The Kearns Group

Prices +

DESCRIPTION OF VG MICROMASS 602C

BULLETIN 02.202

(January 1975)

The VG Isotope Micromass 602C is a double collector, 90^{o} magnetic mass spectrometer of 6 cm radius for the precision measurement of isotopic ratios of the following:

^{13}C, ^{18}O, ^{14}N (Group A), H_2/HD and ^{34}S

The instrument is described in Publication No. 02.214.

ITEM 1

This Item covers the standard instrument for the measurement of isotopes in Group A above and includes:

(a) Micromass 602 analyzer fitted with gas tight ionization source and twin Faraday bucket collectors for the analysis of $^{12}C/^{13}C$. $^{16}O/^{18}O$ from CO_2 and $^{14}N/^{15}N$ from N_2 to a precision (2σ) of 0.025 ‰.

(b) Polyphenyl ether oil diffusion pumped vacuum system capable of base pressures in the low 10^{-9} torr range without the use of liquid Nitrogen. The rotary pumps are fitted with Pirani gauges, magnetic isolation valves and molecular sieve foreline traps. The complete vacuum system is of fail-safe design and is interlocked against operator error.

(c) All metal inlet system fitted with fast action toggle operated valves and adjustable (bellows) volumes. The inlet system is thermally insulated and has an integral heater for simple bakeout.

(d) Automatic, fully bakeable, McKinney type, switching valve which gives sample mixing of less than 0.1%. The waste line is diffusion pumped as is (b) above and is balanced so that pressure changes in the ion source during switchover are negligible.

(e) Accurate logarithmic ionization gauge for monitoring high vacuum with trip facilities which protect the mass spectrometer during operation and switch off the oven in the event of overpressure during bakeout.

58 Buckingham Drive · Stamford Ct. 06902 · 203·322·4546

(f) Single thermostat controlled oven for bakeout of analyzer, switching valve and upper vacuum system.

Items 1 (a) to 1(f) above are housed in a mobile console arranged at a convenient height for seated operation.

(g) Free-standing mobile console housing all control circuits which are:

(1) Ratio control unit with meter display, gain, zero and response time controls for both the major and minor isotope amplifiers. The three decade ratio bridge and a ratio offset control (automatic operation on one gas only) which enables samples of high enrichment to be measured with high precision.

(2) Digital integrator providing 6 significant figures readout of the ratio.

(3) Automatic switching valve control variable over the range 45 seconds to 2.5 minutes plus manual over-ride.

(4) Emission control with trap current (50-400μA) and electron energy (5 to 85eV) controls.

(5) Scan Control for manual or motor scanning

(6) Programmed power supply, high voltage control unit, with output over the range 0-5kV with meter display. The voltage is varied either by front panel manual control or from the Scan Control.

(7) Source monitor control with which all source parameters may be monitored without disturbing the instrument. This unit also includes the controls for ion repellers, half plate and half plate voltages.

(h) Free standing, mobile, trolley on which is mounted the ratio recorder. The slide wire of the recorder is an integral part of the ratio bridge giving a true ratio system which is independent of the signal level.

One complete instrument as described above for Group A Isotopes:

$ 51,600.00

ITEM 2

For the analysis of ^{34}S in SO_2, elevated temperature kit $ 3,200.00

The Kearns Group

August 17, 1976

Dr. Jeff Klein
University of Pennsylvania
Radio Carbon Laboratory
Rittenhouse Lab BW-4
Walnut Street
Philadelphia, Pa. 19174

Dear Dr. Klein

We are pleased to offer you a modified, lower cost/reduced performance, gas isotope instrument based on the VG Isotope, Micromass 602C, a double collector, 90° magnetic mass spectrometer of 6cm radius for the precision measurement of isotopic ratios of ^{13}C, and ^{18}O. This low cost variant of 602C has 2 Sigma-10 precision of 0.5 per mil. on delta enrichment values for N_2 and CO_2 only. Inlet system with dual volumes but not truly independent. Simple ratio system with DVM output. Printer optional accessory. Instrument would use many parts from the 602C with the following differences from the 602C brochure 02.214:

ANALYZER, Type A analyzer as described.
INLET SYSTEM, Modified inlet system will have fixed volume for standard and variable volume for sample. No automatic change over. Rotary pump evacuation. Suggested sequence of operation: Fill with standard, fill with sample measure standard measure sample. Fill with next sample, and so on. We would also probably use less expensive valves than the 602C toggle valves.
VACUUM SYSTEM, Analyzer HV system only with Diffusion Pump.
RATIO MEASUREMENT, Modified ratio system purely analog but without recorder bridge.
ELECTRONIC CONSOLE, ratio unit, with 4 digit DVM readout programmed power supply with limited source monitor facilities. Less versitile scan module and all above electronics to be mounted into pump bench and not a separate cabinet.
VACUUM INSTRUMENTATION, similar to present.
PRICE, $29,900.00 FOB New York, New York. Price does not include recorder or bakeout facilities.
ESTIMATED DUTY, $2,700.00

Above is all we can say in general terms at present. We would be pleased to deal with specific queries.

Very truly yours

Thomas P. Reynolds

Thomas P. Reynolds

511 Main Street · Fort Lee, N.J. 07024 · 201-461-0399

REQUISITION TO PURCHASING DEPT.
PLEASE TYPE AND FORWARD ORIGINAL

TOTAL ESTIMATE: $22,500.00

DATE: 9/10/76

REQ. NO.: 77-2

Code	Class	Dept. No.	Account	Job No.
	6	28536	260	

Dept. Name: Physics

TEL. NO.: 8181

Grant or Contract No.: Chairman's Fund

P.O. NO.:

Delivery Address:
209 S. 33rd St.
Phila., Pa. 19174

C/O
Dr. E. Ralph(X8168)

Authorized Signature

Quantity	Cat. No.	Description	Unit Cost	Total Cost Per Line
1		Model 622 (formerly modified 602C) Micromass Mass Spectrograph		22,500.
		Payment terms: 30% (of $22,500.00) payment upon receipt of order		
		30% within 60 days		
		30% at time of delivery (approximately 4 months)		
		10% when we are satisfied that it is working well		
		PLEASE INVOICE IN ACCORDANCE WITH THE ABOVE MENTIONED TERMS		

SUGGESTED VENDOR →

The Kearns Group
511 Main Street
Fort Lee, N. J. 07024

Attn: Mr. Jerry Kearns

TOTAL $22,500.00

USE SEPARATE REQUISITION FOR EACH CODE

Form No. Pur—1-574

Quotation Justification for Purchase Orders-Physics Dept.

to - It is University Purchasing Policy to have a minimum of three (3) otations, but preferably five (5) quotations for all individual requisi-ons totalling $500.00 or more. Quotations should be written where ssible. 750.00

This sheet will accompany your requisition to the Purchasing partment and will serve, together with quotations received, as a storical record to justify requirements of Government Auditors who riodically review University Purchasing Policies and Methods.

Your cooperation in filling in the information required will gratefully appreciated. If less than three quotes are received or vendor is to be considered sole source, please justify your reason r this with a brief statement below.

Name of Vendors Solicited (Please List)	Total Value of Quote
1. Finnigan Corp.	$ 48,500
2. Nuclide Analysis Associates	$ 46,165
3. CEC Particle Inc.	$ [illegible]
4. " " "	$ 36,155
5.	$

Reason for Sole Source or why less than three (3) quotes were licited:

☐ Items produced by vendor(s) solicited are the only types which are compatible with our present facilities.

☐ Vendors were solicited but no other quotes received

☐ Prices noted are from regular printed catalog and price sheet

☐ Only supplier that has item in stock and could meet required delivery schedule.

☒ Other The only less expensive one is CEC. We paid $6,000 to test their instrument and it was not suitable for isotopic ratio measurements. We must measure C^{13}/C^{12} with the highest precision

Signature of Originator of Requisition Elizabeth K. Ralph

Signature of Authorized Person _____

CHANGE IN ORDER

C.O. No.

To: THE KEARNS GROUP
511 MAIN STREET
FORT LEE N J 07024
ATT MR JERRY KEARNS

From:
PURCHASING DEPARTMENT
University of Pennsylvania
3451 Walnut St.
Philadelphia, Pa. 19174
Tel: (215) 243-7216

Date: 10/1/76

REFER TO OUR PURCHASE ORDER NO.
15463 DATED 9/24/76

PLEASE REFER TO THE ABOVE ORDER NUMBER
AND CHANGE DEPT TO READ:

PHYSICS EAR-76-14258

ACCOUNT CODE 5-26616-260

For:
DEPARTMENT
PHYSICS EAR-76-14258

ACCOUNTING CODE
5-26616-260

REQ 77-2

Trustees of the University of Pennsylvania
Purchasing Agent

DEPT. COPY

Dr. Ralph.

The above is the documentation for the transfer of Spectrograph from the Chairman's fund to your new NSF Grant.

Linda White
Business Office

CHANGE IN ORDER

C.O. No.

To:
THE KEARNS GROUP
511 MAIN ST
FORT LEE N J 07024
ATT MR JERRY KEARNS

Date: 1-28-77

From:
PURCHASING DEPARTMENT
University of Pennsylvania
3451 Walnut St.
Philadelphia, Pa. 19174
Tel: (215) 243-7216

REFER TO OUR PURCHASE ORDER NO.
15463 9-24-76

PLEASE REFER TO THE ABOVE P O NUMBER AND CORRECT TOTAL PRICE OF THE ABOVE ORDER TO KREAD AS FOLLOWS:

FROM $ 22,500.00 TO $ 27,500.00
CODING FOR ADDITIONAL $ 5000.00 IS:
2-11039-260

For:
DEPARTMENT

PHYSICS EAR 76-14258

ACCOUNTING CODE
5-26616-260
2-11039-260 (ADD $5000.00)

REQ # 77-2

Trustees of the University of Pennsylvania

DEPT. COPY

Purchasing Agent

The Kearns Group

September 10, 1976

Dr. Elizabeth K. Ralph
University of Pennsylvania
Radio Carbon Laboratory
Rittenhouse Lab BW-4
Walnut Street
Philadelphia, PA 19174

Dear Dr. Ralph

The enclosed quotation reflects the fact that VG Micromass will build a specially modified commercial instrument for use in your laboratory.

One copy of form DIB-338P, Request for Duty-Free Entry of Scientific Instruments or Apparatus, is enclosed together with the latest information, rules, and regulations, concerning Duty-Free Entry, and a copy of a successful request.

You may fill in one original copy and then Xerox it and sign each copy - DO NOT XEROX THE SIGNATURE - Your original signature must appear on all copies. More forms may be obtained by calling the U.S. Customs Service at 202-964-5864.

The best justifications for Duty-Free Entry are based on technical criteria. You are ordering a modified commercially available instrument for a specific scientific requirement. A very thoughtful elaboration of that statement is required.

Please call if you have any more questions. Otherwise I will call you for your "Docket Number" before the instrument arrives in Customs.

Very truly yours

Thomas P. Reynolds

Thomas P. Reynolds

TPR/MMR
Enc: 6

511 Main Street · Fort Lee, N.J. 07024 · 201-461-0399

INFORMATION FOR DUTY-FREE ENTRY OF SCIENTIFIC INSTRUMENTS

If an Application for Duty-Free Entry is filed with the Department of Commerce and the Department of Commerce assigns the Application a "Docket Number", the instrument can be admitted without paying Duty and without the posting of a deposit. See "IMPORTANT INFORMATION FOR APPLICANTS FOR DUTY FREE ENTRY UNDER TSUS ITEM 851.60", attached.

The "Rules and Regulations" pertinent to Duty-Free Entry are published in the Federal Register. The latest publication was November 22, 1974, a copy of which is attached.

The form to be used is revised from time-to-time. If an out-of-date form is used, it will be returned and could delay action. Also, all copies must be signed. DO NOT SUBMIT COPIES OF THE SIGNATURE. All copies must have an original signature. The most recent Form (DIB-338P,2-75) is attached.

The most appropriate item justifying duty free entry is that no domestic instrument commercially available can perform analyses required for the Scientific application. One should attach to the Application copies of relevant Grants and/or Grant Proposals which illustrate the application for which the instrument is used.

If time permits, one should contact in writing any known domestic supplier and request a Quotation for an instrument. It is advisable to obtain a current Price List as well since some manufacturers will quote for instruments which are not commercially available. It will help an application if you can show from a Price List that a feature or accessory is not commercially available.

A number of Duty Free Applications have been approved because the domestic instrument is not suitable for routine use - especially if one can show that the instrument is to be used by students and/or used in a teaching application.

The Quotation from a domestic supplier should, if possible, give a reliable date of delivery. Some applications have been approved when it has been shown that a Domestic instrument is not available "off the shelf" while the foreign is.

The Kearns Group

QUOTATION

DATE September 10, 1976

TO
Dr. Elizabeth K. Ralph
University of Pennsylvania
Radio Carbon Laboratory
Rittenhouse Lab BW-4
Walnut Street
Philadelphia, PA 19174

OUR QUOTATION NO. 760910-R

YOUR REFERENCE NO.

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	EXTENSION
1	1 each	VG MICROMASS ISOTOPE RATIO MASS SPECTROMETER for gas isotope ratio measurements. Specially designed double collector, 90° magnetic mass spectrometer of 6cm radius for the precision measurement of isotopic ratios of ^{13}C, and ^{18}O with 2 Sigma-10 precision of 0.5 per mil. on delta enrichment values for N_2 and CO_2. Dual volume inlet system not truly independent, simple ratio system with DVM output, printer optional accessory. Instrument would be specially modified MM602C with the following differences from brochure 02.214: ANALYZER: Type A analyzer as described. INLET SYSTEM: Modified inlet system will have fixed volume for standard and variable volume for sample. No automatic change over. Rotary pump evacuation. Suggested sequence of operation: Fill with standard, fill with sample, measure standard, measure sample. Fill with next sample, and so on. VACUUM SYSTEM: Analyzer HV system only with Diffusion Pump. RATIO MEASUREMENT: Modified ratio system purely analog but without recorder bridge. ELECTRONIC CONSOLE: Ratio unit, with 4 digit DVM readout programmed power supply with limited source monitor facilities. Special scan module and all above electronics to be mounted into pump bench, and not a separate cabinet. VACUUM INSTRUMENTATION: Similar to present. PAYMENT TERMS: $6,750.00 with order $6,750.00 within 60 days $6,750.00 upon shipment $2,250.00 upon installation $7,400.00 within 6 months of receipt of order.	$29,900.00	

QUOTATIONS FIRM FOR 60 days
TERMS As above
Estimated duty: $2,700.00
SHIPMENT FOB New York, New York

BY: Thomas P. Reynolds
Thomas P. Reynolds
FOR FURTHER INFORMATION CONTACT:

58 Buckingham Drive · Stamford Ct. 06902 · 203·322·4546

U.S. DEPARTMENT OF COMMERCE
Domestic and International Business Administration
Washington, D.C. 20230

AUG 4 1977

University of Pennsylvania
Attention: Ms. Elizabeth K. Ralph
Department of Physics
DRL/E1--209 S. 33rd Street
Philadelphia, Pennsylvania 19174

Re: Docket Number 77-00056; Request for Duty-Free Entry of a Mass Spectrograph, Micromass Model 622. Received by U.S. Customs Service on December 1, 1976. Notice of Denial without Prejudice to Resubmission.

Gentlemen:

Pursuant to Section 301.8 of the Department's Regulations as amended (15 CFR 301) this is to inform you that the above-captioned application is herewith denied without prejudice to its resubmission for reasons discussed below.

Please note that Section 301.8 cited above reads in part as follows:

> "The applicant shall on or before the 20th day following the date of such notice [of denial without prejudice to resubmission], inform the Deputy Assistant Secretary whether it intends to resubmit another application for the same article for the same intended purposes to which the denied application relates. The applicant shall then resubmit the new application on or before the 90th day following the date of the notice of denial without prejudice to resubmission, unless an extension of time is granted by the Deputy Assistant Secretary in writing prior to the expiration of the 90-day period. ...If the applicant fails within the applicable time periods specified above, to either (a) inform the Deputy Assistant Secretary whether it intends to resubmit another application for the same article to which the denial without prejudice to resubmission relates, or (b) resubmit the new application, the prior denial without prejudice to resubmission shall have the effect of a final decision by the Deputy Assistant Secretary on the application within the context of §301.11."

Accordingly, the failure to notify us of the intent to resubmit within the 20-day period, or the failure to resubmit a new application within the 90-day period following the date of this notice

of denial without prejudice to resubmission if such notification of intent is submitted, will have the effect of a final denial of your application.

The Educational, Scientific, and Cultural Materials Importation Act of 1966, pursuant to which the above-cited regulations were issued, provides for duty-free entry with respect to:

> "Articles entered for the use of any nonprofit institution, whether public or private, established for educational or scientific purposes... if no instrument or apparatus of equivalent scientific value for the purposes for which the instrument or apparatus is intended to be used is being manufactured in the United States." (Public Law 89-651, Section 6(c)) (Underscoring added).

Accordingly, the determination of scientific equivalency rests on whether both of the following criteria are satisfied:

(1) The application shows in response to Question 8, that the foreign article has certain structural, operational and/or performance characteristics which are not possessed by the most closely comparable domestic instrument or apparatus.

(2) At least one of these characteristics is pertinent to one or more of the purposes for which the foreign article is intended to be used, as stated in reply to Question 7.

The definition of "pertinent specifications" is given in Section 301.2(n) of the cited regulations. The basis for determining scientific equivalency is discussed in Section 301.11(a).

The following illustrates the relationship between Questions 7 and 8:

(1) If, in response to Question 8, you claim that the resolution of the foreign article is superior to that of the most closely comparable domestic instrument, the reply to Question 7 should include those particular purposes which could not be achieved without the additional resolving capabilities of the foreign article.

(2) If sensitivity of the foreign article is alleged to be greater than the sensitivity of the most closely comparable domestic instrument, in response to Question 8, the reply to Question 7 should include those minor components with which the investigations are concerned that could not be detected and identified without the higher sensitivity of the foreign article.

(3) If the mass range of the foreign article is listed in Question 8 as being greater than that of the most closely comparable domestic instrument, the reply to Question 7 should include a reference to the lowest and highest ionic mass species to be investigated.

(4) If you claim in response to Question 8 that the foreign article is superior with respect to providing metastable ions, the reply to Question 7 should include a reference to the need to study metastable ions in the course of the research program, as well as the minimum concentration of metastable ions required to perform the experiments.

As a whole, the reply to Question 7 must be sufficiently detailed with respect to the materials to be analyzed, the properties to be investigated and the objectives pursued in the course of the investigations, to permit relating each characteristic listed in response to Question 8 to one or more particular purposes for which the characteristic is considered necessary for accomplishment. In listing the characteristics of the foreign article in response to Question 8, the following should be specially noted:

(1) Structural or design characteristics are not considered pertinent unless it can be demonstrated that differences in structure or design are conducive to differences in performance capabilities with respect to the purposes for which the foreign article is intended to be used. Otherwise, such characteristics are considered as conveniences or non-pertinent personal preferences.

(2) Each manufacturer of mass spectrometers, foreign and domestic, offers varying optional arrangements and accessories. Each combination is intended to provide the optimal system for a given research program or set of analytical problems. In determining scientific equivalency, only the particular combination of basic units and accessories to which the application relates will be considered. The intent to purchase a particular accessory at some unspecified future date, for purposes that cannot be currently defined, is not considered in determining scientific equivalency even though it may have performance capabilities that are not possessed by similar domestic accessories. Such accessory would be a determining factor only if (a) it is part of the purchase order for the system to which the application relates (although it may be shipped separately at a later date) and (b) the applicant demonstrates the pertinency of the accessory to one or more purposes defined in reply to Question 7 as associated with the educational or research program for which the foreign article is intended to be used.

(3) Whether flexibility will be considered as a pertinent characteristic will depend on the nature of this characteristic within the context of the purposes for which the foreign article is intended to be used. For example: if the article combines

in a single system certain capabilities that would otherwise be obtainable by purchasing two separate systems if domestic instruments were used; if these capabilities could be utilized alternately when needed by merely switching from one to another; and if these capabilities in combination were pertinent to one or more purposes defined in reply to Question 7; flexibility could be considered as a pertinent characteristic in this case. However, the fact that the foreign article can be converted from one system to a different arrangement and thereby enhance certain capabilities of the system, if these may be required at some future time, by a major modification of the system, the pertinency of flexibility in such cases would be questionable.

(4) Differences in cost between the foreign article and comparable domestic instruments, in cost of maintenance or in ease of maintenance, and similar factors are not considered as pertinent characteristics.

The answer to Question 9 should indicate the efforts made to obtain a domestic instrument of equivalent scientific value to the foreign article, for such purposes as the article is intended to be used. The answer should clearly show whether domestic manufacturers were invited to bid on a mass spectrometer system capable of fulfilling certain performance requirements as described in the applicant's purchase specifications, or were merely requested to submit quotations without reference to particular requirements. Hence, the answer to Question 9 should include the following:

(1) The names of all domestic manufacturers of mass spectrometers, which were afforded an opportunity to furnish an instrument for the purposes indicated in reply to Question 7.

(2) Whether each domestic manufacturer was provided with information regarding your technical requirements including any stipulated ancillary equipment such as gas chromatograph interface, computer interface, etc.

(3) Copies of correspondence from domestic manufacturers, which indicated whether they offered to furnish an instrument for your purposes with or without exceptions to one or more of your specifications and/or stipulations.

(4) If your specifications required prospective suppliers to submit spectra of replica samples analyzed by their respective instruments, copies of such spectra should be included in reply to Question 9.

(5) Similarly, if you stipulated that the supplier would be required to adjust the instrument to meet your specified

performance requirements as part of the contract, the reply to Question 9 should indicate whether any domestic manufacturer agreed to accept this commitment as part of the purchase price.

Please note that Section 301.4 stipulates that the specification of the foreign manufacturer shall be in a form that permits comparison with customary specifications for comparable domestic instruments, apparatus or accessory. If the technical nature of the foreign article is such that the displayed performance capability may vary with differences in test procedures, sample size and other parameters, the specifications for the foreign article shall identify the relevant parameters. In the case of produced-on-order or custom-made instruments, apparatus or accessories, the response to Question 5 shall include a statement from the foreign manufacturer attesting to the degree of compliance with purchaser's specifications.

The design characteristics of mass spectrometers are such that for any given model a manufacturer can increase certain capabilities by sacrificing other functionally related capabilities. For example, an increase in resolution is achieved with a corresponding decrease in sensitivity. Another example is the inverse relationship between mass range and accelerating voltage.

For this reason, no comparison of two mass spectrometers can be meaningful unless each specification is associated with a particular set of parameters that are functionally related to the specification. Accordingly, the specifications submitted in reply to Question 5 must show the interlocking relationship between each specification and its associated parameters as illustrated below:

(1) The specification for resolution should stipulate the mass range over which the specified resolution will be applicable, as well as the scan speed and sensitivity corresponding to the specified resolution. In addition, you should stipulate the basis for measuring the resolution -- 50 percent valley definition, 10 percent valley definition, one percent cross-contribution, etc.

(2) The specification for sensitivity should include as parameters (a) the ionizing current, (b) accelerating voltage, (c) signal-to-noise ratio, (d) the sample pressure and leak rate into the source if the instrument is intended for investigation of gases or, alternatively, the quantity of sample (in micrograms) introduced and duration of the signal, and (e) the reference sample used in establishing the parameters.

(3) The specification for scan speed should also identify the sample with respect to mass and quantity that the instrument must be capable of detecting at the slower scan speed and stipulate the corresponding signal-to-noise ratio.

(4) Specifications for reproducibility should include in addition to the stated coefficient of reproducibility, the number of samples used in establishing the pattern of reproducibility, and the time span involved in obtaining the pattern, as well as the type of recording system (linear or nonlinear) to be used in recording the pattern.

The significance of criteria (1) and (2) is that the availability of certain characteristics in the foreign aritcle, which are not possessed by the most closely comparable domestic instrument, is not of and by itself a sufficient condition for duty-free entry. The sufficient condition is satisfied by:

(1) relating each characteristic to one or more purposes described in reply to Question 7; and

(2) explaining why the relevant purpose(s) cannot be accomplished, or accomplished as well, with an instrument that does not possess this characteristic.

It follows that in order to satisfy the sufficient condition, the research and/or educational purposes for which the foreign article is intended to be used must be described in enough detail to permit identifying one or more such purposes with the relevant characteristic of the foreign article that is necessary to its (their) accomplishment. The captioned application is deficient in this respect for reasons indicated in the memorandum from the National Bureau of Standards (NBS) dated April 21, 1977 (copy enclosed).

As noted above, the determination of scientific equivalency is based upon a comparison of the article and comparable domestic instruments with respect to pertinent specifications which are defined by Subsection 301.2(n) of the enclosed regulations. This determination cannot be based on a comparison of convenience, cost, or cosmetic factors. Also, features which are available or matched in domestic instruments cannot provide grounds for duty-free entry. With these considerations in mind please note that NBS has chosen the Nuclide Model 6-60-RMS as the most closely comparable domestic instrument upon which it bases its advice. However, since cost cannot be used in the determination of scientific equivalency, the larger and more powerful 12-90-RMS could also have been cited by our scientific consultants as a domestic instrument matching the foreign article.

In connection with NBS's recommendation we note that you have not provided a full description of the proposed inlet changes or its range of sizes. Further, you should provide documentation to show that you ordered these capabilities as fully described. If you resubmit, a comparison of the article and comparable instruments available from Nuclide should be made following the guidelines provided in Question 8 and subparts in a manner that clearly shows why the domestic instrument is inadequate for your specific purposes.

Please note that specifying a certain domestic instrument as scientifically equivalent for your purposes does not necessarily exclude other domestic instruments from being considered similarily equivalent. It must be noted that it is normal commercial practice for both domestic foreign manufacturers to provide modified specification and/or additional accessories for prospective customers which are not mentioned in sales literature. This is especially so when the customer desires a special order variant of an instrument.

Not true

One way to establish that a manufacturer can provide a particular capability is to afford that manufacturer an opportunity to bid on the required specifications and to note whether any exceptions were taken. It is important to note that Nuclide was not afforded such an opportunity.

Nuclide was not willing

You may elect to reinforce your justification of duty-free entry in a resubmission by elaborating on the description of your purposes contained in this submission. For example, you may supply additional specifics, examples, documentation and/or other clarifying detail. We are permitted to consider such material in the evaluation of a resubmission. It should be noted, however, that the regulations do not permit consideration of any new purposes or intended uses introduced in a resubmission.

For your immediate needs of resubmission we are enclosing the following:

(1) Form DIB-338P, Request for Duty-Free Entry of Scientific Instruments or Apparatus;

(2) Regulations Issued Pursuant to the Educational, Scientific, and Cultural Materials Importation Act of 1966; and

(3) Important Information for Applicants for Duty-Free Entry Under Item 851.60, TSUS.

Any questions you may have with regard to the denial without prejudice to resubmission of your application, and the procedure to follow in resubmitting, should be directed to the Special Import Programs Division, U.S. Department of Commerce, Washington, D. C. 20230 (area code 202 377-3971). All communications concerning your application should be made with reference to the captioned docket number.

The actual resubmission of your application, in the number of copies prescribed in Section 301.3(a) of the Regulations, should be sent to:

U.S. Customs Service
Attention: Entering and Licensing Branch
Washington, D. C. 20229

It is recommended that all resubmissions be made by certified mail with a return receipt requested. The return receipt will confirm receipt of your application by U.S. Customs Service. The receipt should be retained in the event the question arises as to whether your application was submitted within the approved period specified in Section 301.8 of the Regulations.

Sincerely,

Richard M. Seppa

Richard M. Seppa
Director
Special Import Programs Division

Enclosures

P.S. This provisional denial affords you an opportunity to correct the deficiencies cited above and by NBS via resubmission. A resubmission should also be responsive to allegations made by Nuclide in its letter dated April 28, 1977 (copy enclosed) which was received after receipt of advice from NBS. If you resubmit, please include all of the entry information required in question 10 of the application form.

August 10, 1977

Dr. George H. Sprenger
Assistant Professor
New Mexico Highlands University
Las Vegas, New Mexico 87701

Dear Dr. Sprenger:

Thank you very much for your letter of July 27, 1977. I am enclosing information and prices for the range of VG Micromass Mass Spectrometers. VG Micromass do not produce an instrument directly comparable with the Varian Model EM-600. However, as you can see, we offer a variety of instruments (both quadrupole and magnetic deflection) and accessories which enable one to construct a system to his immediate specifications. A typical configuration would cost between $15,000-25,000.

We have frequently come across used mass spectrometers and know of two which might be of interest to you. One is a CEC-21-120 which had been in use at the University of Pennsylvania. This instrument could be purchased for between $5,000-10,000. If you were interested, you could contact Dr. Ralph at (215) 243-8163.

We also know of an organization who would like to sell a Hitashi Perkin Elmer Model RMU-6. This instrument is still in every day use and includes accessories like a solids probe, gas chromatograph interface, etc. The cost of this instrument would be approximately $20,000. We are acting as broker for this organization and should this be of interest to you, please contact me directly.

If I can be of any further assistance, please let me know.

Sincerely yours,

Gerard L. Kearns
President

GLK/yd
Enclosures

BANIFF PRESS—Stamford, Ct.

8720-4

The Kearns Group
58 BUCKINGHAM DRIVE
STAMFORD, CT. 06902
(203) 322-4546

Invoice

INVOICE No. * 5810

INVOICE DATE 5/10/78

SOLD TO
University of Pennsylvania
Purchasing Dept.
Philadelphia, Pa. 19174

SHIPPED TO

OUR ORDER NO.	YOUR ORDER NO.	SALESMAN	TERMS	SHIPPED VIA	Ppd. or Coll.
	15463	Reynolds	Net 30 Days		

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1 ea.	Duty on Model 622 Micromass Mass Spectrograph	$2,296	$2,296

The Kearns Group

May 10, 1978

Dr. Elizabeth K. Ralph
University of Pennsylvania
Radio Carbon Laboratory
Rittenhouse Lab BW-4
Walnut Street
Philadelphia, Pa. 19174

Dear Dr. Ralph:

Enclosed is a copy of our invoice in the amount of $2,296 for the U.S. Customs duty due on the Model 622 Mass Spectrometer. I am enclosing a copy of the notice from the Department of Customs stating that the item has been reclassified because the Duty-Free Application has been denied. I would appreciate it if you could approve payment as quickly as possible since we have had to remit to the Department of Commerce our check in the amount of $2,296.

Thank you for your help.

Sincerely yours,

Gerard L. Kearns

Gerard L. Kearns
President

GLK/yd
Encs.

58 Buckingham Drive · Stamford Ct. 06902 · 203·322·4546