitting this bid that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the DOL.
6. The prospective recipient of Federal assistance funds further agrees by submitting this bid that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may but is not required to check the List of Parties Excluded from Procurement or Nonprocurement Programs.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the DOL may pursue available remedies, including suspension and/or debarment.

## ***Shimadzu Responses to Bid Specification Requirements***

The Shimadzu GCMS QP-2010 ULTRA instrument meets or exceeds the specifications provided in Section 1.1, with the noted line item improvement/enhancements.

### **1.1 Gas Chromatograph/Mass Spectrometer (GC/MS):**

- 1.1.1 The gas chromatograph shall be fully automatic with an oven design that allows easy access to columns.
- 1.1.2 The gas chromatograph's column oven shall:
  - a. Be able to cool from 300 degrees C to 50 degrees C in less than four (4) minutes.**
  - b. Have a programmable temperature to 250 degrees C/min.
  - c. Have an oven temperature reaching at least 450 degrees C.
  - d. Have a programming rate range of approximately – 400 to 400 KPa/min.
- 1.1.3 The gas chromatograph must be split/splitless capillary injection design equipped with an autosampler allowing for various injection speeds and must be able to use columns from 0.1 to 0.75 mm inter-diameter in split and splitless modes.
- 1.1.4 The gas chromatograph must have at least 80 sample positions and reproducibility of injection <0.5% RSD for packed columns for 1 uL injections.
- 1.1.5 The gas chromatograph must have pressure and flow program ramps with a flow control rate of up to 1200 ml/min.
- 1.1.6 The mass spectrometer must be quadrupole technology, full serviceable, equipped with solid molybdenum (metallic) alloy rod (or equal) and designed with pre-filter system before the main quadrupole rods. The unit must have easily accessible quadrupole. The system shall have a linear dynamic range of at least  $10^6$  in scan mode. The system should have pre-quads with 60 khz ripple applied for maximum ion transfer through the RF filter and minimize the contamination of the main quads allowing longer operation without maintenance.
- 1.1.7 **Mass spectrometer operating mass range 1.5 m/z to 1090 m/z, EI signal-to-noise ratio of >500:1 for 1pg OFN in full scan mode, and signal-to-notice ratio of >160:1 RMS for 100fg OFN at 272 m/z in SIM mode.**
- 1.1.8 The mass spectrometer must allow the user to change the filament without removing the quadrupole assembly; must be a dual filament system. The ion chamber should be located at the front of the instrument for easy maintenance. The filaments should be two rhenium coil filaments with automatic on/off controls to prevent filament damage.
- 1.1.9 The mass spectrometer must allow the user to remove the inner ion source without removing optical lenses or quadrupole assembly. The ion source must be independently heated from 100 – 300 degrees C selectable from the method. Must be able to set interface from 50 – 350 degrees C.
- 1.1.10 **The mass spectrometer's scan rate 20,000 amu/sec or 50 scans per second in full scan mode.**

- 1.1.11 The mass spectrometer's SIM mode should be capable of 64 channels by 64 groups (max.).
- 1.1.12 The mass spectrometer's software must be capable of sorting an adequate number of chromatographic methods, with the appropriate number of ramps and isothermal holds, in order to perform analysis on drugs of abuse with specificity and precision. The instrument should have internally controlled pirani gauge. The detector should be a +/- 10 kv conversion dynode.
- 1.1.13 The mass spectrometer must have a gas saver system. The rotary pump must be a minimum of 304 min standard to 75 L/minute (optional).
- 1.1.14 The mass spectrometer must be able to acquire vacuum within 2 to 4 hours of bringing the system back up. Must have dual flow differential turbo molecular pumps that require no oil so no oil contamination can occur in mass spectrometer (high capacity 179L/sec + 185 L/sec).
- 1.1.15 The mass spectrometer must not require gases (except helium or hydrogen), water, heating, and/or cooling requirements. The carrier gas should be able to maintain a constant linear velocity and control by the GC/MS.
- 1.1.16 The mass spectrometer must have a fully automated system where the capacity to detect a minimum of seven (7) drugs of abuse for a minimum of 100 samples in a 16 hour period using select ion monitoring.
- 1.1.17 The mass spectrometer must have printout (report) capability to provide reportage consisting of at a minimum listing of specimens, identification of test, and test result.
- 1.1.18 The computer/data acquisition system of the GC/MS must include a computer, 22 inch LCD monitor with a resolution of 1024 x 768 or higher, keyboard and mouse; an IBM computer is preferred but not mandatory.
- 1.1.19 The computer system/data acquisition system of the GC/MS must include Windows 2000 operating system (or newer version) on a CPU that is a Pentium IV (2000 MHz) or larger. The CPU must include a read/write CD-ROM for archival of data with a minimum of 512 DDR megabytes of RAM and must have a minimum of 60 GB hard drive. The CPU must have Ethernet interface capability (100 BASE-TX/10 BASE-T).
- 1.1.20 The computer/data acquisition system of the GC/MS must have the ability to acquire scan as well as SIM data on one peak simultaneously with quantitation of both data sets. Both data sets must be contained within the same data file.
- 1.1.21 The computer/data acquisition system of the GC/MS must be able to share existing laser printer via an automatic switch box or the contractor must provide a dedicated laser printer that can print a minimum of 16 pages per minute.
- 1.1.22 The data acquisition software must contain pass/fail evaluation of recovery, degradation check, spectral pattern check etc.
- 1.1.23 The data acquisition software must be able to store change histories of method files, data files, and configuration setting files.



# QUOTATION

Number: SSI-39398-CSJW Rev. 0

### QUOTE DESCRIPTION:

Bid for Missouri Department of Corrections GCMS, IFB  
NO.: B1E12049, REQ NO.: NR 931 YYY12708016

Laurie Borchelt  
MO DEPT OF CORRECTIONS  
301 West High Street, Room 630  
Jefferson City, MO 65101  
**Phone:** (573) 751-1702  
**Fax:**  
**E-mail:** laurie.borchelt@oa.mo.gov

<b>Effective Date</b>	10/11/2011	<b>Proposed Ship Date</b>	45 Days/ARO
<b>Expiration Date</b>	12/30/2011	<b>FOB</b>	DESTINATION
<b>Ship Method</b>	BEST WAY	<b>Shipping Terms</b>	PREPAID & ADD
<b>Inco Terms</b>			

**PLEASE SEE ATTACHED TERMS AND CONDITIONS**

**For questions or modifications about this quote, please contact your sales representative. If you are a tax exempt customer, please contact Customer Service and send a copy of your exemption certificate in with your order. The exemption certificate can also be faxed to 410-381-1222**

<b>Salesperson:</b>	Joshua Duncan	MWR Regional Office
<b>Phone:</b>	(913)888-9449 Ext. 1282	8052 Reeder Street
<b>E-mail:</b>	jdduncan@SHIMADZU.com	Lenexa, KS 66214-1554

ADDITIONAL INFORMATION:

## THANK YOU FOR YOUR INTEREST IN SHIMADZU SCIENTIFIC INSTRUMENTS

**Authorization Signature**

**Date: 10/19/2011**

**For Order Placement:**

Reference Quotation Number on Purchase Order  
Shimadzu Scientific Instruments  
7102 Riverwood Drive  
Columbia MD 21046  
Toll Free: 800-477-1227  
Phone: 410-381-1227  
Fax: 410-381-6781  
E-mail: [customer.service@shimadzu.com](mailto:customer.service@shimadzu.com)  
Int'l Fax: 410-309-6130  
Int'l Email: [icsc@shimadzu.com](mailto:icsc@shimadzu.com)



# QUOTATION

Number: SSI-39398-CSJW Rev. 0

Line #	Product Number	Product Name	Qty	List Price	Ext'd Price
4	220-99212-03	GCMS QP-2010 SERIES BASIC USER COURSE.	1	\$2,170.00	\$0.00
GCMS QP-2010 SERIES BASIC USER COURSE					
Class held at CTEC in Columbia, MD					
5	220-94867-00	FREE GC Column with Consultation from Phenomenex.	1	\$0.00	\$0.00
Free Phenomenex GC column with GC or GCMS system purchase. Phenomenex will provide a phone consultation about the specific application and send a free column based on the application requirements and objectives. NOTE: THIS COLUMN SHIPS DIRECTLY FROM PHENOMENEX.					
6	I&F	INSTALLATION AND CUSTOMER FAMILIARIZATION.	1	\$0.00	\$0.00
7	1YW	1 YEAR WARRANTY.	1	\$0.00	\$0.00

**NOTE: Taxes are not included in the quoted amount**

<b>Total List Price</b>	\$109,748.00
<b>Total Line Item Discounts</b>	\$24,850.64
<b>Subtotal</b>	\$84,897.36
<b>Total Amount</b>	\$84,897.36



## QUOTATION

Number: **SSI-39398-CSJW Rev. 0**

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more than (30) thirty days after arrival. If Buyer shall fail or refuse to accept delivery of any of the products for unverifiable claims for loss or damage to products occurring while in transit, all sums paid on deposit shall be retained by SSI as liquidated damages, provided, however, that SSI may recover in full its actual damage from Buyer in the event that actual damages exceed the amount retained as liquidated damages.

(d) All claims for damage or loss of insured shipments shall be immediately communicated, when possible, to SSI at (410) 381-1227, 7102 Riverwood Drive, Columbia, Maryland 21046-2S02, Attn: Customer Service. Buyer shall immediately notify delivering carrier of loss or damage to the shipment and SSI will cooperate with Buyer in the adjustment of all claims. Buyer agrees to permit SSI or SSI's representative to inspect damaged goods.

### TERMINATION

Upon any termination or cancellation of this sales agreement by Buyer, either in whole or in part, Buyer agrees to promptly pay appropriate termination or cancellation charges invoiced by SSI. If appropriate, the termination charge shall be not less than twenty percent (20%) of the total amount of this sales agreement.

### RETURNED GOODS

All returns must be pre-authorized by SSI and a Return Goods Authorization (RGA) number must appear on the face of the package. Returned goods will be subject to a restocking charge. If appropriate, the restocking charge shall be not less than twenty percent (20%) of the total amount of this sales agreement.

### DELIVERY

The scheduled shipping or delivery date shown on the face hereof is our best estimate of the time the order will be shipped and SSI assumes no liability for loss, general damages, or special or consequential damages due to delays.

### TAXES

All applicable taxes, including but not limited to Federal, state and local excise, sales or use taxes, shall be borne by the Buyer. Buyer will provide proof of tax exempt status/exempt certification within 30 days of placing the order.

### PATENTS

SSI shall defend any suit or proceeding brought against the Buyer so far as based upon an assertion that any product furnished under this sales agreement constitutes a direct infringement of any United States patent having a claim of claims covering solely the product itself, if notified promptly in writing and given authority, information and assistance (at SSI's expense) for the defense of same, and SSI shall pay all damages and costs awarded therein against Buyer. In case said product in such suit is held to constitute infringement and the use of said product is enjoined, SSI shall, at its own option and at its own expense, either (1) procure for Buyer the right to continue using said product, (2) replace the same with a non-infringing product, (3) modify it so it becomes non-infringing, or (4) remove said product and refund the purchase price and transportation costs thereof. The foregoing obligations of SSI shall not apply to any infringement claim based upon (i) any use of any product sold hereunder in any process or in conjunction with any other product, or (ii) any product manufactured to Buyer's design or any product having a design arising out of compliance with Buyer's specifications. The foregoing states the entire liability of SSI for patent infringement by said product. If any suit or proceeding is brought against SSI based on claims that the goods manufactured by SSI in compliance with Buyer's specifications and supplied to Buyer directly infringe any fully issued United States patent, then the patent indemnity obligations herein stated with respect to SSI shall reciprocally apply with respect to Buyer.

### WARRANTY

Subject to the exceptions and upon the conditions stated below, SSI warrants that the products sold under this sales agreement shall be free from defects in workmanship and materials for one year after shipment of the products to the original Buyer by SSI, and if any such products should prove to be defective within such one year period, SSI agrees, at its option, either (i) to correct by repair or, at SSI election, by replacement with equivalent product any such defective product, provided that investigation and factory inspection discloses that such defect developed under normal and proper use, or (ii) to refund the purchase price. The exceptions and conditions mentioned above are as follows:

(a) Components or accessories manufactured by SSI which by their nature are not intended to and will not function for one year are warranted only to give reasonable service for a reasonable time; what constitutes reasonable time and reasonable service shall be determined solely by SSI. A complete list of such components and accessories is maintained at the factory;

(b) SSI makes to warranty with respect to components or accessories not manufactured by it, in the event of defect in any such component or accessory SSI will give reasonable assistance to Buyer in obtaining from the respective manufacturer whatever adjustment is authorized by the manufacturer's own warranty;

(c) any product claimed to be defective must, if required by SSI, be returned to the factory, transportation charges prepaid, and will be returned to Buyer with transportation charges collect unless the product is found to be defective, in which case SSI will pay all transportation charges;

(d) If the product is a reagent or the like, it is warranted only to conform to the quantity and content and for the period (but not in excess of one year) stated on the label at the time of delivery;

(e) SSI may from time to time produce a special printed warranty with respect to a certain product, and where applicable, such warranty shall be deemed incorporated herein by reference;

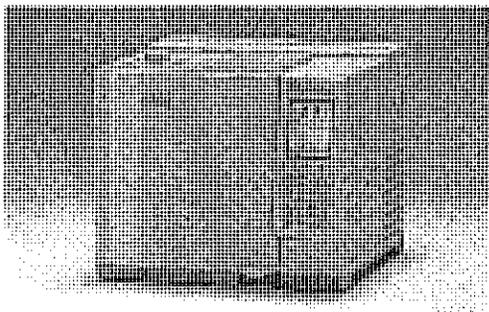
(f) SSI shall be released from all obligations under all warranties, either expressed or implied, if any product covered hereby is repaired or modified by persons other than its own authorized service personnel unless such repair by others is made with the written consent of SSI.

(g) SSI's obligations pursuant to all warranties, either express or implied, shall be expressly conditioned upon payment in full by the Buyer for the product(s) covered by the warranties. In the event of non-payment, whether for the entire purchase price or a part thereof, SSI shall be released from all obligations under all warranties, either express or implied.

IT IS EXPRESSLY AGREED THAT THE ABOVE WARRANTY SHALL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND MERCHANTABILITY, AND THAT NEITHER BUYER NOR SSI SHALL HAVE NO LIABILITY FOR SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR CAUSE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO LOSS OF USE, LOSS OF DATA, LOSS OF PRODUCTIVITY, LOSS OF BUSINESS, LOSS OF PROFIT, LOSS OF PLANT, EQUIPMENT OR PRODUCTION. THE LIMITATION OF LIABILITY FOR SUCH DAMAGES SHALL BE APPLICABLE EVEN IF SSI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING OUT OF THE MANUFACTURE, USE, SALE, HANDLING, REPAIR, MAINTENANCE OR REPLACEMENT OF ANY OF THE PRODUCTS SOLD UNDER THIS SALES AGREEMENT.

If an SSI Special Warranty (covering a designated item or items) is contained in the manual or is otherwise shipped with such designated item or

# GC-2010 Plus with Advanced Flow Technology



## GC-2010 Plus with Advanced Flow Technology

The GC-2010 Plus provides reliable, high-precision trace analysis with high reproducibility, utilizing detectors such as FID and FPD that feature best-in-class sensitivity.

The combination of Advanced Flow Technology and the new rapid oven cooling system shortens analysis times, and provides for significant improvements in productivity.

## GC-2010 Plus Specifications

### Column Oven

- Temperature range: Room temperature + 4°C to 450°C  
(using liquid CO<sub>2</sub> gas\*: -50°C to 450°C)
- Dimensions: 280 (w) x 280 (H) x 175 (D) mm
- Oven volume: 13.7 L
- Temperature accuracy: set value (K) ± 1% (calibration at 0.01°C)
- Temperature deviation: <2°C max. (on 200 mm dia.  
circumference 30 mm from rear)
- Temperature variation coefficient: <0.01°C/°C
- Temperature program steps: Up to 20 (cooling program possible)
- Programmed rate setting range: -250 to 250°C/min.
- Total time for all steps: 9999.99 minutes max.
- \* Optional parts are required to use liquid CO<sub>2</sub> gas.

### Injection Units

- Maximum 3 independently temperature controlled injector units (The quantity that can be mounted simultaneously depends on the injector type) are provided.
- Injection port unit: Split/splitless injection unit provided as standard.
- Split/Splitless Injection Unit (SPL-2010 Plus)**  
Temperature range: room temperature + 5°C to 450°C
- Direct Injection Unit (WBI-2010 Plus)**  
Temperature range: room temperature + 5°C to 450°C
- On-column/Programmable Temperature Vaporizer Injection Unit (OCI/PTV-2010)**  
Temperature range: room temperature + 5°C to 450°C  
Heating rate: 50°C to 450°C within 3 minutes  
Cooling rate: 450°C to 50°C within 8 minutes (for 50°C column temperature)  
Heating program: max. heating rate 250°C/minute, heating in 7 steps  
Switching possible between on-column and programmable temperature vaporizer injection units (requires split piping re-connection between OCI and PTV)

### Multidimensional GC System MDGC/GCMS-2010

Using two columns of different selectivity, the MDGC system can separate and quantify target substances from highly complicated matrices. The MDGC/GCMS-2010 incorporates Multi-Deans switching, a new mechanism that significantly reduces the likelihood of fluctuations in the retention times of eluted components, even if switching is performed several times in one run.

### Detector Splitting System

Compounds eluting from an analytical column are split to multiple detectors to obtain multiple chromatograms simultaneously. Offering abundant information in a single analysis, this system saves cost and reduces analysis times.

### Backflush System

The Backflush System reverses the carrier gas flow after the target compounds are detected, discharging residual components in the column through the injection port split vent, shortening analysis times and increasing productivity. As the high boiling point components are discharged efficiently, retention time shifts, column contamination and column deterioration are reduced.

### Easy-to-Use Advanced Flow Technology Software

Dedicated software simplifying the creation of the analytical conditions for both backflush and detector splitting.

### Detectors

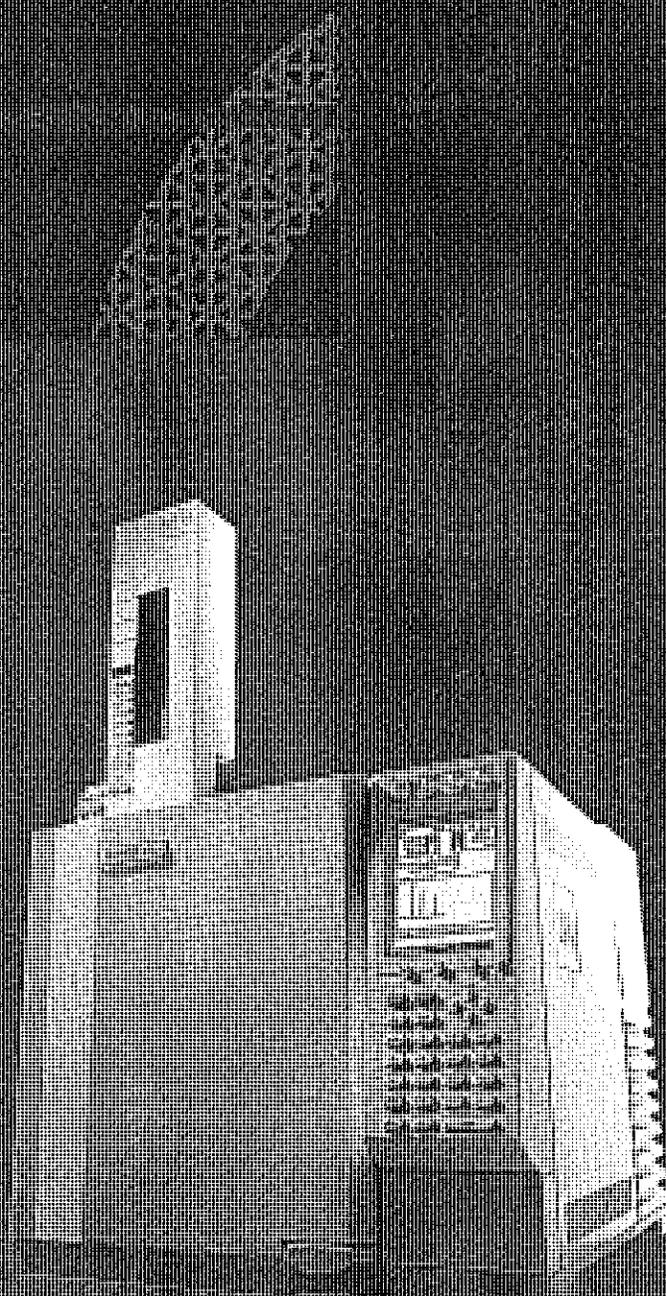
- Four detectors can be installed simultaneously and individually temperature controlled. (The quantity that can be mounted simultaneously depends on the detector type)
- Detector gas is electronically controlled by APC (Advanced Pressure Control)
- Flame Ionization Detector (FID)**  
Temperature range: to 450°C  
Minimum detected quantity: 1.5 pgC/s (dodecane)  
Dynamic range: 10<sup>7</sup>
- Thermal Conductivity Detector (TCD)**  
Temperature range: to 400°C  
Sensitivity: 20000 mV · mL/mg (decane)  
Dynamic range: 10<sup>5</sup>
- Electron Capture Detector (ECD)**  
Temperature range: to 350°C  
Minimum detected quantity: 6 fg/s (γ-BHC)  
Dynamic range: 10<sup>4</sup>
- Flame Photometric Detector (FPD)**  
Temperature range: to 350°C  
Minimum detected quantity: P 55 fgP/s (tributyl phosphate)  
S 3 pgS/s (dodecane thiol)  
Dynamic range: Phosphorus mode: 10<sup>4</sup>  
Sulfur mode: 10<sup>3</sup>
- Flame Thermionic Detector (FTD, also called NPD or TSD)**  
Temperature range: to 450°C  
Minimum detected quantity: N 0.1 pgN/s (azobenzene)  
P 0.03 pgP/s (malathion)  
Dynamic range: N, P 10<sup>3</sup>
- To keep instrument performance, max. 2 detectors shall be operated simultaneously.



# GC-2010 Plus

## With Advanced Flow Technology

Shimadzu  
Capillary  
Gas Chromatograph System



# GC-2010 Plus

## With Advanced Flow Technology

### CAPILLARY GAS CHROMATOGRAPH SYSTEM

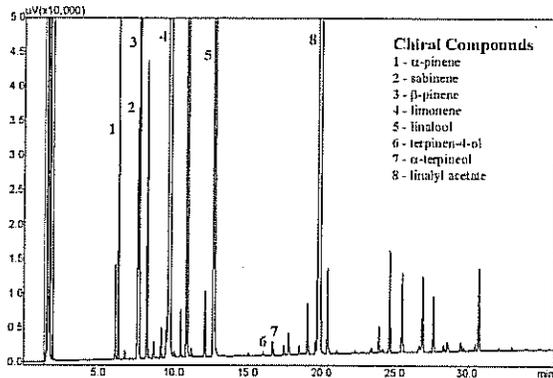
The Shimadzu GC-2010 Plus represents a new generation in top end capillary GC analysis, redefining sensitivity limits for trace analysis, fast GC applications, and easy, robust operation. Advanced Flow Technology (AFT) capability further extends the applications scope of the instrument allowing multidimensional GC, capillary backflush, and other specialized flow applications. AFT additionally enables reduced analysis times, enhanced chromatographic resolution, and application-specific configurations without compromising key performance features. The new detector line-up, featuring sensitivity specifications among the highest in the industry, ensures quality data across a broad range of applications.

<p><b>Advanced Flow Technology</b></p> <ul style="list-style-type: none"> <li>▪ Multi-dimensional system</li> <li>▪ Backflush system</li> <li>▪ Detector splitting system</li> </ul>	<p><b>Leading Sensitivity</b></p> <ul style="list-style-type: none"> <li>▪ Best-in-class*high-sensitivity detectors</li> </ul>	<p><b>Enhanced Productivity</b></p> <ul style="list-style-type: none"> <li>▪ High-speed analysis</li> <li>▪ Backflush</li> <li>▪ Rapid oven heating/ cooling</li> <li>▪ Gas saver function</li> <li>▪ Excellent repeatability</li> <li>▪ Carrier gas constant linear velocity mode</li> <li>▪ Dual-Injection system</li> </ul>
<p><b>Data Management [GCsolution]</b></p> <ul style="list-style-type: none"> <li>▪ Easy operation</li> <li>▪ Improves productivity</li> <li>▪ GLP/GMP compliant</li> <li>▪ Network compliant</li> </ul>	<p><b>Easy Operation</b></p> <ul style="list-style-type: none"> <li>▪ Large LCD display</li> <li>▪ Self diagnostic functions</li> </ul>	<p><b>Applications</b></p> <ul style="list-style-type: none"> <li>▪ Thermal decomposition analysis</li> <li>▪ Liquid Injection/ Headspace/ SPME Analysis system</li> <li>▪ Pyrolysis system</li> <li>▪ Simulated distillation analysis</li> <li>▪ PONA analysis</li> </ul>

<b>Contents</b>	P 04 - Advanced Flow Technology	P 08 - Leading Sensitivity	P 11 - Enhanced Productivity
	P 16 - Data Management	P 21 - Easy Operation	P 22 - Application Systems

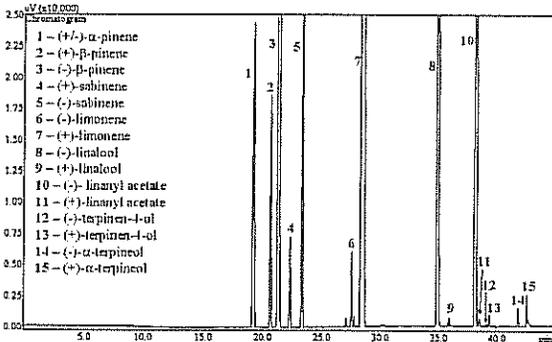
\*Per survey result 2009-04





## Multi-Switching Analysis of Essential Oil

1st Column : MEGA SE-52 0.25 x 25 m df=0.25  $\mu$ m  
 Oven temp : 50 °C - 280 °C (3 °C/min)  
 Injector : 250 °C  
 Split ratio : 1 : 100  
 Monitor FID : 290 °C  
 Hz: 50 mL/min, Air: 400 mL/min, Make-up: 0 mL/min  
 Switching : 8 times  
 2nd Column : MEGA DetTBuSiIIIIBeta 0.25 x 25 m df=0.25  $\mu$ m  
 Oven temp : 45 °C (12.00 min) - 180 °C (2 °C/min)



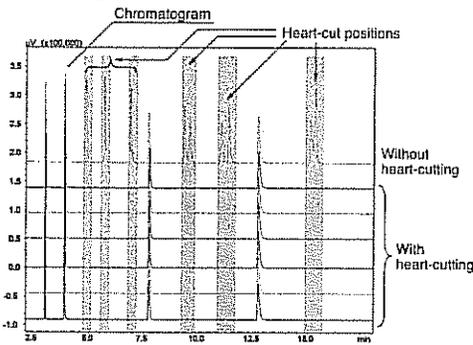
1st GC Chromatogram  
 8 compounds are switched onto the 2nd column.

2nd GC Chromatogram  
 8 compounds are separated into 15 peaks.



Data by  
 Università degli Studi di Messina  
 Prof. Luigi Mondello  
 Alessandro Casilli  
 Peter Quinto Tranchida  
 Danilo Sciarone

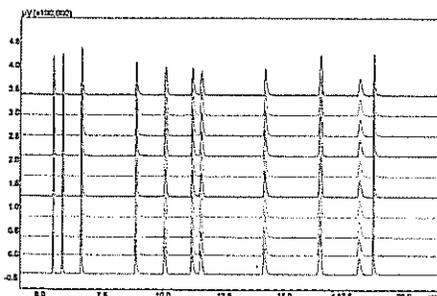
Chromatogram Obtained with 1st Column



Reproducibility of 1st Column

Compound	Area		Retention Time	
	MeOH	iAmOH	MeOH	iAmOH
1	174308	435368	3.008	12.712
2	171031	427495	3.009	12.712
3	173117	433085	3.009	12.712
4	174715	438180	3.009	12.712
5	172315	430744	3.008	12.712
6	174633	436304	3.008	12.712
7	175269	439073	3.009	12.712
8	175863	441410	3.008	12.711
9	172717	430224	3.008	12.712
10	172002	435496	3.008	12.712
Average	173597	434738	3.008	12.712
STDEV	1582	4347	0.00052	0.00032
CV(%)	0.912	1.000	0.017	0.002

Chromatogram Obtained with 2nd Column



Reproducibility of 2nd Column

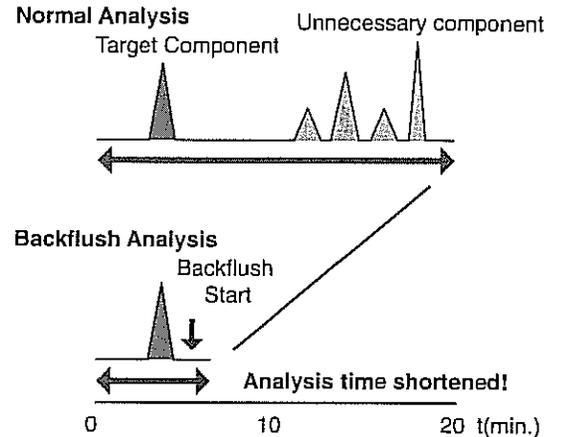
Compound	Area						Retention Time					
	Acetone	IPA	ETBE	Bz	TAME	nBuOH	Acetone	IPA	ETBE	Bz	TAME	nBuOH
1	241902	258122	322917	584033	302735	341100	5.515	5.880	11.563	16.501	18.137	18.733
2	237073	253283	316835	572472	296948	334684	5.516	5.880	11.565	16.501	18.136	18.734
3	240294	256361	321149	580369	301337	339373	5.516	5.881	11.565	16.503	18.138	18.733
4	242492	259231	324511	587336	304680	343516	5.515	5.881	11.565	16.502	18.136	18.732
5	238727	254946	318735	576768	299044	337067	5.515	5.880	11.563	16.500	18.136	18.733
6	242091	258606	323204	584763	303246	342028	5.515	5.880	11.563	16.503	18.137	18.732
7	243402	260384	325211	588083	305140	344235	5.515	5.880	11.563	16.502	18.135	18.731
8	241572	260384	326286	588626	301903	337481	5.515	5.880	11.563	16.501	18.135	18.732
9	239256	255374	319324	576796	299153	336898	5.515	5.880	11.563	16.501	18.135	18.733
10	238508	254865	319167	576955	299517	337759	5.515	5.880	11.564	16.502	18.137	18.730
Average	240532	257150	321734	581620	301380	338413	5.515	5.880	11.564	16.502	18.136	18.732
STDEV	2067.56	2506.10	3159.04	5706.12	2662.17	3170.38	0.00037	0.00049	0.00067	0.00078	0.00108	0.00106
CV	0.860	0.975	0.982	0.981	0.883	0.934	0.007	0.008	0.005	0.005	0.005	0.005

# Advanced Flow Technology for Enhancement

## Backflush System

The backflush system reverses the carrier gas flow after the target compounds have eluted, to discharge residual late eluting components in the column through the injection port split vent.

Backflush shortens the analysis time and improves productivity. In addition, high-boiling point components are discharged efficiently to reduce the bakeout time (elution time), and thus prevent column deterioration, contamination, and retention time shifts.

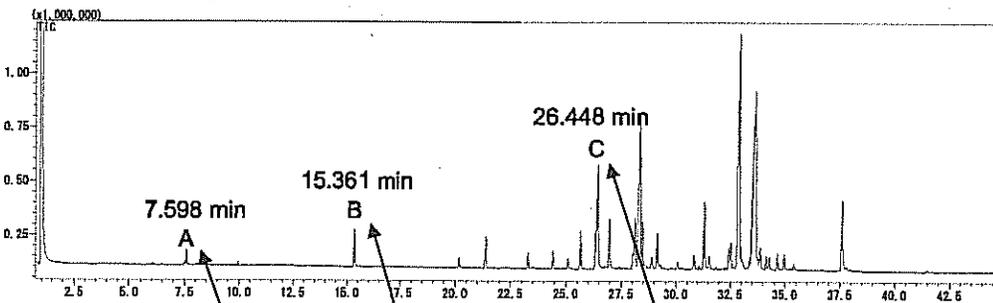


## Detector Splitting System

Compounds eluting from an analytical column may be split to multiple detectors to obtain multiple chromatograms. Offering abundant information in a single analysis, this system saves time and money. In addition, with concurrent use of selective detectors, confidence in peak identity is improved. We recommend this system to GCMS users wanting to confirm compound classes using detector selectivity.

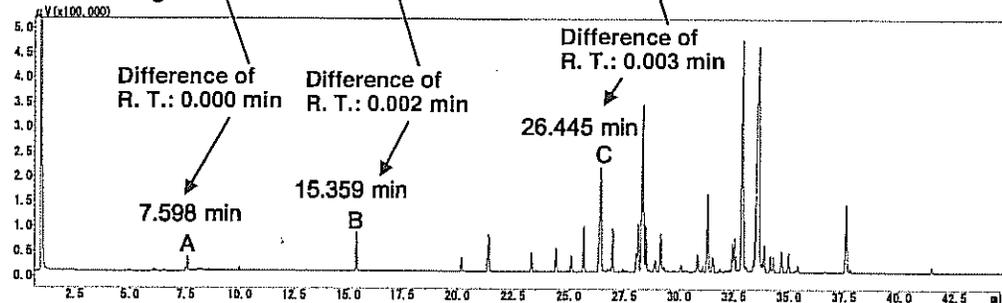
For analysis of natural products such as flavor compounds, it is efficient to use a combination of FID and MS. FID has a wide dynamic range for quantitative analysis, while MS has unmatched capability for qualitative identification. Using the detector splitting system, a TIC (Total Ion Chromatogram) and an FID chromatogram of the same pattern can be obtained simultaneously with one analysis.

Total Ion Chromatogram TIC



Qualitative analysis by MS

FID Chromatogram

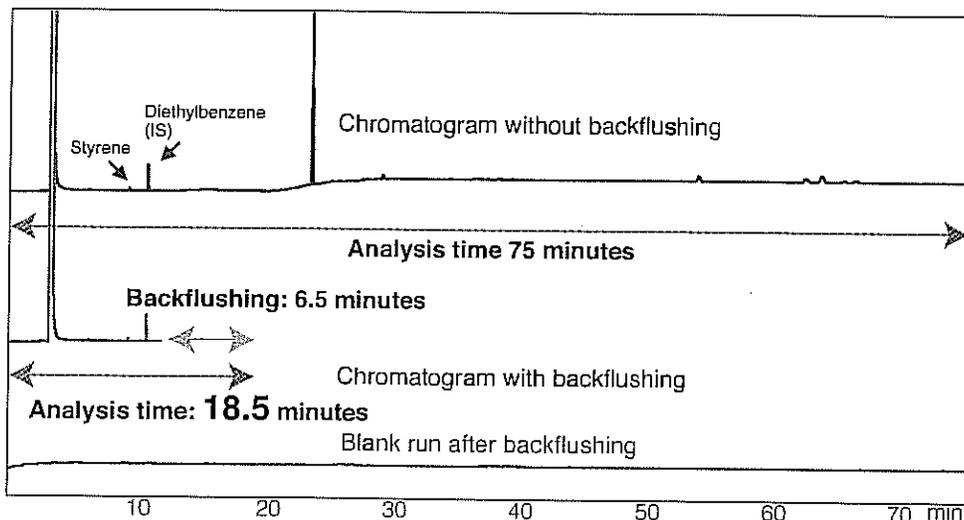


Quantitative analysis by FID:  
Wide quantitation response range

# Productivity and Confident Identification

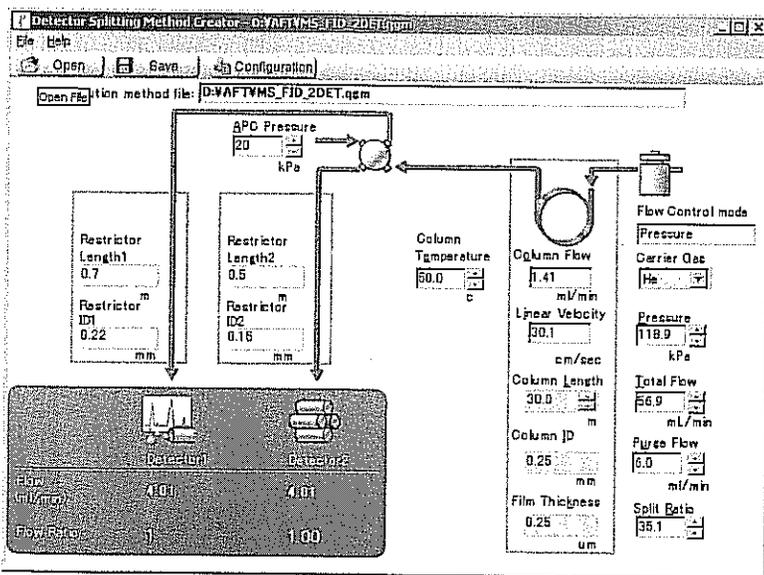
## AFT Software

The Intuitive and easy-to-use Advanced Flow Technology Software is included with each AFT system. Both the backflushing and detector splitting systems are controlled with this software.



Analysis of Volatile Compounds in Polystyrene

Backflushing was started 12 minutes after target substances were eluted. Analysis time, including the time for discharging unwanted substances, could be reduced from 75 minutes to 18.5 minutes.



Advanced Flow Technology software download site  
<http://www.shimadzu.com/products/lab/gc/index.html>

# Industry Leading Detector Sensitivity

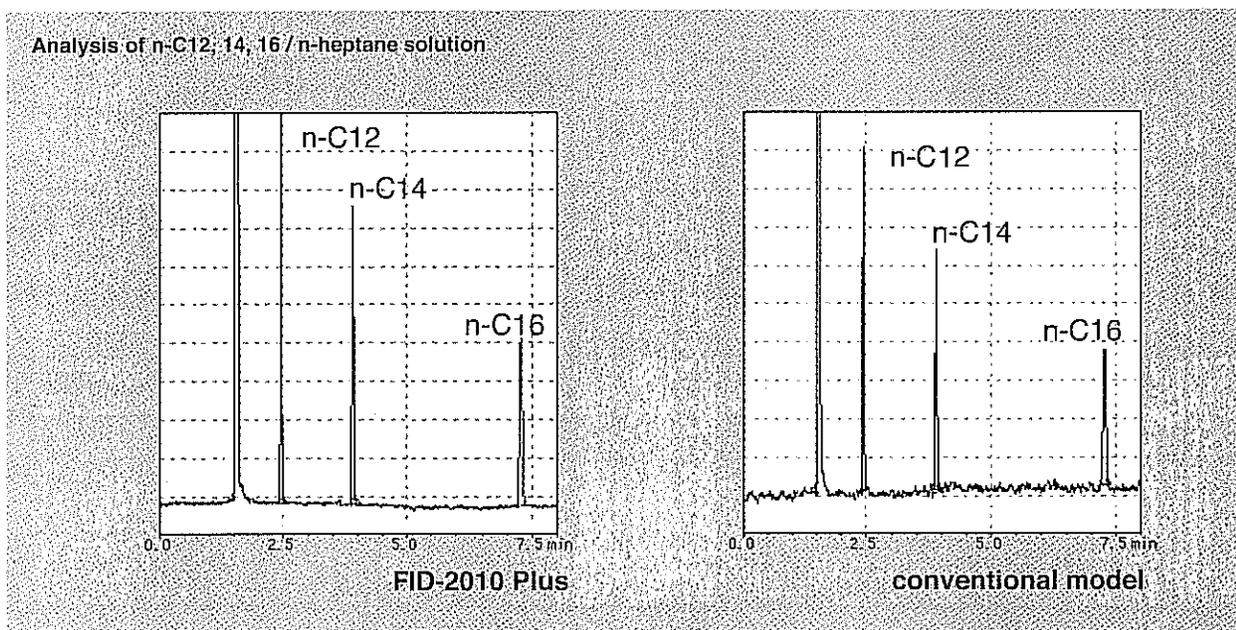
Responding to the ever increasing demands for trace level analysis, our new detectors boast the highest sensitivity in the industry. The new Flame Photometric Detector (FPD) and Flame Ionization Detector (FID) show significantly increased sensitivity.

## Flame Ionization Detector

### FID-2010 Plus

FID-2010 Plus gives you the world's highest FID sensitivity with clean detector gas flows and the latest noise reduction technology.

**Minimum Detected Quantity: 1.5 pgC/s\***



- High-sensitivity has been achieved by thorough cleaning of detector gas lines and the latest noise-reduction technology.
- Automatic ignition, re-ignition, and flame extinguishing functions
- Feedback function reduces gas supply pressure to zero when the hydrogen flame is extinguished.
- Hydrogen connector joints have reverse threads to prevent incorrect pipe connections.
- Optional flame monitor can be mounted.

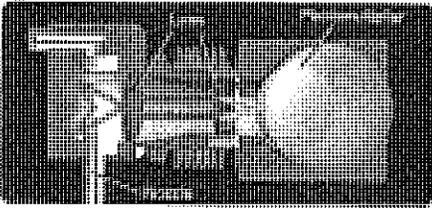
\*For high sensitivity analyses, high purity air (Impurity of hydrocarbons <1 ppm) is required. (Tubing and gas pressure regulator must be compliant with high-purity gas use.)

# Flame Photometric Detector

## FPD-2010 Plus

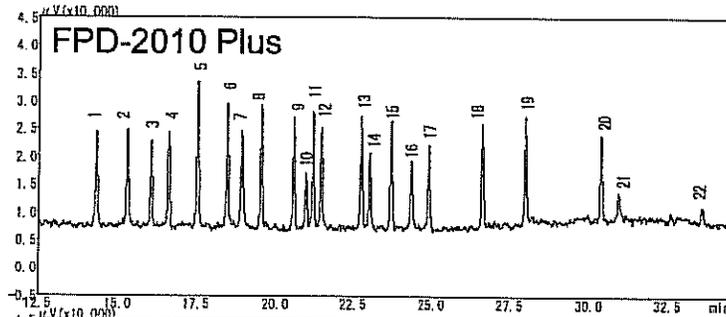
A new FPD design featuring improved flame stability and double focusing optics has produced an FPD with the world's highest sensitivity. This has all been achieved in a compact design that fits within the detector bay.

The dual-focus system adds a lens to the interference filter for efficient light collection at the photomultiplier light receptor.

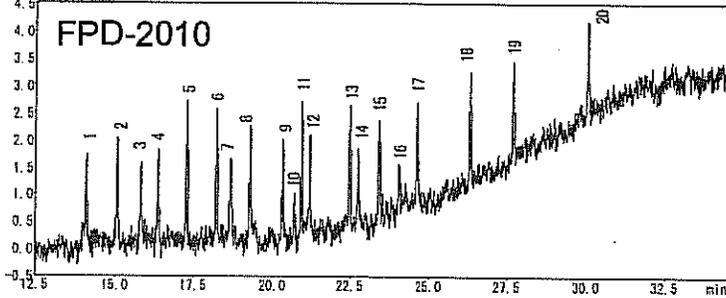


**Minimum Detected Quantity:**  
 55 fgP/s (phosphorus compounds)  
 3 pgS/s (sulfur compounds)

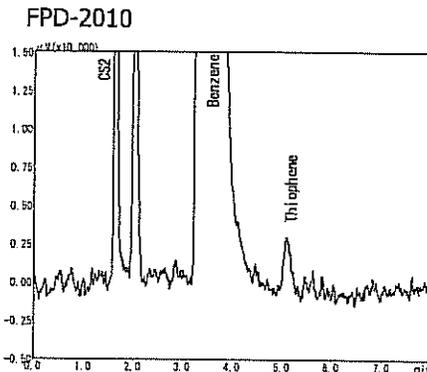
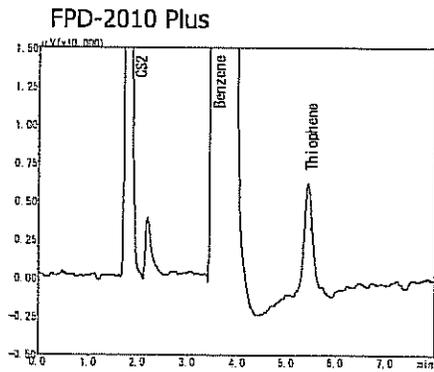
P mode: Analysis of 5 ppb Organo-Phosphorus Pesticides



1. Ethoprophos
2. Phorate
3. Thiometon
4. Terbufos
5. Etrimfos
6. Dichlofenthion
7. Dimethoate
8. Tolclophos-methyl
9. Chlorpyrifos
10. Formothion
11. Fenthion(MPP)
12. Fenitrothion(MEP)
13. Isofenphos
14. Phenthoate(PAP)
15. Prothiofos
16. Methidathion(DMTP)
17. Butamifos
18. Sulprofos
19. Fensulfothion
20. EPN
21. Phosmet
22. Pyraclofos



S Mode: Analysis of 20 ppb Thiophene in Benzene



# Industry Leading Detector Sensitivity

## Electron Capture Detector\*

### ECD-2010 Plus

- A highly sensitive and selective detector for the analysis of electrophilic compounds.
- Top class sensitivity results from upgraded cell insulation and a cell/flow line design to reduce contamination.
- Compact design achieves shorter stabilization times.
- ECD cell is common with that for GC-2010 (ECD-2010).

Minimum Detected Quantity: 6fg/sec

\*In some countries, registration with the appropriate authority for regulation of radioisotopes is required before purchasing or using this detector. (Contact your Shimadzu representative for details.)

## Flame Thermionic Detector (NPD)

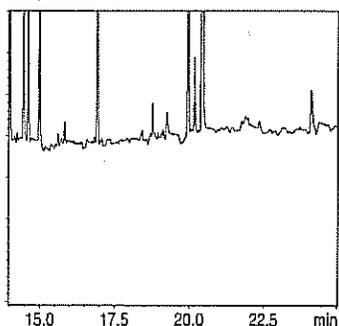
### FTD-2010 Plus

- For analysis of organo nitrogen and phosphorus compounds, such as residual pesticides.
- Improved collector design reduces negative peaks from impurity components.
- No tools needed for collector replacement.
- Alkali source regeneration kit (option) reduces operational costs.
- Hydrogen connector fittings have reverse threads to prevent pipe connections.

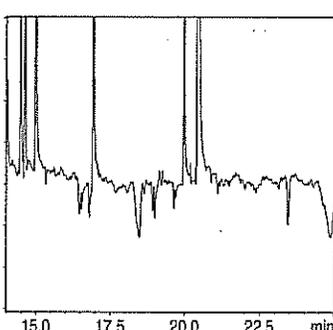
Minimum Detected Quantity: 0.1pgN/sec

### Improved Collector of FTD-2010 Plus Reduces Negative Peaks.

Improved collector – zoom



Standard collector – zoom



## Thermal Conductivity Detector

### TCD-2010 Plus

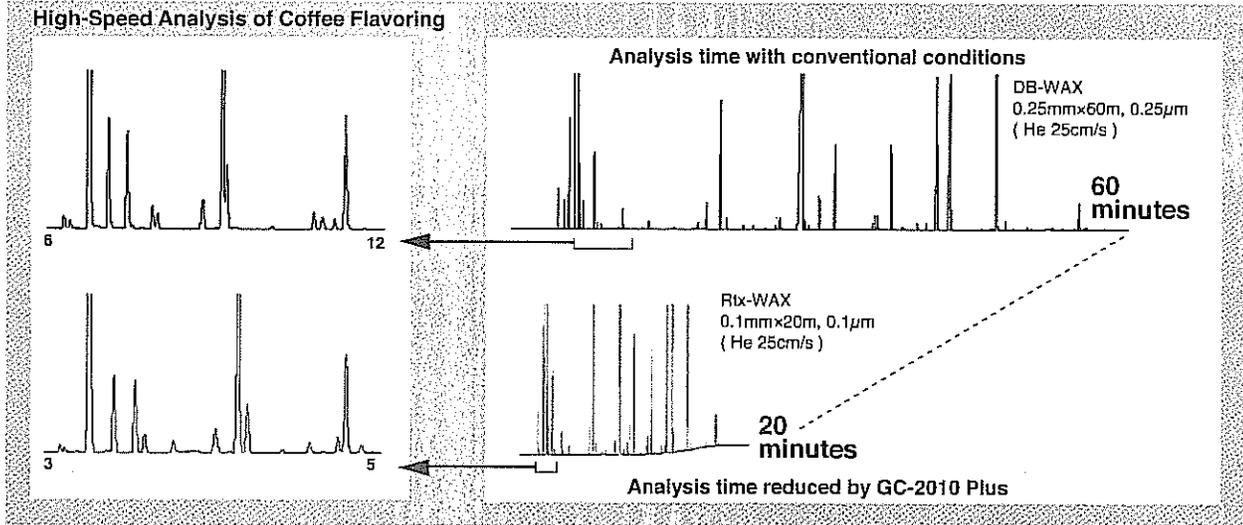
- For analysis of gases and concentrated organic compounds.
- Microvolume cell optimized for capillary column analysis.
- Short stabilization time.

Sensitivity:  
20000mV · mL/mg  
(decane)

# Highly Evolved Design Delivers Analytical Productivity

## High-Speed Analysis

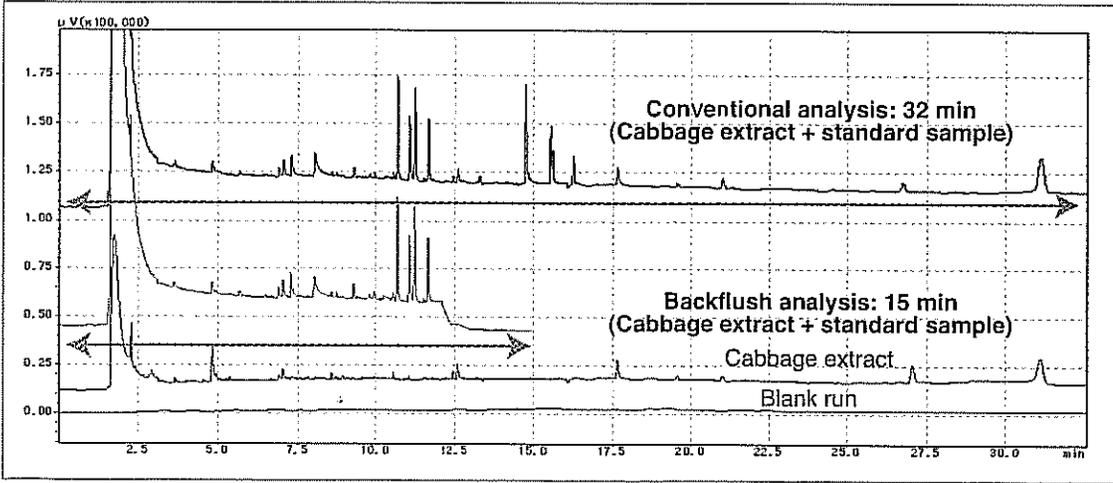
High-speed analysis with narrow bore capillary columns reduces analysis time and improves sample throughput. The new-generation digital flow rate controller (AFC) provides 970 kPa maximum operating pressure and 1200 mL/min total flow to support high-speed analysis.



## Backflush Reduces Analysis Time

The Backflush technique is effective in capillary GC analysis when early-eluting target compounds occur in a sample along with higher boiling components not of interest to the analysis.

### Analysis of Pesticides in Cabbage

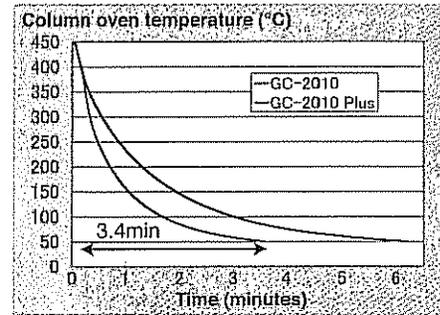
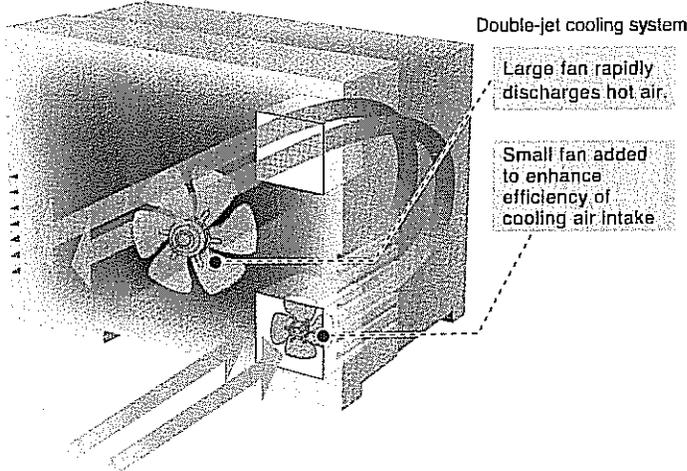


Reduction of analysis time by 53%

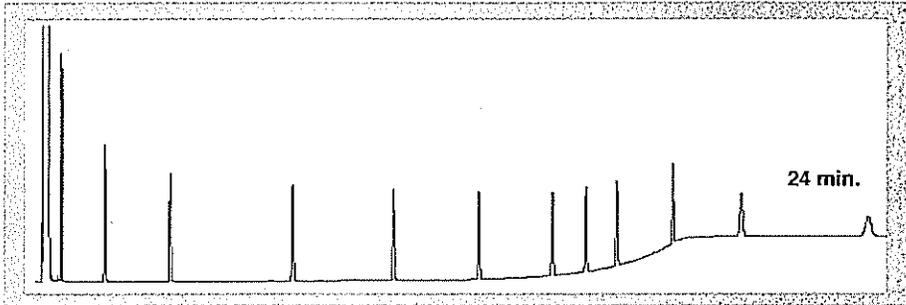
# Enhanced Productivity

## Rapid Oven Heating\*/ Cooling

The GC-2010 Plus incorporates a double-jet cooling system, consisting of an exhaust fan to discharge hot air and an intake fan to draw in cooling air. The system enables the reduction of cooling time from 450°C to 50°C in 3.4 min.



### Hydrocarbon analysis in conventional mode



Approx. 4.7 min.  
Cooling

To next analysis

Total analysis time: 28.7 min.

### Hydrocarbon analysis with GC-2010 Plus high power oven model (230V)



Approx. 2.7 min.  
Cooling

To next analysis

Total analysis time: 15.2 min.

\*Rapid oven heating is available with the high power oven (230V model) only.

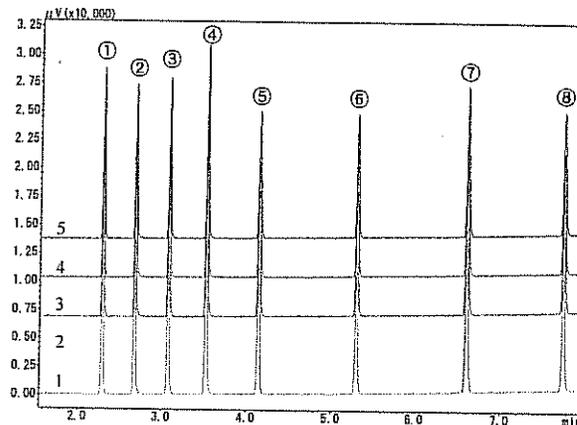
## Gas Saver Function Reduces Carrier Gas Usage

The GC-2010 Plus features a gas saving function that considerably reduces carrier gas consumption. In the split/splitless sample injection mode, the split ratio can be reduced after injection and during stand-by.

**Repeatability  
Resetting the Limits**

All units including the column oven, flow controller, and sample injection unit are comprehensively optimized at the design stage to achieve world-class precision.

**Analysis of Grob Test Mixture**  
(Solvent: acetone, each 100 ppm)



The large vaporization capacity ensures excellent precision, even when using solvents that are highly volatile upon injection, such as acetone. Long-term stability of retention time is realized by the new room temperature compensation technology built into each AFC (Advanced Flow Controller).

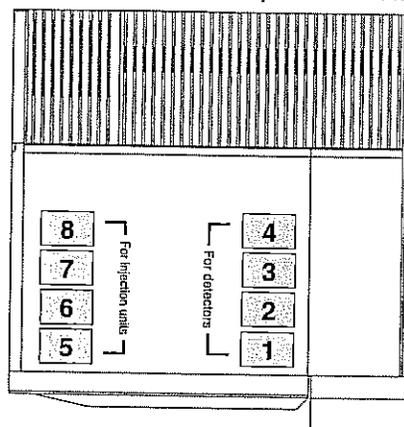
**Repeatability of Retention Time and Area**

	Average RT	CV% RT	Average Area	CV% Area
1. n-Decane	2.29436	0.0043	23429.8	0.1870
2. n-Octyl Alcohol	2.68199	0.0031	22252.9	0.3020
3. n- Undecane	3.08074	0.0023	23997.2	0.2236
4. 2,6-Dimethylaniline	3.52498	0.0045	29616.6	0.2502
5. Methyl n-Nonanoate	4.14567	0.0041	20563.3	0.2262
6. Methyl n-Caprato	5.30144	0.0042	21484.8	0.0744
7. Dicyclohexylamine	6.60017	0.0017	28067.3	0.1894
8. Methyl Laurate	7.75542	0.0024	22759.5	0.1638

**Simultaneously install up to three  
injection units and up to  
four detectors**

Select from three injection units and five detector types to suit the needs of your analysis. Options such as injection units, detectors and autoinjectors can easily be retrofitted.

Top of GC-2010 Plus



## Split/Splitless Injector

### SPL-2010 Plus

- New design reduces the possibility of carry over.
- Standard configuration supports high-speed GC with narrow bore capillary columns.
- Gas saver function reduces split gas consumption.
- Permits high-pressure injection mode.

## On-Column/Programmed Temperature Vaporization Injector

### OCI/PTV-2010

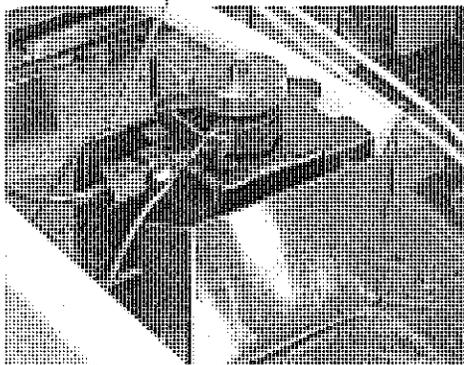
- Configured for either cool, on-column injection (OCI) or programmed temperature vaporization (PTV) injection mode.
- Uses inert quartz PTV inserts.
- An optional OCI insert allows connecting a narrow-bore capillary column directly to the injector without a 0.53mm pre-column.
- Supports analysis of very high-boiling compounds (alkanes up to C<sub>100</sub>).

## Direct Injection Unit

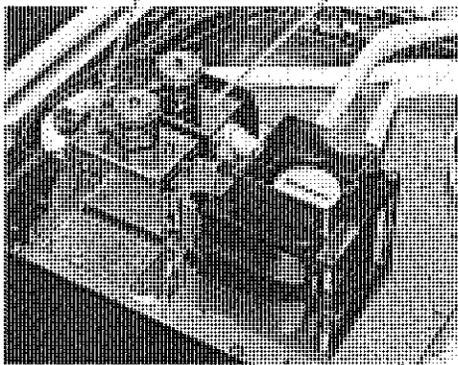
### WBI-2010 Plus

- Septum purge flow channel prevents solvent tailing.
- Uses the same glass inserts as splitless analysis to simplify use. (Patented)
  - \* Easily modified for packed column use.

SPL-2010 Plus

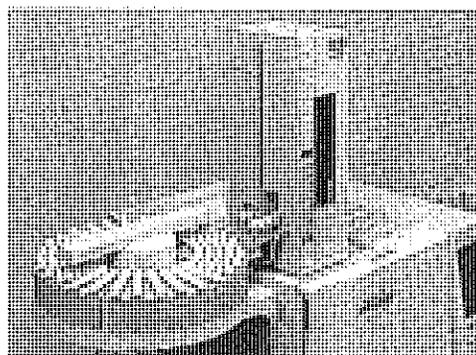


OCI/PTV-2010 WBI-2010 Plus



### Dual Injection System

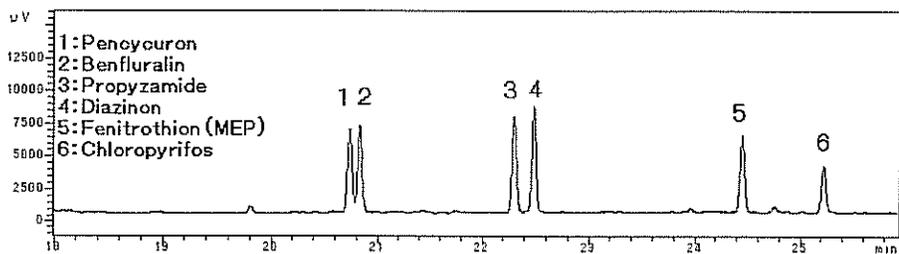
A dual injector system can be configured with a combination of two AOC-20i injectors and one AOC-20s sample carousel. Two-line simultaneous injection doubles the sample throughput to improve productivity.



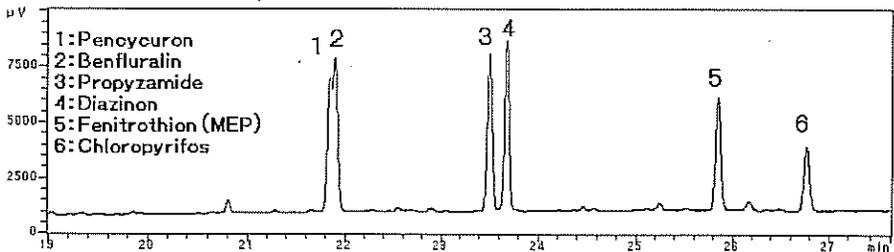
## Constant Linear Velocity Mode Quickly Determines Separation Conditions

Shimadzu's approach to carrier gas control is based on the carrier gas linear velocity, which directly correlates to the separation performance. Method transfer from GC to GCMS or helium to hydrogen carrier is greatly facilitated.

### Constant linear velocity



### Constant column inlet pressure

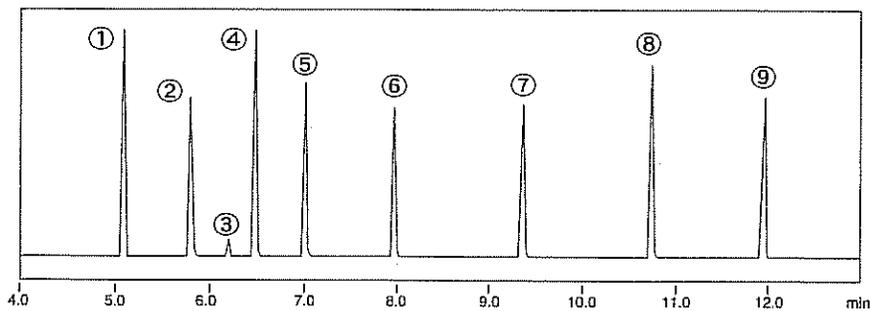


Comparison of chromatograms with constant linear velocity (top) and constant column inlet pressure (bottom) (pesticides analysis)

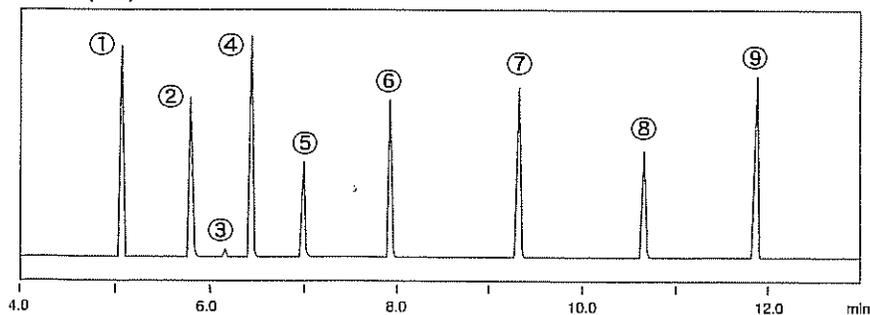
Using the same type of column and setting the same carrier gas linear velocity values results in a virtually identical separation profile for GC and GCMS.

### Comparison of GC-FID and GC/MS-TIC Chromatograms (Grob Test Mixture Analysis)

#### GC-FID



#### GC/MS(TIC)



# Shimadzu Gas Chromatograph Wor

## Features of GCsolution Ver.2 (Windows Vista Compatible)

### Easy Operation

- Common operation and layout with other LabSolution software, such as Assistant Bar and Data Explorer, ensures an intuitive common user interface that can be easily learned. GCsolution Ver.2 realizes further simple operation.
- Manipulation function is improved and simple operation with versatile functions are realized.

### Better Analysis Productivity

- Handles control and data processing for up to four GC systems (GC-2010 Plus, GC-2010, GC-2014, GC-17A, or GC-14B)
- Supports simultaneous processing of two samples on a single instrument and dual injection system for the ultimate in high throughput analyses.

### Comprehensive Basic Functions

- Inherits the popular, proven and robust Chromatopac and CLASS-GC10 integration algorithm.
- Comprehensive functions for peak identification, quantitation, and data comparison.
- Flexible report generation functions with operation similar to MS-Word.
- Summary report output is possible.

### GLP/GMP Compliance

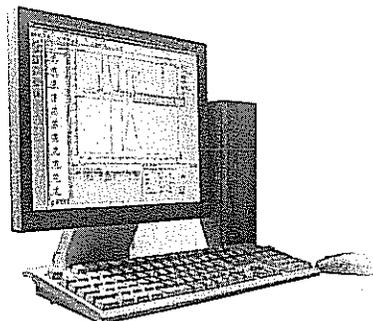
- Full support of user management functions and GC-2010 Plus self-diagnostic functions to enhance data reliability. Supports rigorous GLP/GMP requirements, including audit-trail functions for all method parameters.
- 21 CFR Part 11 compliance support functions are equipped as standard.

### Network-compatibility

- Effective use of the network environment, such as in-office data analysis and remote access from the office is possible.
- CLASS-Agent provides file sharing and centralized data management.

### Customization of User Interface

- OLE automation capability allows custom programming to accommodate customer specific workflow requirements. Custom programming may incur additional fees.



# Station

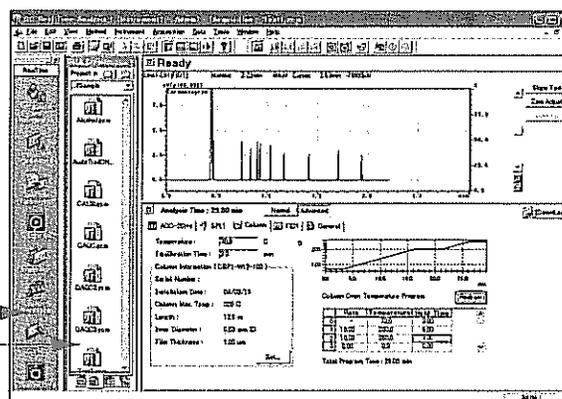
## User Interface

The latest Windows technologies offer multifunctionality and simple operation. User interface including drag-and-drop and right-click menus offers quick and intuitive operation.

### Easy-to-operate Assistant Bar and Data Explorer

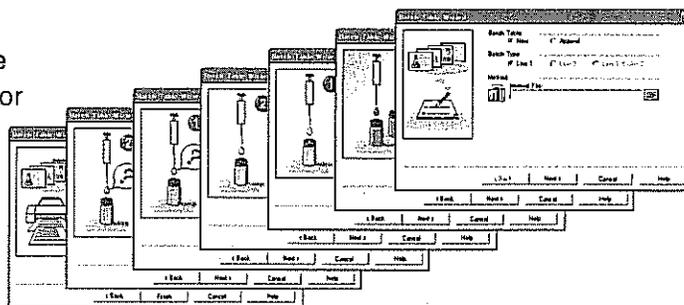
- Navigate operations with Assistant Bar. Even novices can easily conduct analysis or re-analysis simply by sequentially clicking on icons.
- Data Explorer displays a list of files by type. Intuitively handle file operations by double-clicking or drag-and-drop.

Assistant Bar  
Data Explorer



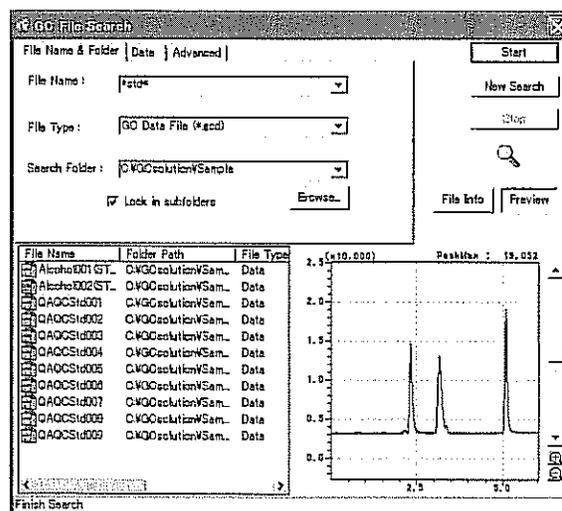
### Batch Table Wizard Simplifies Consecutive Analyses

- Easily create batch tables for consecutive analysis of multiple samples using the Wizard.
- Simply fill in the prompts in the Wizard to create multi-point calibration curves and batch tables for repeated analyses.



### File Search Function offers Convenient Previews

- Search any data file or method file.
- Search by file name, date, operator's name, sample name, or sample ID.
- Use the preview function to check the chromatogram in the searched data files before opening the file.



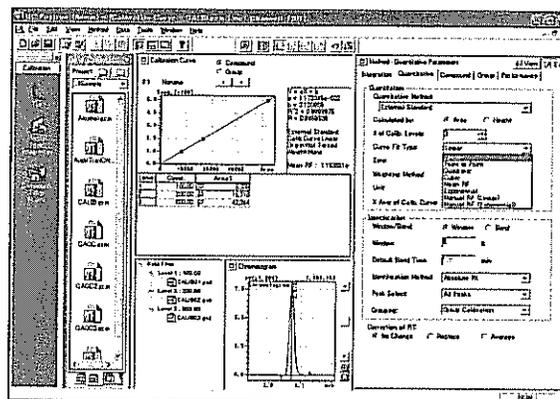
# Shimadzu Gas Chromatograph Workstation

## Data Analysis / Report Generation

Builds on the popular Chromatopac and CLASS-GC10 basic functions, including integration algorithms. Offers comprehensive functions for identification, quantitation, data comparison, and report generation.

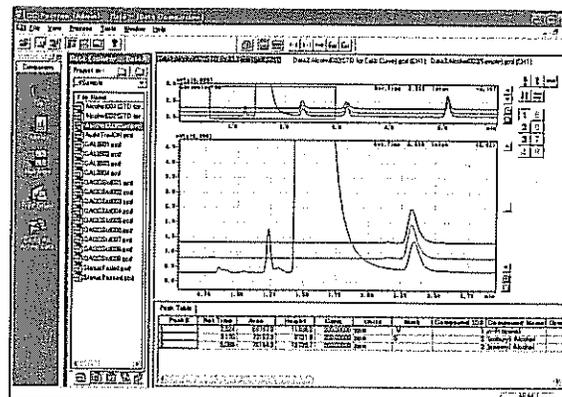
### Identification and Quantitation Functions using Various Types of Calibration Curves

- Support for six quantitation methods, such as external and internal standard methods, and seven types of calibration curves, including linear, point to point and polynomial fits, ensures compatibility with an extensive range of requirements.
- Calibration curves can be created by dragging and dropping data files into the calibration window.



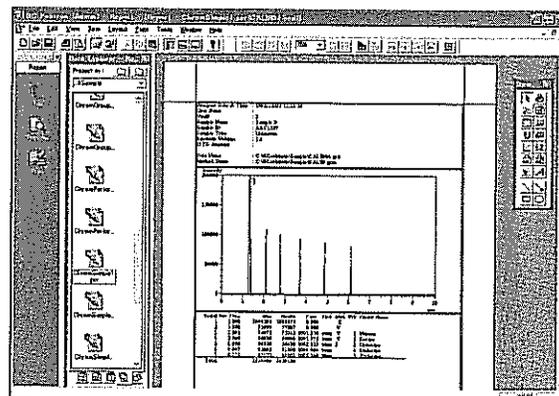
### Data Comparison Function

- Display and compare up to eight chromatograms.
- Convenient for comparison of previous data and investigation of changes in time-course data.
- Select superimposed or split-screen display.
- Conduct detailed analysis using addition, subtraction, differential, and second-order differential operations.



### Flexible Report Generation Functions

- Highly flexible report generation.
- Paste and freely edit chromatograms and peak tables.
- Save report formats as templates.



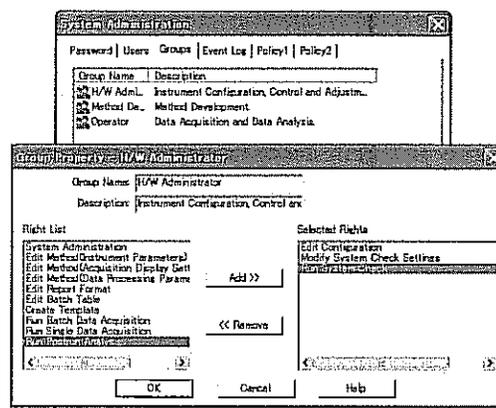
# Station

## GLP/GMP-Functions

To be compliant with management requirements and regulations such as GLP/GMP, a variety of sophisticated demands related to: analyzer reliability, method development, analysis method validation, and electronic file management must be satisfied to ensure data integrity. GCsolution strongly supports GLP/GMP with various validation functions, user management functions and so on. Also, 21 CFR Part 11 compliance support functions are equipped as standard.

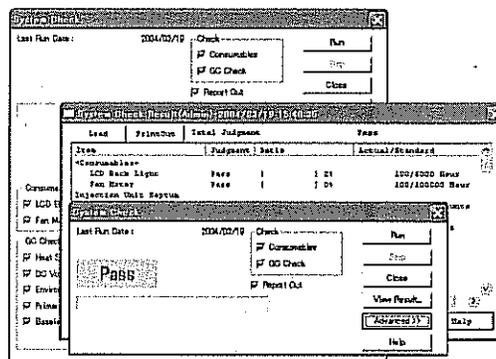
### User Management Functions to Control User Access

- Limit user access to operations by setting operation restrictions for the Administrator, Method Developer, and Operator default user groups.
- Add or edit groups to create security that matches your laboratory work format.



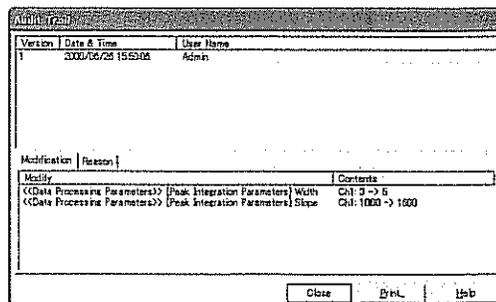
### Validation Support - fully supports GC-2010 Plus self-diagnostic functions

- Fully supports the GC-2010 Plus self-diagnostic functions. Periodic checks of the GC status support superior analysis and greater confidence in your results.
- Includes software-validation functions to check for software modifications.
- QA/QC functions offer pass/fail evaluation based on repeatability of component concentrations, recovery rate, or check of concentration upper/lower limit.

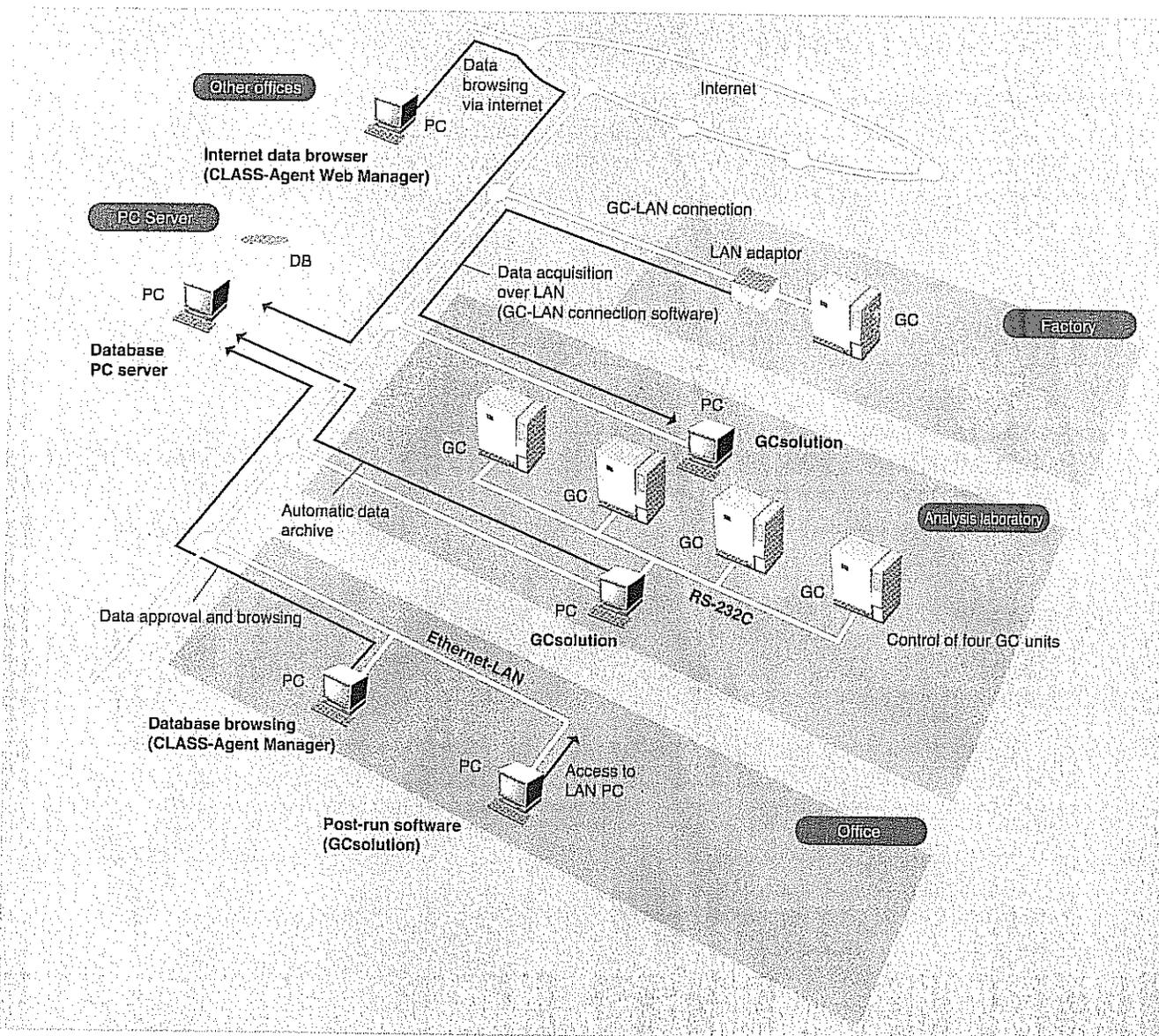


### Audit Trail including Parameter Setting Log

- The changes and the reasons for the changes to instrument parameters and data-processing parameters can be saved to confirm the traceability of consecutive analysis results.
- Data files contain the method used for data acquisition and the latest data, allowing data to be reverted to the pre-analysis state.



## Network-compatibility



### CLASS-Agent for Centralized Data Control

#### CLASS-Agent Data Management System

- Software for centralized data management.
- Measured data automatically saved in the database.
- Browsing software easily finds target data.
- Browse data over the Internet.
- Compatible with Oracle, Access, and SQL databases.

#### GCsolution Post-run Software

Install the secondary license software in a separate PC on the LAN to allow data analysis in the office.

#### GC-LAN connection software

- Offers remote GC control and data acquisition in a LAN environment.
- Connects the GC instrument to PCs over a LAN using a LAN adaptor.



# Application systems respond to your analytical needs.

## Advanced Flow Technology

Backflush System

Detector splitting system

Multi-dimensional GC/GCMS System  
MDGC/GCMS-2010 Series

## Application Systems

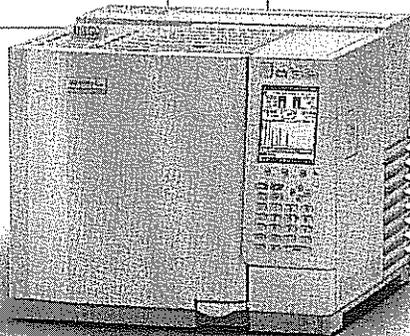
Thermal Desorption System

Liquid Injection/ Headspace/ SPME Analysis System

Pyrolysis System

Distillation GC System

PONA Analysis System



## Application Systems

### Thermal Desorption System

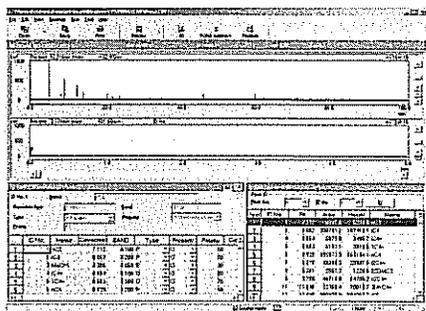
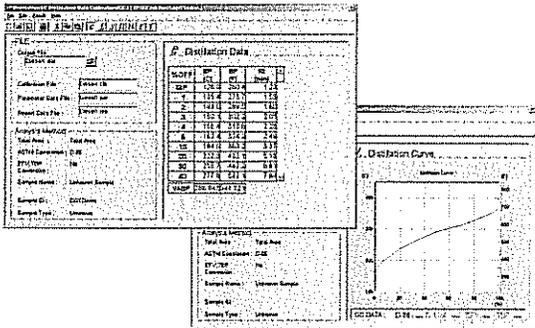
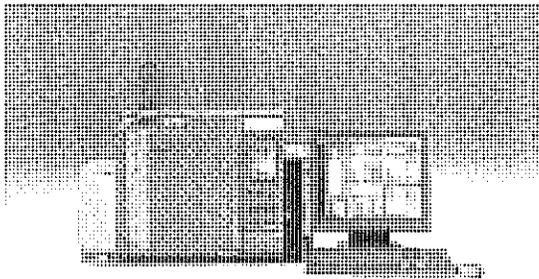
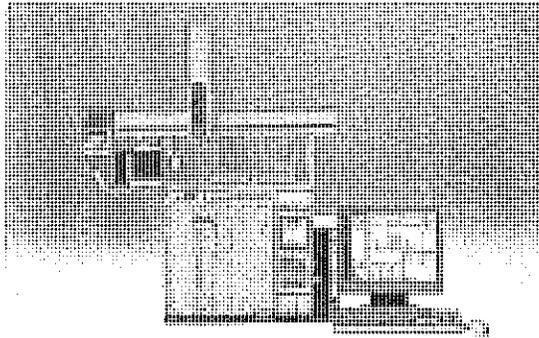
- Used to analyze gas sample tubes – organic vapors are collected on sample tubes at a sample site by drawing a large volume of air thru the tube over a long period of time.
- Sample tubes are thermally desorbed on the Thermal Desorption System to introduce the organic vapors into the GC.

#### System Configuration

- GC-2010 Plus + TD-20

#### Analysis Applications

- Measurement of air pollutants
- Measurement of gases generated from parts or materials (outgassing)
- Measurement of fragrance components



## Liquid Injection/ Headspace/ SPME Analysis System

- Liquid, Large volume, Headspace and SPME injection in one single instrument.
- Used to analyze the volatile components in solid or liquid samples.

### System Configuration (GC with headspace sampler)

- GC-2010 Plus + AOC-5000

### Analysis Applications

- Measurement of residual solvents in pharmaceuticals
- Measurement of flavor components in foods
- Upgradable to SPME mode (solid micro extraction)

## Pyrolysis System

- Decomposes samples at high temperatures and analyzes the pyrolytic decomposition products.
- Used to analyze high molecular weight compounds such as polymers, forensic samples etc.

### System Configuration (GC with double-shot pyrolyser)

- GC-2010 Plus + PY-2020iD
- Autosampler and cryotrap accessories available.

### Analysis Applications

- Characterization of high molecular weight compounds
- Measurement of outgassing from inorganic samples, such as ceramics

## Distillation GC System

- Measures the boiling point distribution of petroleum fractions using the relationship between retention time and boiling point.
- Prints formatted reports after analysis of distillation characteristics.

### System Configuration (Distillation GC)

- GC-2010 Plus + WBI-2010, or OCI-2010 + GCsolution + distillation GC software  
(Select sample injection unit and column to suit the target sample.)

### Analysis Applications

- Petroleum fractions

## PONA Analysis System

- Separates gasoline or other hydrocarbon compounds; identifies the peaks; classifies them by carbon number, paraffin, olefin, naphthene, aromatic series and oxygenates. Outputs quantitative results.

### System Configuration (PONA GC)

- GC-2010 Plus + CRG-2010 + GCsolution + PONA solution + MS Excel  
(Select sample injection unit and column to suit the target sample.)

OCI and high-power oven (230V) are required for high-boiling point component analysis.

### Analysis Applications

- Categorization of naphtha, gasoline and gasoline-based materials by carbon number and quantitation by type.  
(Also offers calculation of mean specific gravity, mean molecular weight, and octane value.)



JQA-0376

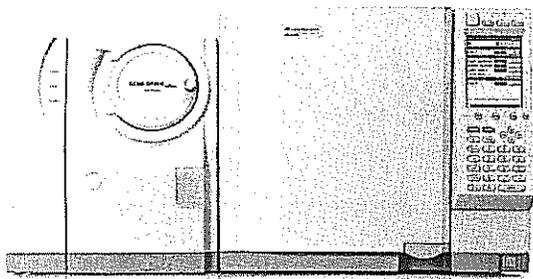
Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at [www.shimadzu.com](http://www.shimadzu.com)



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## Specification Sheet

# GCMS-QP2010 *Ultra*



The GCMS-QP2010 Ultra is our most advanced gas chromatograph mass spectrometer. Descended from the GCMS-QP2010 Plus, it features best-in-class scan speed and sensitivity. A newly designed and patented technology called ASSP (Advanced Scan Speed Protocol) allows this GC-MS to scan at 20,000 u/sec without sensitivity loss or spectral distortion. The result is an instrument that is perfect for "Fast GC" or Comprehensive GC/MS (GC × GCMSq) analyses. Productivity and sample throughput can be dramatically increased. Ecology mode saves power and carrier gas consumption allowing for a lower cost of ownership and less environmental stress.

### Instrument

#### GC

Model:	Shimadzu GC-2010 Plus
Oven temperature:	Up to 450°C
Injector port temp:	Up to 450°C
AFC pressure range:	0 to 970 kPa
Column oven temp:	Up to 450°C
High-power oven with fast heat-up rate compatible with fast GC-MS (230 VAC)	

#### MS

##### [GCMS Interface]

Type:	Direct connection with capillary column
Temperature:	50 to 350°C

##### [Ion Source]

Model:	EI (Standard), PCI (Option) EI, PCI and NCI with NCI source (Option)
Ion source temperature:	140 to 300°C
Filament:	Dual (Automatic Switching)
Electron energy:	10 to 200 eV
Emission current:	5 to 250 µA
Front access structure for easy maintenance	

##### DI (Option)

Temp. setting:	Room temp. to 500°C
----------------	---------------------

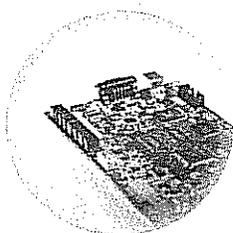
##### [Mass Analyzer and Detector]

Mass analyzer:	Metal quadrupole mass filter with pre-rod
Mass range:	<i>m/z</i> 1.5–1090
Mass resolution:	2M (FWHM)
High-speed scanning control:	Advanced Scanning Speed Protocol (ASSP)
High-speed scan rate:	20,000 u/sec
Minimum measurement interval:	0.01 s (Maximum 100 scan/sec)
Detector:	Secondary electron multiplier with the patented overdrive lens and conversion dynode
Main pump:	Differentially pumped vacuum system (179/185 L/sec for He)
Fore pump:	30 L/min (60 Hz) Rotary pump
Column flow:	Up to 15 mL/min (He)

Taking GC-MS to the Limit

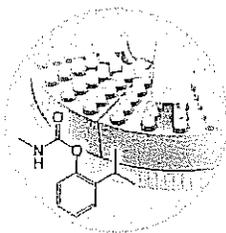
# GCMS-QP2010 *Ultra*

Gas Chromatograph Mass Spectrometer



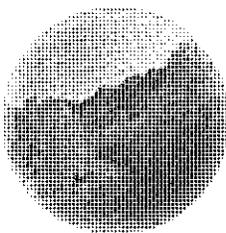
## High-Speed Performance — PP. 6-7

- Achieves a maximum scan speed of 20,000 u/sec
- ASSPT™ technology provides greater sensitivity
- Ultra-fast data acquisition rates ideal for comprehensive GC×GC and Fast-GC



## Increased Productivity — PP. 8-9

- Analysis cycle time cut in half\*
- Significantly reduced maintenance downtime\*
- Easy exchange of columns for improved productivity\*



## Eco Friendly — P. 16

- 36% reduction in power consumption in analysis standby mode\*
- 30% reduction in CO<sub>2</sub> factory emissions\*\*

There is increasing public interest in the analysis of trace compounds that contribute to environmental pollution, affect human health and in research related to novel compounds. Reducing running costs and lessening the impact on the environment by increasing analytical efficiency and decreasing power consumption are universal goals. The GCMS-QP2010 Ultra was developed by engineers who accepted the challenge to meet these needs.

\* Based on our specified conditions

\*\* Compared with previous model

# Superior Mass Spectrometry Technology

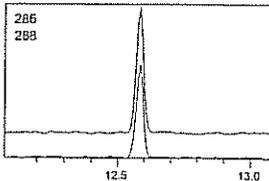
Superior Technology That Achieves High Sensitivity and Stability

## High-Efficiency Ion Source

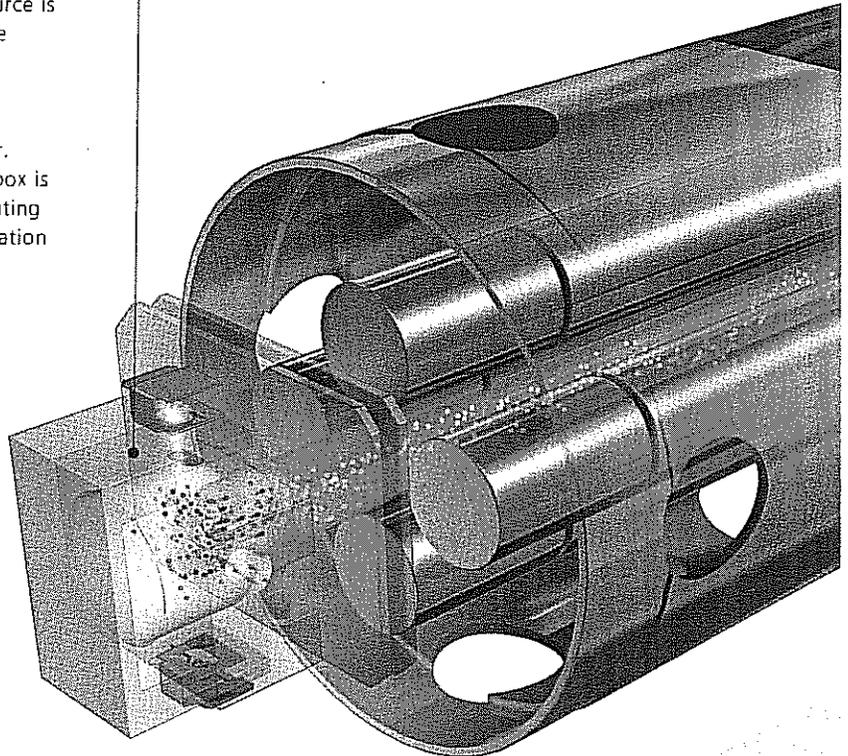
Provides the foundation of an ion generation and transmission system which efficiently creates, then delivers, ions to the detector, resulting in a GC-MS with the highest sensitivity specification in its class.

The effect of filament potential on the ion source is reduced by placing more distance between the filament and ion source box along with the addition of a shield plate. The result is that a higher percentage of the generated ions are transported to the optical system and detector. Another benefit of this design is that the ion box is maintained at an uniform temperature, eliminating hot and cold zones. The result is that condensation and thermal breakdown can be managed.

(Patent pending)



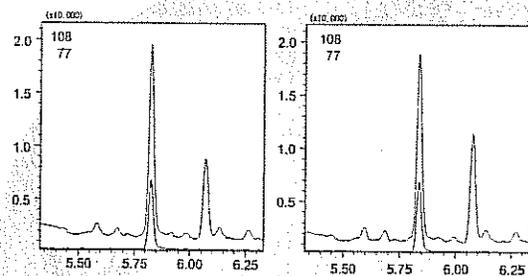
High-sensitivity analysis of chlorpyrifos-methyl (5 ppb)



## High-Capacity Differential Vacuum System

A high-capacity dual-inlet turbomolecular pump with a differential vacuum system maintains dual zone vacuum and enables the column flow rate to be set to a maximum of 15 mL/min.

Twin Line column system allows two capillary columns to be simultaneously installed into the mass analyzer without loss of sensitivity.



Chromatogram of chloroacetic acid methyl ester (25 ppb)

Left: Twin Line MS analysis

Right: Single column analysis

## High-Speed Scanning Control (Advanced Scanning Speed Protocol, ASSP™)

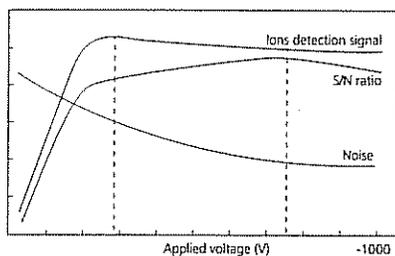
The rod bias voltage is automatically optimized during ultrahigh-speed data acquisition, thereby minimizing the drop in sensitivity that would otherwise occur above 10,000 u/sec. The GCMS-QP2010 Ultra achieves a level of sensitivity better than five times that of older instruments, and is particularly effective for scan measurement in applications related to fast-GC/MS and Comprehensive GC/MS (GC×GC/MS).

(Patent: US6610979)

## Overdrive Lens (Noise Elimination Technology)

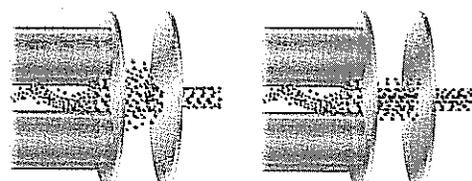
The addition of an overdrive lens, positioned in front of the electron multiplier, serves to reduce the random noise that occurs with ion transmission, improving the S/N ratio. When applied, this lens acts as a filter designed to remove low mass ions that would otherwise interfere with the spectral scan.

(Patent: US6737644)



Correlation between applied voltage to over-drive lens and S/N

● Sample  
● Noise



Overdrive lens  
OFF

Overdrive lens  
ON

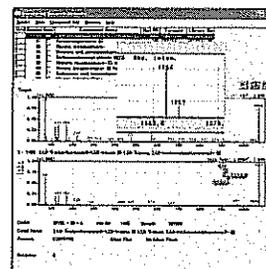
Noise elimination by overdrive lens

## High-Performance Quadrupole Mass Filter

Combining a quadrupole mass filter designed for high precision with Shimadzu's patented technology for mass scanning produces ideal mass filter characteristics (Patent: US5227629).

This system includes a removable and easily cleaned pre-rod lens that reduces contamination of the rod assembly which would otherwise occur with long-time use.

The GCMS-QP2010 Ultra can perform manual mass calibration by using fragment ion  $m/z$  1066 of Tris(perfluorononyl)-S-triazine (molecular weight 1485) as well as mass calibration by auto-tuning. This feature makes it possible to obtain accurate mass assignment across the entire mass range.



Confirmation of mass spectrum of  
Tris(perfluorononyl)-S-triazine

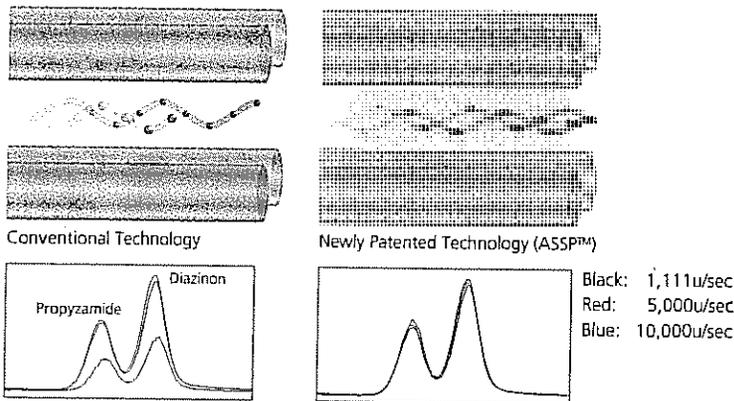
# Ultra Fast

## Equipped with High-Speed Data Acquisition and Processing Via the Newly Developed ASSP™ Function

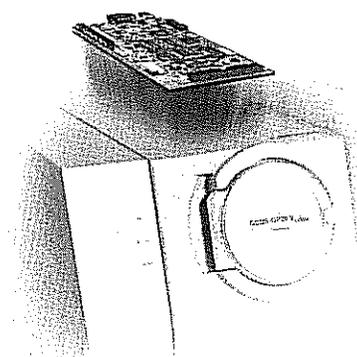
The relatively slow scan speeds of older GC-MS systems have proven to be a limiting factor when adapting the techniques of "Fast GC" or comprehensive GC×GC to the quadrupole GC-MS platform. Data acquisition speeds of 30 Hz or less and 10,000 u/sec are marginal at providing enough points across an ultra sharp, fast GC or a GC×GC peak for reliable quantitation.

A new technology has been developed which allows us to increase the scan speed of our GC-MS system. This technology, Advanced Scanning Speed Protocol (ASSP™), is the key to faster data acquisition.

Incorporated in the new GCMS-QP2010 Ultra, it is a firmware protocol that optimizes the ion transmission hardware parameters combined with a highly efficient data collection algorithm allowing acquisition speeds of 20,000 u/sec and 100 Hz. ASSP™ provides the added benefit of maintaining system sensitivity at elevated scan speeds and virtually eliminates mass pattern skewing. (patent: US6610979)



Variation of chromatogram intensity at each scan speed  
ASSP™ optimizes the ion transmission optics to maintain ion signal intensity across the entire mass range as the scan speed of the system increases.



## High Sensitivity and High Speed Scanning

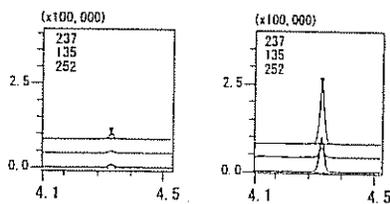
Fast GC/MS analysis is performed using ultra narrow-bore capillary columns. The resulting peaks are very sharp and elute very quickly. To fully define these peaks, between 10 to 20 points are needed. In most cases, data collection at the conventional rate of between 10 and 30 Hz is inadequate. The GCMS-QP2010 Ultra provides the solution with 20,000 u/sec scan rate and 100 Hz collection and processing speed.

### Improved Sensitivity

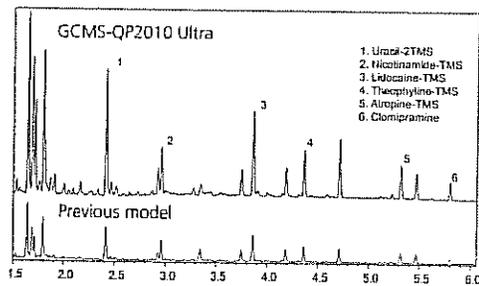
During high-speed scan analysis, a decrease in ion signal strength is observed in older GC-MS systems. ASSP™ acts to minimize these drops which result in a higher signal to noise ratio and thus, overall greater sensitivity.

### Mass Spectrum Pattern

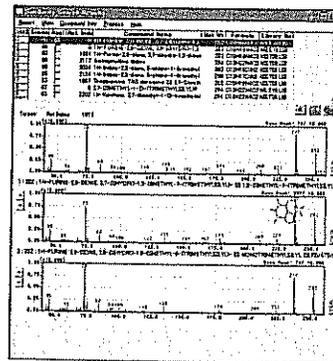
The ASSP™ function makes it possible to reduce the drop in sensitivity that may occur in the high mass region of a spectral scan. This means that high quality results can be obtained in library-based similarity searches.



Mass chromatogram of Theophylline-TMS  
Left: Previous model Right: GCMS-QP2010 Ultra



TIC of Fast GC/MS at 10,000 u/sec



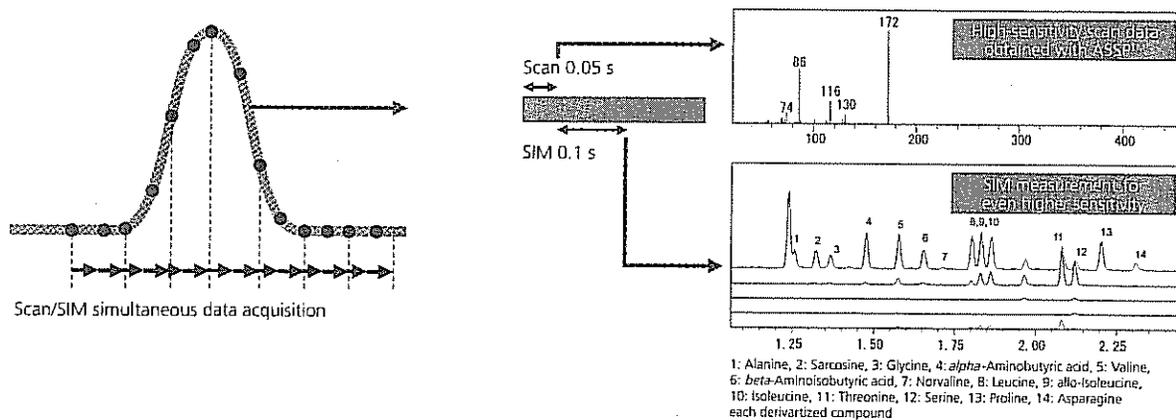
Measurement mass spectrum

Library data

Similarity search of mass spectrum obtained at 10,000 u/sec

## Scan/SIM Analysis Improved using ASSP™

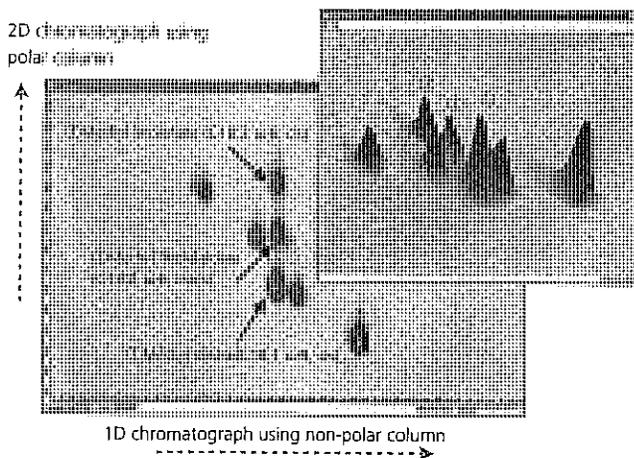
FASST (Fast Automated Scan/SIM Type) is a data acquisition technique that allows the user to collect scan data and SIM data in a single analysis. It is used in the dual role of collecting qualitative Scan data and quantitative SIM data. Applying ASSP™ technology allows the user to collect more channels of SIM data in a SIM/scan cycle by allowing the SIM dwell times to be shortened by as much as 5 times over the previous model.



Amino acid analysis in simultaneous Scan/SIM data acquisition

## Comprehensive 2 Dimensional Gas Chromatography (GC×GC)

Comprehensive (GC×GC) chromatography is a powerful technique that combines two capillary columns of complementary, orthogonal stationary phases, using a mid-point modulating device. The resulting peaks are very narrow and fast eluting, requiring very fast data collection rates to properly measure.



Separation of the trans and cis forms of a fatty acid methyl ester

GCMS-QP2010 Ultra delivers the high-speed scanning that the GC×GC technique demands. ASSP™ facilitates data collection and processing without compromising sensitivity or spectral integrity.

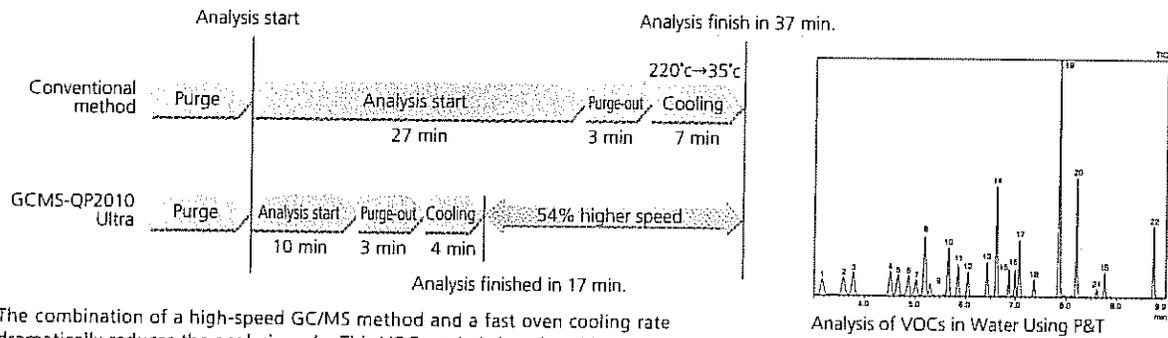
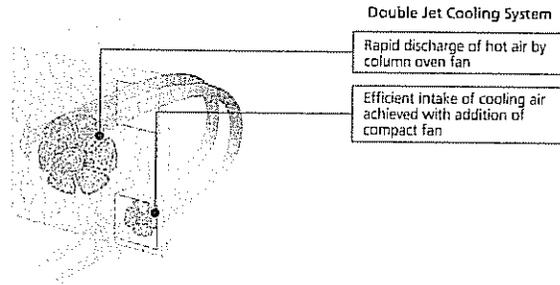
# Enhanced Throughput

## Variety of Functions for Enhanced Productivity in the Laboratory

Reduction of analysis time, shortening of maintenance time and quick column exchange are productivity enhancing measures desired by every busy lab. The GCMS-QP2010 Ultra is equipped with a variety of functions that fulfill these requirements.

### High-Speed Oven Cooling for Shorter Analysis Cycle

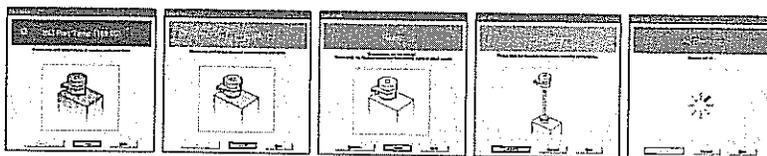
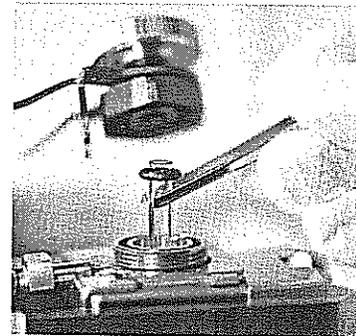
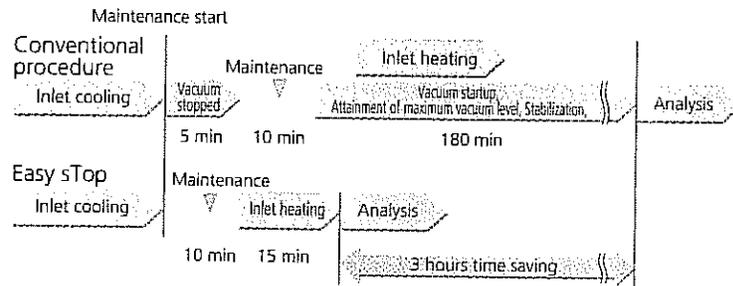
The GC is able to cool from 350°C to 50°C in approximately 2.7 minutes, an improvement of 2.6 minutes from the previous model. This was accomplished thru the development of a "double jet cooling system". Imagine your VOC analysis cycle time being cut in half. The GCMS-QP2010 Ultra makes this a reality by combining Fast GC technology with rapid oven cooling, effectively increasing sample throughput in your lab!



The combination of a high-speed GC/MS method and a fast oven cooling rate dramatically reduces the analysis cycle. This VOC analysis is reduced by more than half.

### Easy sTop for Major Reduction of Maintenance Time

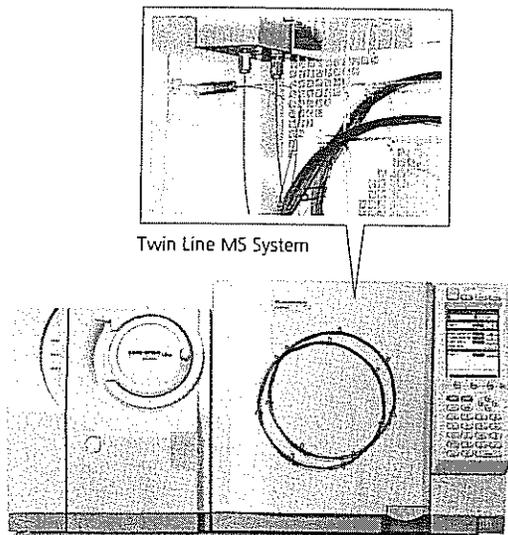
Many applications require that the injection port undergoes maintenance on a frequent basis. With the GCMS-QP2010 Ultra, maintenance is possible without venting the MS so downtime is minimized.



The Easy sTop navigator assists in taking the appropriate steps.

## Twin Line MS System Eliminates the Need to Swap Columns

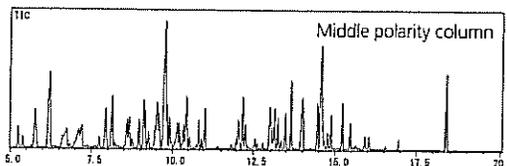
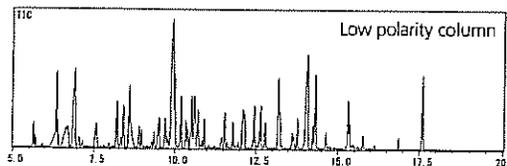
The GCMS-QP2010 Ultra is capable of accepting installation of two narrow-bore capillary columns into the MS simultaneously. This allows you to switch applications without physically modifying the column installation. Simply decide which column is best for your analysis and choose the associated injection port.



Twin Line MS System

Installing two columns in one MS is possible with the GCMS-QP2010 Ultra because of its high-capacity dual-inlet turbomolecular pump.

\* The Twin Line MS System requires an optional installation kit and is limited to certain column dimensions.



Analysis of flavor and fragrance components using complementary column phases

Sensitivity Comparison Table

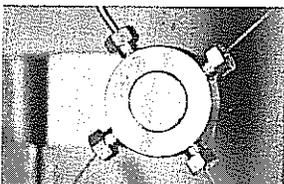
Compound	Single Column	Double Column
Methamidophos	1149179	1132498
DDVP (Dichlorvos)	392962	388569
EPTC	632087	641883
Butylate	455472	442888
Acephate	1803821	1903527
MIPC (Isoprocarb)	1029203	1052476
BPMC (Fenobucarb)	1527113	1544812

Column flow rate 1.7 mL/min  
Column total flow rate 3.4 mL/min

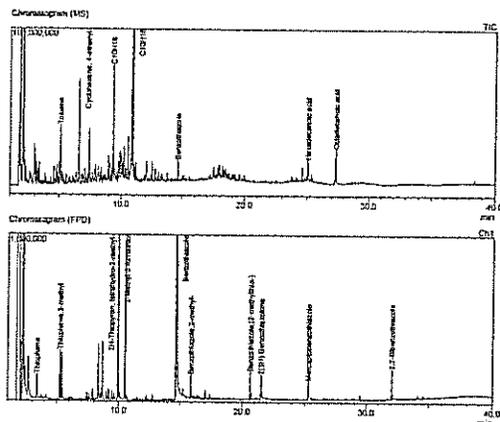
## Simultaneous Data Acquisition with Two Detectors Improves Efficiency of Data Comparison Work

By splitting the flow at the end of the analytical column and sending the eluted components to multiple detectors, the chromatographer is able to acquire multiple chromatograms simultaneously. This technique is useful for various applications. One example is a single injection into an analytical column, where the effluent is split to an FPD and MS, providing positive identification and allowing for selective GC detection with quantitation in the same run.

### Advanced Flow Technology



Sample loss is reduced with a deactivated splitting device.



Simultaneous detection using MS and FPD of a pyrolyzed rubber sample  
Sulfur compounds are selectively detected by the FPD and qualitative analysis is performed using the mass spectrometer simultaneously.



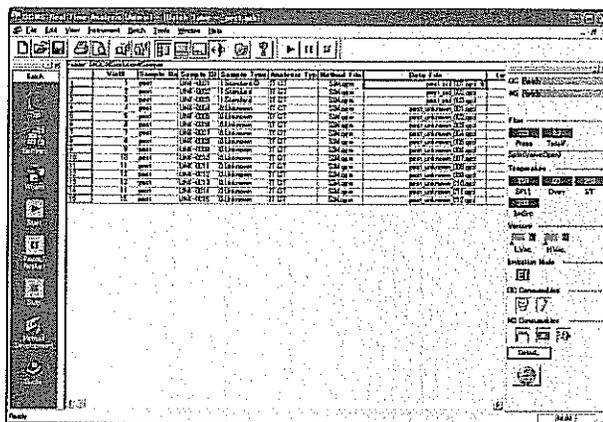
## Workstation Software Combines Ease of Use and Versatile Functionality GCMsolution

GC/MS analyses require optimization of many operating parameters. Data analysis may require many calibrations to be performed, and many unknowns to be quantified with results reported. GCMsolution workstation software combines ease of use with versatile functionality to effectively perform these tasks.

### GCMS Analysis Program

This program performs the batch processing settings required for the GC-MS instrument configuration, MS tuning, analytical condition settings, and continuous analysis. Indication of the usage frequency of consumable items provides a convenient guide for maintenance. There is also an "MSNAVIGATOR," which provides detailed assistance for maintenance with photos. In addition, GCMsolution is newly equipped with an "Ecology mode" function used to save power and carrier gas consumption.

In order to maintain the integrity of sample information, files used to manage sample names and ID numbers are loaded directly to GCMsolution software, registered in the acquired data, and output to reports. This helps improve the reliability of data information.



Analysis Program Window

By selecting the Ecology mode, consumption of electric power in standby mode and carrier gas usage can be reduced. Ecology mode can be entered automatically at the end of a batch or series of batch runs.



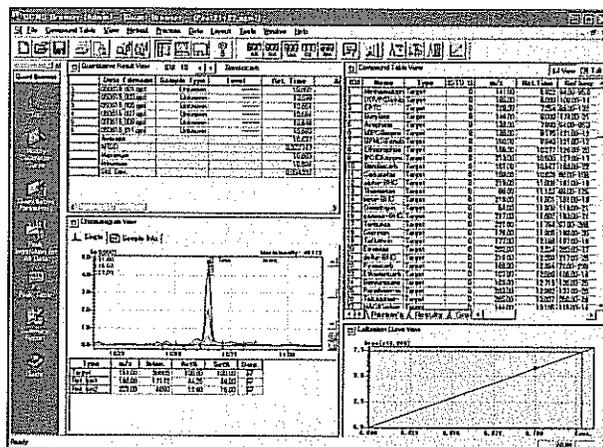
### GCMS Browser Program

#### Quantitation Browser

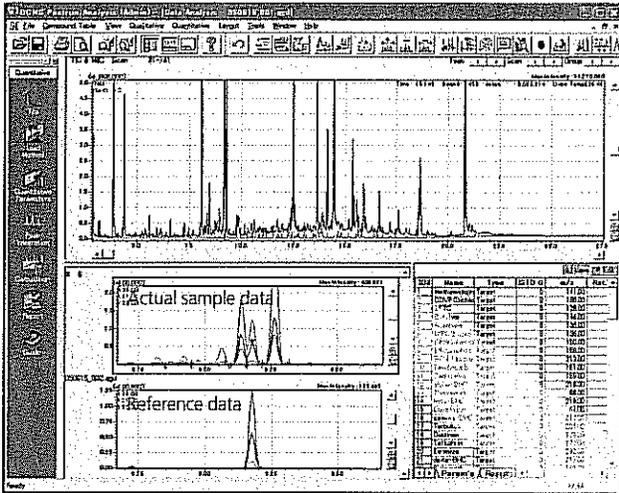
Browser is an off-line program allowing the user to perform statistical analyses and monitor quality control from batch runs or on multiple data files. Apply modified method post-run processing parameters to previously run data very quickly and instantly see the new results.

#### Data Browser

This function is used to compare chromatograms or mass spectra of multiple data files.

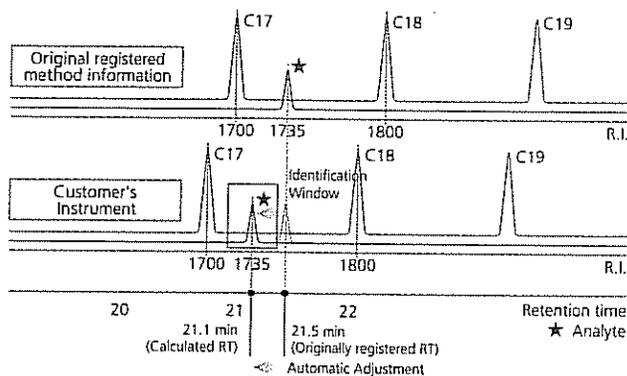


Quantitative Browser Program Window



# Functions Using Retention Indices

## Automatic Adjustment of Compound Retention Time (AART)

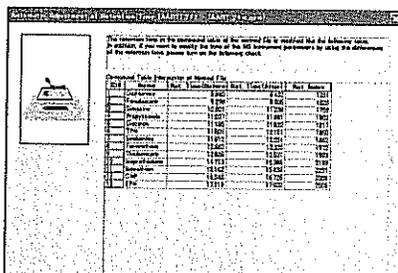


The AART (Automatic Adjustment of Retention Time) function can estimate the retention times of target components from retention indices and the retention times of an alkane standard mix\*.

\* Requires alkane mix which is sold separately.

1 n-Alkane Analysis

2 AART execution



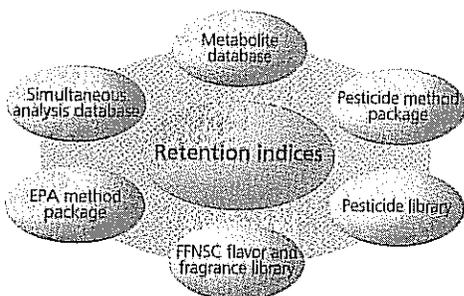
3 Adjustment of retention time

Compound Name	Predicted RT	Measured RT	RT Error
Mono-BDE (BDE-001)	1.551	1.554	-0.003
Mono-BDE (BDE-002)	1.745	1.746	-0.001
Mono-BDE (BDE-003)	1.968	1.960	0.008
Di-BDE (BDE-010)	5.192	5.174	0.018
Di-BDE (BDE-007)	6.292	6.267	0.025
Di-BDE (BDE-008&BDE-011)	6.782	6.761	0.021
Di-BDE (BDE-012)	7.098	7.076	0.023
Di-BDE (BDE-013)	7.157	7.132	0.025
Di-BDE (BDE-015)	7.542	7.517	0.025
Tri-BDE (BDE-030)	9.588	9.554	0.034
Tri-BDE (BDE-032)	10.857	10.822	0.035
Tri-BDE (BDE-017)	11.299	11.263	0.036
Tri-BDE (BDE-025)	11.379	11.344	0.035
TTC Tri-BDE (BDE-028L)	11.894	11.851	0.033
Tra-BDE (BDE-038&033)	11.894	11.863	0.021
Tra-BDE (BDE-038)	12.270	12.235	0.035

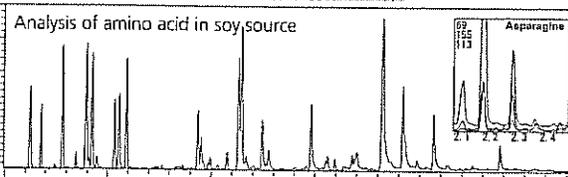
Adjustment can cover many points, from low boiling points to high boiling points, so accurate adjustment is possible over a wide retention time range.

## Databases Using Retention Indices

There are databases for environmental analysis, food analysis, and clinical analysis. Retention indices can be used effectively for the identification of components, as well as the adjustment of retention times.

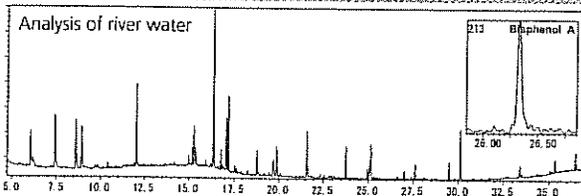


### GC/MS Metabolites Spectral Database



This database consists of a mass spectra library (with retention indices) for amino acids, fatty acids, and organic acids and method files in which analytical conditions and data analysis conditions for the analysis of amino acids, fatty acids, and organic acids are set.

### Compound Composer Database Software for Simultaneous Analysis (Environmental Analysis)



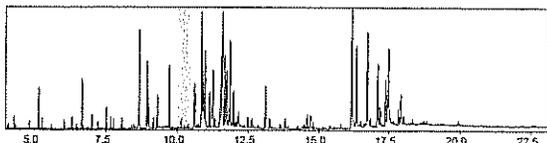
Simultaneous GC/MS analysis supporting identification and quantification of 942 environmental pollutants can be performed. The retention times and calibration curve information of environmentally hazardous chemical substances are registered, so approximate concentrations can be obtained with compounds even when it is difficult to obtain standards.

# Applied Data Analysis

## Metabolome Profiling Analysis

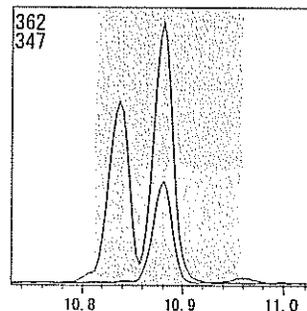
Metabolome analysis (Metabolomics) can be used for the comprehensive analysis of metabolites in a wide variety of fields. For example, it is used in the field of medicine for diagnostic marker discovery and pathogenic analysis, in the field of pharmaceuticals for the discovery of biomarkers that express drug efficacy and toxicity, and in the field of food products for quality control and prediction.

GC/MS offers high-resolution chromatographic data and produces mass spectra that are unique to each compound, and is therefore suited to the separation and detection of large numbers of metabolites. The database includes retention indexed spectra for positive identification of specific metabolites.



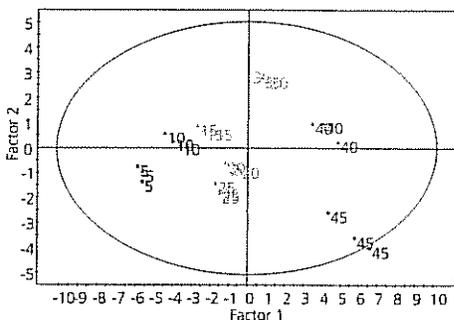
Sample extracted from green tea leaves: 71 components, including sugars, amino acids, and organic acids, can be identified

Easy identification of multiple components using database



Leucine

Retention time calculation using the AART function enables the accurate identification of components.

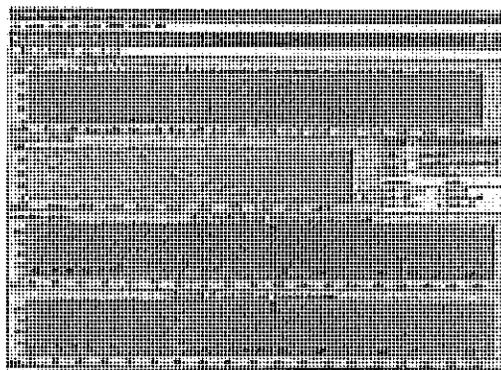


### Multivariate Analysis (Principal Component Analysis (PCA) Score Plot)

These are the results of examination of the differences among green tea leaves of different rankings. The numerals in the figure indicate the rankings assigned in a tea competition. With respect to principle component 1, the higher ranked tea leaves and the lower ranked tea leaves are positioned separately to the right and left sides of the graph, clearly indicating their quality differences.

## Data File Conversion Function

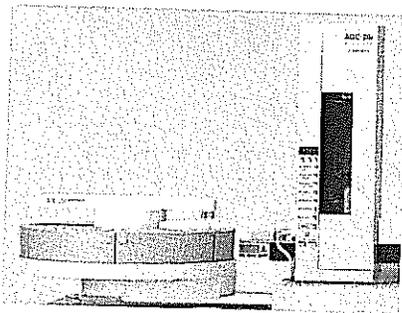
GC-MS measurement data can be converted to AIA, JCAMP, ASCII, mzData, or mzXML format for output. Private libraries can also be converted to JCAMP format. This bolsters support for combined use with the AMDIS program provided by NIST. The AMDIS program allows the identification of target components and the discovery of unknown components using a mass spectrum deconvolution function. (The NIST Library must be purchased separately.)



Deconvolution analysis using AMDIS program

# A Comprehensive Range of Accessories

## AOC-20i/s Automatic Liquid Sample Injection System

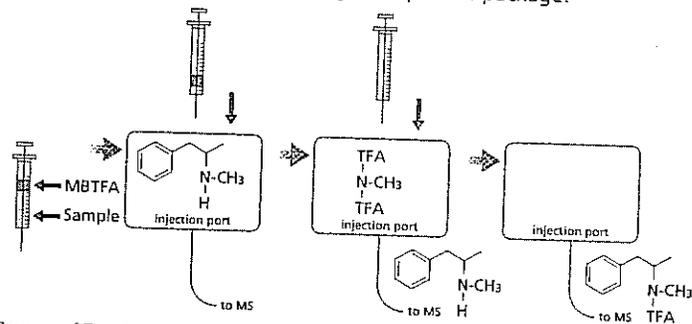


The AOC-20i autoinjector is capable of holding up to a maximum of 15 vials (150 vials if the AOC-20s sampler is installed). The selection of microsyringes consists of a standard 10µL type, small-capacity 0.5µL and 5µL types, and large-capacity 50µL and 250µL types.

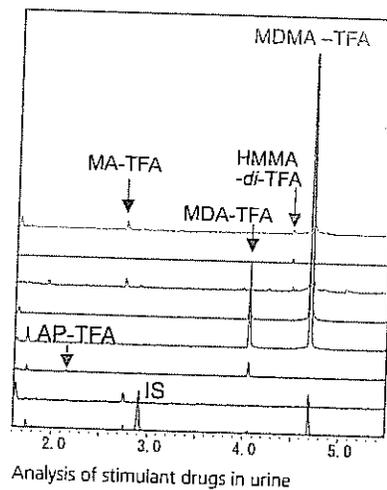
The solvent flush method, where solvents and standard samples are held in the syringe together with samples obtained from the vials before injection, can also be used. Using two AOC-20i units simultaneously makes it possible to introduce the same sample into two injection ports and implement two lines of analysis using MS and GC detectors. The Twin Line MS System allows analysis to be performed alternately between two columns of different phase chemistries.

### Two-Step On-Column Derivatization

On-column derivatization, where the sample is derivatized inside the column, is now possible. This is effective for the analysis of stimulant drugs, such as amphetamine, methamphetamine, and MDMA, in urine. Until now, the derivatization procedure required manual preparation that took 30 minutes. Now, this procedure can be completely automated and performed in only 4 seconds using the optional package.



Process of Two-Step On-Column Derivatization



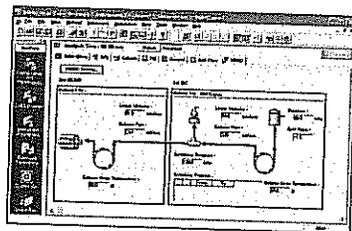
Analysis of stimulant drugs in urine

## Advanced Flow Technology

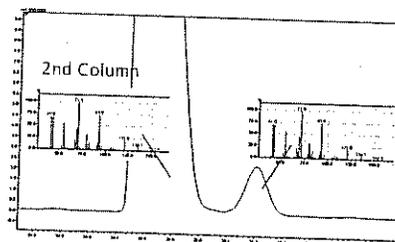
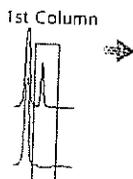
Shimadzu Advanced Flow Technology series includes the following:

- Multidimensional system for high-resolution chromatography
- Heart-cut system for high-resolution chromatography at a lower cost
- Backflushing kit to reduce the analysis time
- Detector-splitting kit to enhance identification capability
- Detector-switching system to introduce target components into the appropriate detector

Specialized software is available for each technique, providing powerful support for the determination of complex analytical conditions.



Parameters setting by MDGCSolution  
Compounds which cannot be separated in the 1st column are introduced to the 2nd column with different phase chemistries.



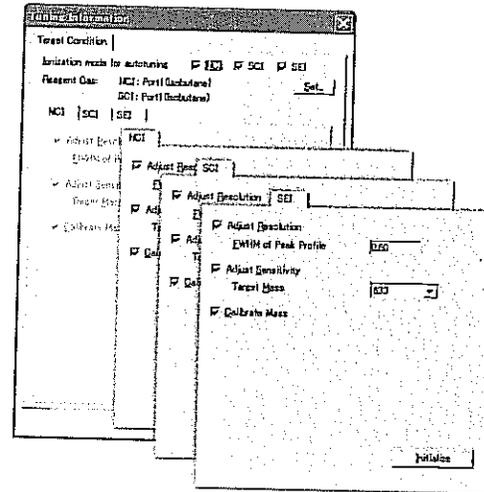
Analysis of Optical Isomers of Linalool in Lavender Oil using Multidimensional System

## Chemical Ionizations

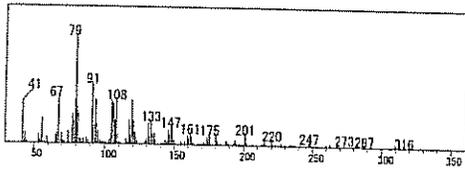
In addition to commonly-used electron ionization (EI), both chemical ionization (CI) and negative chemical ionization (NCI) are available. CI is suited for confirmation of ionized molecular weight. NCI can be used to detect functional groups having a large electron affinity such as halogens. Tuning is fully automated for any ionization method: EI, CI, or NCI. Any of three types of reagent gases (methane, isobutane, or ammonia) can be used.

The ion source for NCI can be used with either EI or CI, making it possible to switch between ionization methods without having to replace the ion source.

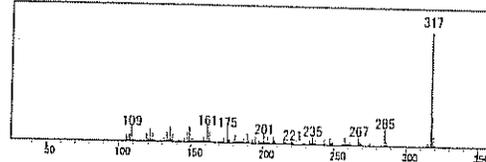
If high-sensitivity measurement is required, use a specialized ion source.



EI mode



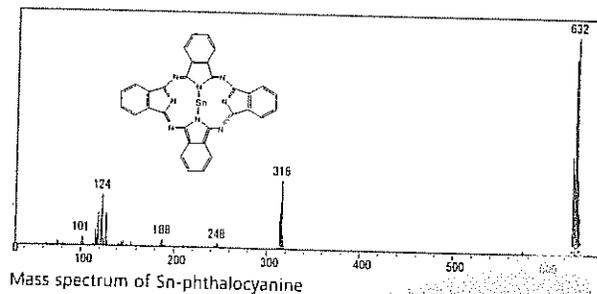
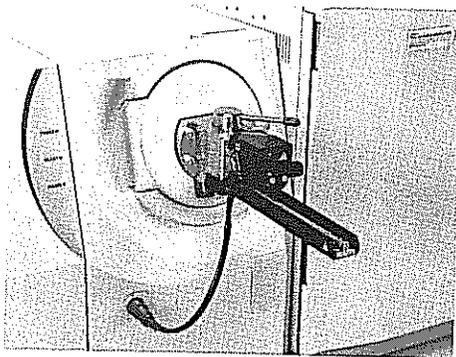
CI mode



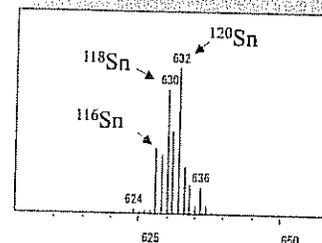
Mass spectrum of cis-5,8,11,14,17-Eicosapentaenoic Acid Methyl Ester (C<sub>20</sub>:5n<sub>3</sub>) in EI and CI  
In cases where the identification of molecular ions is difficult by EI, it is easily accomplished by CI.

## Direct Injection System DI-2010

The DI Probe allows a sample to be introduced directly into the ion source without being passed through a GC column. It is an effective technique for obtaining mass spectra of synthetic compounds that do not chromatograph well. A DI system can be incorporated into a standard GC-MS configuration without making any changes to the GC. It is then possible to switch between conventional GC column chromatography and DI analysis without making any hardware changes.



Mass spectrum of Sn-phthalocyanine



Components that are thermally degradable or difficult to vaporize are not suited to GC analysis. Their mass spectra can be obtained easily using the DI probe. Above is an example of Sn-phthalocyanine spectra obtained using the DI Probe.

# Eco Friendly

## Eco-Friendly Design for Lower Running Costs in the Laboratory

There is increasing public interest in reducing running costs and environmental stress. Reducing power consumption is a common concern not only for the reduction in a laboratory's energy cost, but also as a way to reduce CO<sub>2</sub> emission. In addition, helium carrier gas is a non-renewable, valuable natural resource. The GCMS-QP2010 Ultra has eco-friendly features for saving power and carrier gas.

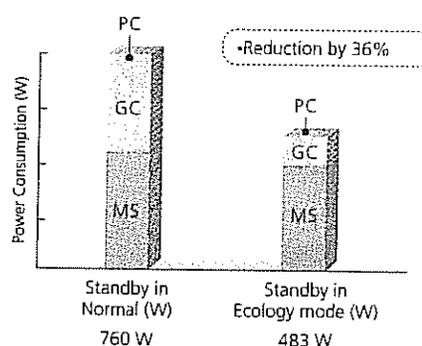


### Saving Power Consumption with an "Ecology mode" for Reduced Instrument Running Costs

Equipping the instrument with "Ecology mode" reduces the power consumed in analysis standby mode by 36%, compared with the previous model. In nighttime GC-MS operation Ecology mode can be set automatically, which makes it possible to reduce unnecessary power consumption.

### Reduction of Power Consumption in Analysis Standby Mode

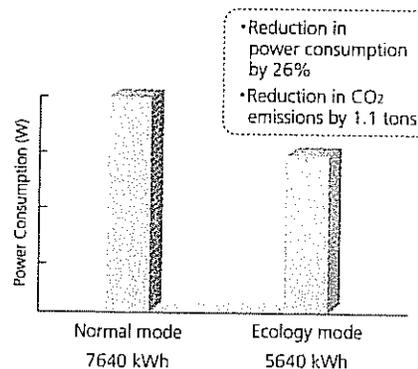
When Ecology mode is entered, unnecessary power consumption by the GC, MS, and PC is automatically eliminated. The consumption of carrier gas is also automatically reduced. Furthermore, Ecology mode can be entered automatically after continuous analysis, so power and carrier gas can be saved automatically after the completion of nighttime analysis.



### Reduction of Annual Power Consumption

If Ecology mode is used over one year of operation\*, power consumption can be reduced by 26% and CO<sub>2</sub> emissions can be reduced by approx. 1.1 tons.

\*) This is based on 6 hours of use per day for 260 days over the course of a year under our standard analytical conditions.

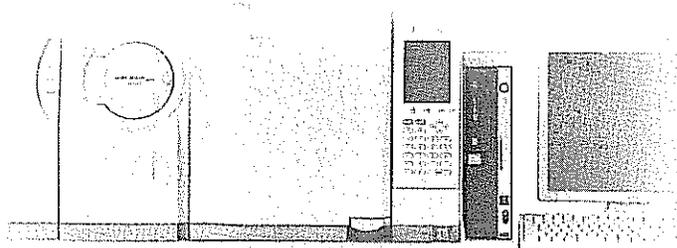


## Consideration of Global Warming

Using a setup in which Ecology mode is incorporated into the GC-MS production line reduces CO<sub>2</sub> emissions discharged by 30%. At Japanese production plants, we have incorporated photovoltaic power facilities. The maximum power generated is 25 kW, and we expect an annual power generation effect of 22,000 kWh, which corresponds to an annual reduction in CO<sub>2</sub> emissions of 8.3 tons.



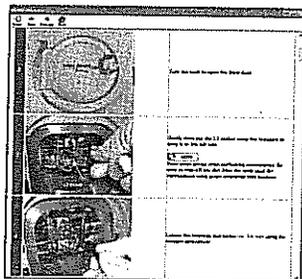
This product conforms with Shimadzu's ECO labeled product.



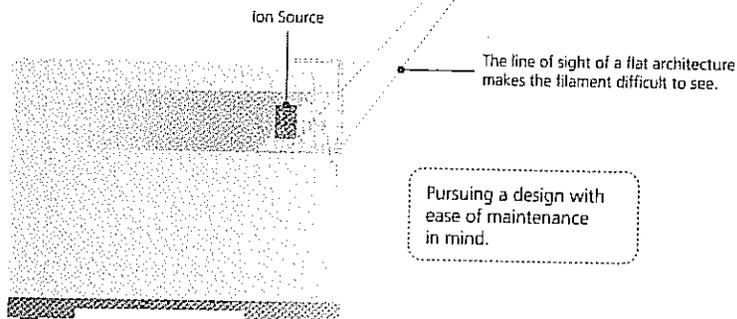
# User Friendly

## Design Offers the Ultimate in Ease of Use

When changing the ionization method or performing maintenance of the area around the ion source, parts inside the evacuation system must be handled. The GCMS-QP2010 Ultra uses a front-opening chamber in a design that is both visually pleasing and practical, allowing maintenance to be performed with ease from the front of the instrument. "MSNAVIGATOR," which supports maintenance, has been improved to help the user perform instrument maintenance.



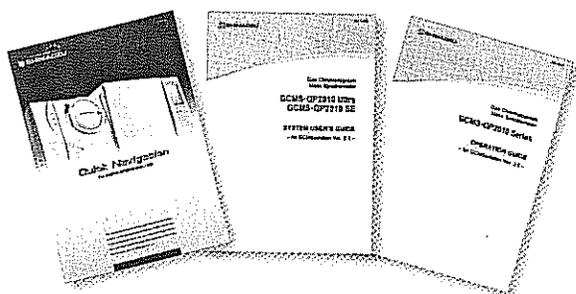
MSNAVIGATOR Window



Line of sight with this instrument

## Comprehensive Selection of Documents and Packages of Tools and Consumable Items Facilitate Ease of Use

We have prepared a "Quick Navigation" to allow even first-time operators to use GC-MS with ease and an "Operation Guide" that explains operations as they are encountered in the flow of analysis. We have also prepared packages with photos that allow easy recognition of the types and part numbers of tools and consumable items, and thereby support operation and maintenance of the instrument.





JQA-0376

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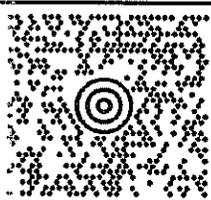
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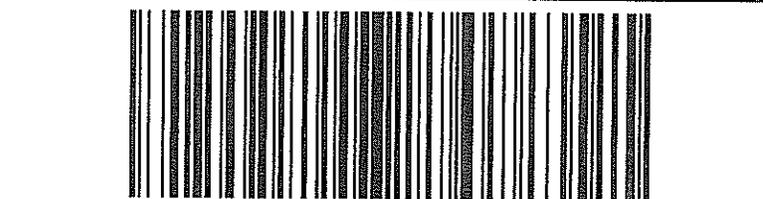
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