

New York State Department of Taxation and Finance
Taxpayer Services Division
Technical Services Bureau

TSB-A-86(45)S
Sales Tax
November 12, 1986

STATE OF NEW YORK
STATE TAX COMMISSION

ADVISORY OPINION

PETITION NO. S860620A

On June 20, 1986, a Petition for Advisory Opinion was received from Enzo Biochem, Inc., 325 Hudson Street, New York 10013.

ISSUES

The issues raised are whether for purposes of the state and local sales and use taxes imposed under Article 28 of the Tax Law and pursuant to Article 29 of the Tax Law, tangible personal property and utilities used by Petitioner in its business qualify for the research and development exemption provided by sections 1115(a)(10) and 1115(b)(ii) of the Tax Law or the production exemption provided by sections 1105-B, 1115(a)(12) and 1115(c) of the Tax Law.

FACTS

Petitioner is engaged in laboratory research to develop various products for human disease diagnosis, genetic analysis and prenatal diagnosis, cancer detection and prognosis, plant pathogen identification and animal disease diagnosis. Petitioner currently manufactures DNA-based human infectious disease diagnostic probe kits for sale to the health care market.

All of the equipment listed below under the category of "Equipment Used to Conduct Research" is used by Petitioner to actually perform such laboratory research. All of the equipment listed below under the category of "Production Equipment" is used by Petitioner predominantly in the manufacture of its diagnostic kits.

Research and Development Equipment

Petitioner uses the following equipment predominantly in its research laboratory:

Equipment Used to Conduct Research

H₂O Baths - Maintains materials at specific temperatures
Centrifuges (Ultra, Low Speed, Micro, Rotors, Table Top) - Separate materials
Shakers (Incubator, Table Top, H₂O) - Vibrates liquid materials
Incubators (CO₂, Dry Air) - Grows test cells
Sterilizers - Prevents contamination of research materials
Programmable Dispenser - Measures research materials
Ovens (Drying, vacuum) - Dries research materials
Washing Manifolds for Elisa Plates - Monitors materials during testing
Elisa Plates - Monitors materials during testing
Gamma Counter - Monitors materials during testing
Scintillation Counter - Monitors materials during testing

Fermentors - Grows cells for analysis
Spectrophotometers with Accessories - Measures research materials
Darkroom tanks - Monitors materials during research
Darkroom Processor and Accessories - Monitors materials during research
Gel Equipment (Vertical, Horizontal) - Monitors materials during research
Electro Blot Transfer - Monitors materials during research
Gel Dryer - Monitors materials during research
Gene Machine - Separates different size materials
Gene Machine Power Supply - Separates different size materials
Gene Machine Pump - Separates different size materials
Gene Machine Fraction Column - Separates different size materials
Temperature Calculator - Monitors research materials
pH Meters - Monitors research materials
Lyophilizers - Removes water from research material
Balances (Top Loader, Analytical) Weight research material
Microscopes (Light, Fluorescent, Dual Viewer, Phase) - Inspects result of research
Cameras - Inspects results of research
Vacuum Pumps - Filters research materials
Elisa Readers - Monitors materials during research
Fluorimeter - Monitors materials during research
Pipetemen - Measures materials during research
Klett Colorimetric - Measures materials during research
Spec 20 - Measures materials during research
HPLC - Measures materials during research
Trans Illuminator - Measures materials during research
Distillation Apparatus - Measures materials during research
Gene Synthesizer - Measures materials during research
Sequencing Apparatus - Measures materials during research
Col. Chromotography Equipment - Measures materials during research
Gradient Makers - Measures materials during research
Vortexes - Mixes solutions during tests
Hot Plate Stirrers - Mixes solutions during tests
Liquid Nitrogen Tanks - Maintains low temperatures during tests
Microwave Ovens - Heats testing solutions
Seal-a-Meals - Packages research materials
Glove Boxes - Used in manipulation of research materials
Hoods (Tissue, Fume, Bench Top) - Removes contaminants from air in research laboratory

Equipment Used to Store Research Materials

Crushed Ice Machines
Refrigerators
Freezers

Research Safety Equipment

Eye Washes
Safety Showers

Manufacturing Equipment

Petitioner uses the following equipment predominantly in the manufacture of its diagnostic kits:

Production Equipment

Sonicators - Shatters raw materials
H₂O Baths - Maintains materials at specific temperatures
Centrifuges (Ultra, Low Speed, Micro, Rotors, Table Top) - Separates materials
Shakers (Incubator, Table Top, H₂O) - Vibrates liquid materials
Roller Bottle Apparatus - Vibrates liquid materials
Incubators (CO₂, Dry Air) - Grows cells as raw materials
Sterilizers - Prevents contamination of materials
Ovens (Drying, Vacuum) - Dries materials
Washing Manifolds for Elisa Plates - Tests for quality control in production
Elisa Plates - Tests for quality control in production
Scintillation Counter - Monitors production materials
Fermentors - Grows cells for raw materials
Spectrophotometer with Accessories - Measures production materials
Darkroom Tanks - Monitors production materials
Darkroom Processor and Accessories - Monitors production materials
Gel Equipment (Vertical, Horizontal) - Monitors production materials
Electro Blot Transfer - Monitors production materials
Gel Dryer - Monitors production materials
Gene Machines - Separates production materials
Gene Machine Power Supplies - Separates production materials
Gene Machine Pumps - Separates production materials
Gene Machine Fraction Columns - Separates production materials
Temperature Calculators - Monitors production materials
pH Meters - Monitors production materials
Lyophilizers - Removes water from production material
Balances - Weighs production material
Microscopes (Light, Fluorescent) - Checks quality of production material
Camera - Checks quality of production material
Vacuum Pumps - Filters production solutions
Elisa Reader - Monitors materials during production
Fluorimeter - Monitors materials during production
Pipetemen - Measures production material
Seal-a-Meals - Packages raw materials and finished products
Klett Colorimetric - Measures and produces production materials
Spec 20 - Measures and produces production materials
HPLC - Measures and produces production materials
Trans Illuminator - Measures and produces production materials
Distillation Apparatus - Measures and produces production materials
Gene Synthesizer - Measures and produces production materials
Sequencing Apparatus - Measures and produces production materials
Col. Chromotography Equipment - Measures and produces production materials

Gradient Makers - Measures and produces production material
Vortexes - Mixes production solutions
Hot Plate Stirrers - Mixes production solutions
Liquid Nitrogen Tanks - Freezes materials in production process
Microwave Ovens - Heats materials in production process
UV Box - Monitors production process
Glove Box - Used to manipulate materials
Hoods (Tissue, Fume, Bench Top) - Removes contaminants from air in production area

Storage Equipment

Crushed Ice Machine
Refrigerator
Freezers

Safety Equipment

Eyewashes
Safety Showers

LAW AND REGULATIONS

Section 1115(a)(10) of the Tax Law provides an exemption from state sales and use taxes for:

Tangible personal property purchased for use or consumption directly and predominantly in research and development in the experimental or laboratory sense. Such research and development shall not be deemed to include the ordinary testing or inspection of materials or products for quality control, efficiency surveys, management studies, consumer surveys, advertising, promotions, or research in connection with literary, historical or similar projects.

Section 1115(b)(ii) of the Tax Law provides an exemption from state sales and use taxes for:

Gas, electricity, refrigeration and steam service of whatever nature for use or consumption directly and exclusively in research and development in the experimental or laboratory sense....

By operation of sections 1210(a)(1) and 1107(a) of the Tax Law, the exemptions provided by sections 1115(a)(10) and 1115(b)(ii) of the Tax Law also apply to local sales and use taxes, including the sales and use tax imposed within the City of New York.

Regulation section 528.11 further explains the exemptions provided under sections 1115(a)(10) and 1115(b)(ii) of the Tax Law as follows:

528.11 Research and development

(a) Exemption. (1) The sale of tangible personal property purchased for use or consumption directly and predominantly in research and development in the experimental or laboratory sense is exempt from the sales and use tax.

(2) The exemption does not extend to installation and repair services for such property.

(3) An exemption is allowed for the sale of gas, electricity, refrigeration and steam, and gas, electric, refrigeration and steam service of whatever nature for use or consumption directly or exclusively in research and development in the experimental or laboratory sense.

(4) An Exempt Use Certificate (form ST-121) is used to make purchases eligible for this exemption without payment of sales tax.

(b) Research and development. (1) Research and development, in the experimental or laboratory sense, means research which has as its ultimate goal.

(i) basic research in a scientific or technical field of endeavor;

(ii) advancing the technology in a scientific or technical field of endeavor;

(iii) the development of new products;

(iv) the improvement of existing products; and

(v) the development of new uses for existing products.

2) Research and development in the experimental or laboratory sense does not include:

(i) testing or inspection of materials or products for quality control (for machinery and equipment used for quality control in the production of products for sale, see section 528.13 of this Part);

(ii) efficiency surveys;

(iii) management studies;

(iv) consumer surveys, advertising and promotions; and

(v) research in connection with literary, historical or similar products.

(c) Directly, predominantly, exclusively. (1) Direct use in research and development means actual use in the research and development operation. Tangible personal property for direct use would broadly include materials worked on, and machinery, equipment and supplies used to perform the actual research and development work. Usage in activities collateral to the actual research and development process is not deemed to be used directly in research and development.

(2) Tangible personal property is used predominantly in research and development if over 50 percent of the time it is used directly in such function.

(3) Tangible personal property is exempt only if it meets the tests of direct and predominant use.

Example 1: Test tubes, flasks, reagents, microscopes and slides purchased by a chemical manufacturer for its research laboratory for developing new pesticides are exempt from sales tax.

Example 2: Laboratory tables for use in a research laboratory are exempt, but desks and chairs used by clerical personnel are not used directly in research.

Example 3: A company constructs apparatus in its own machine shop, for use only in its research department in experiments on the strength of different alloys. It purchases the materials from which the apparatus is constructed, and special tools and dies needed to construct the apparatus from its suppliers. The materials may be purchased without payment of tax, as directly and predominantly used in research. The special tools and dies are not exempt, as they are not used directly and predominantly in research.

Example 4: An aircraft manufacturer assembles two airplanes, which it uses for function and reliability tests prior to manufacturing this type of airplane for sale. The parts, equipment, instrumentation and fuel are used directly and predominantly in research and development.

Example 5: Technical books and journals purchased for a research and development laboratory, for use in doing background research are exempt.

Example 6: Paper on which research and development test results are recorded is exempt, but paper for in-house printing of summary of research and development findings so that decisions may be made as to the marketability of the new products is taxable as the decision making activity is administrative.

(4)(i) Gas, electricity, refrigeration and steam and gas, electric, refrigeration and steam service is used exclusively in research and development if 100 percent of its use in such function.

(ii) Because gas, electricity, refrigeration and steam when purchased by the user is normally received in bulk or in a continuous flow and a portion thereof is used for purposes which would make the exemption inapplicable to such purchases, the user may claim a refund or credit for the tax paid on the portion used or consumed directly and exclusively in research and development.

(iii) The user must maintain adequate records with respect to the allocation of gas, electricity, refrigeration and steam used directly and exclusively in research and development from that used for nonexempt purposes, the user must when claiming a refund or credit, submit an engineering survey or the formulae used in arriving at the amounts used in an exempt manner.

Example 7: A biological laboratory that develops new vaccines has an autoclave to sterilize instruments and a refrigerator for storage of the vaccine, both run by electricity. It receives one electric bill, which covers general lighting and the electricity required for the autoclave and refrigerator. It may obtain a refund of the portion of the tax applicable to the charge for electricity required to run the autoclave and refrigerator. 20 NYCRR 528.11.

Section 1115(a)(12) of the Tax Law provides an exemption from state sales and use tax for:

Machinery or equipment for use or consumption directly and predominantly in the production of tangible personal property. . . for sale by manufacturing. . . .

Regulation section 528.13 further explains the exemption provided under section 1115(a)(12) of the Tax Law. Paragraphs (1) and (2) of subdivision (c) of section 528.13 provide, in part:

(1) Directly means the machinery or equipment must, during the production phase of a process:

- (i) act upon or effect a change in material to form the product to be sold, or
- (ii) have an actual causal relationship in the production of the product to be sold, or
- (iii) be used in the handling, storage, or conveyance of materials or the product to be sold, or
- (iv) be used to place the product to be sold in the package in which it will enter the stream of commerce.

(2) Usage in activities collateral to the actual production process is not deemed to be used directly in production.

Paragraph (4) of subdivision (c) of section 528.13 provides, in part:

(4) Machinery or equipment is used predominantly in production, if over 50 percent of its use is directly in the production phase of a process.

Section 528.13(b)(1)(ii) provides:

(ii) Production includes the production line of the plant starting with the handling and storage of new materials at the plant site and continuing through the last step of production where the product is finished and packaged for sale.

Section 1105-B(a) of the Tax Law provides that:

Notwithstanding any other provisions of this article, but not for purposes of . . . (the sales and use taxes imposed in New York City and in other localities), receipts from the retail sales of parts with a useful life of one year or less, tools and supplies for use or consumption directly and predominantly in the production of tangible personal property . . . for sale by manufacturing . . . shall be exempt from such tax on and after March first, nineteen hundred eighty-one.

Section 1105-B(b) of the Tax Law provides that:

Notwithstanding any other provisions of this article, but not for purposes of . . . (the sales and use taxes imposed in New York City and in other localities), the taxes imposed by subdivision (c) of section 1105 from every sale of the services of installing, repairing, maintaining or servicing . . . (production machinery and equipment). . . shall be exempt from the tax . . . on and after March first, nineteen hundred eighty-one.

Section 1115(c) of the Tax Law provides that:

Fuel, gas, electricity, refrigeration and steam and gas, electric, refrigeration and steam service of whatever nature for use or consumption directly and exclusively in the production of tangible personal property. . . for sale, by manufacturing . . . shall be exempt from . . . (the state sales and use taxes).

Regulation section 528.22 further explains the exemption provided under section 1115(c) of the Tax Law. Paragraph (3) of subdivision (b) of section 528.22 provides, in part:

(3)(i) Exclusively means that the fuel, gas, electricity, refrigeration and steam and like services are used in total (100%) in the production process.

(ii) Because fuel, gas, electricity, refrigeration and steam when purchased by the user are normally received in bulk or in a continuous flow and a portion thereof is used for purposes which would make the exemption inapplicable to such purchases, the user may claim a refund or credit for the tax paid only on that portion used or consumed directly and exclusively in production.

(iii) In the alternative, an exempt use certificate (Form ST-121) may be used, providing full liability is assumed for any State and local tax due on subdivision (a) of this section. The taxable portion of these purchases is to be reported as a "purchase subject to use tax" on a sales and use tax return required to be filed with the Tax Commission.

(iv) The user must maintain adequate records with respect to the allocation of fuel, gas, electricity, refrigeration and steam used directly and exclusively in production and for nonexempt purposes.

(v) For the purpose of substantiating the allocation of fuel, gas, electricity, refrigeration and steam and like services used directly and exclusively in production from that used for nonexempt purposes, the user must, when claiming a refund or credit, submit an engineering survey or the formulae used in arriving at the amounts used in an exempt manner.

Section 1107(b) of the Tax Law specifically provides the exemptions provided by sections 1115(a)(12) and 1115(c) shall not apply to the sales and use taxes imposed within the City of New York. However, it should be noted that the City of New York does provide certain incentives with respect to machinery and equipment and electricity used in production. Since such incentives are outside of the scope of an advisory opinion, Petitioner should consult the City of New York, Department of Finance for further information.

Section 1210(a)(1) of the Tax Law provides for the exemption from sales and use taxes imposed by localities (other than New York City) of "all sales of tangible personal property for use or consumption directly and predominantly in the production of tangible personal property. . . for sale by manufacturing" Additionally, by operation of section 1210(a)(1) of the Tax Law, the exemption provided by section 1115(c) of the Tax Law for fuel, gas, electricity, refrigeration and steam and gas, electric, refrigeration and steam service for use or consumption directly and exclusively in the production of tangible personal property for sale, by manufacturing applies to sales and use taxes imposed by localities (other than New York City).

Conclusions

Research and Development Equipment

All of the tangible personal property listed above as "Equipment Used to Conduct Research" is used directly and predominantly in research and development in the experimental or laboratory sense within the meaning of section 1115(a)(10) of the Tax Law inasmuch as all such tangible personal property is actually used for experimentation to advance technology in the field of DNA-based disease diagnosis and to develop new products. Additionally, the tangible personal property listed above as "Equipment Used to Store Research Materials" is similarly deemed to be used directly and predominantly in research and development in the experimental or laboratory sense. However, the tangible personal property listed above as "Research Safety Equipment" is not deemed to be used directly and predominantly in research and development since it is not used to perform the actual research and development work but, rather, is used in collateral activities.

Accordingly the purchase of all such tangible personal property used directly and predominantly in research and development by Petitioner is exempt from both state and local (including New York City) sales and use tax. However, "Research Safety Equipment" is not exempt from tax. It should also be noted that other tangible personal property, such as tools, supplies and parts, when used directly and predominantly in research and development in the experimental or laboratory sense is also exempt from tax.

To purchase such exempt tangible personal property without payment of sales tax, Petitioner must be registered as a vendor for sales tax purposes as provided under section 1134 of the Tax Law. Petitioner may then purchase such tangible personal property tax free by presenting to its vendor a properly completed Exempt Use Certificate (Form ST-121). If Petitioner has purchased exempt tangible personal property and paid sales tax thereon, it may file for a credit or refund of such sales tax pursuant to the provisions of section 1139 of the Tax Law if such request for credit or refund is made within the applicable period as provided by section 1139.

Production Equipment

All of the machinery and equipment listed above as "Production Equipment" is used directly and predominantly in the production for sale of tangible personal property by manufacturing or processing within the meaning of sections 1115(a)(12) and 1210(a)(1) of the Tax Law but only if such machinery and equipment is used in the production phase and either acts upon material to form the product to be sold, has an active causal relationship in the production of the product to be sold, is used in the handling or storage of the product to be sold or is used to place the product to be sold in the package in which it will enter the stream of commerce. Additionally, the machinery and equipment listed above as "Storage Equipment" is similarly deemed to be used directly and predominantly in the production for sale of tangible personal property by manufacturing or processing if it is used predominantly to store raw materials. The storage of finished goods which have been packaged and are ready for sale does not qualify as production. The machinery and equipment listed above as "Safety Equipment" is not deemed to be used directly and predominantly in production but, rather, is deemed to be used in collateral activities.

Accordingly, the purchase of all such machinery and equipment used directly and predominantly in the production for sale of tangible personal property by manufacturing by Petitioner is exempt from both state and local (but not New York City) sales and use tax. However, "Safety Equipment" is not exempt from tax.

To purchase such exempt machinery and equipment without payment of sales tax, Petitioner must be registered as a vendor for sales tax purposes as provided under section 1134 of the Tax Law. Petitioner may then purchase such machinery and equipment tax free by presenting to its vendor a properly completed Exempt Use Certificate (Form ST-121). If Petitioner has purchased exempt machinery and equipment and paid sales thereon, it may file for a credit or refund of such sales tax pursuant to the provisions of section 1139 of the Tax Law if such request for credit or refund is made within the applicable period as provided by section 1139.

Gas, Electricity, Refrigeration and Steam

Gas, electricity, refrigeration and steam and gas, electric, refrigeration and steam service used exclusively in research and development experiments or used to operate research and development equipment is used exclusively in research and development within the meaning of sections 1115(b)(ii), 1210(a)(1) and 1107(a) of the Tax Law. Similarly, gas, electricity, refrigeration and steam and gas, electric, refrigeration and steam service used exclusively in the production process or used to operate production machinery is used exclusively in production within the meaning of

TSB-A-86(45)S
Sales Tax
November 12, 1986

sections 1115(c) and 1210(a)(1) of the Tax Law. Accordingly, the purchase of all such gas, electricity, refrigeration and steam and gas, electric, refrigeration and steam service is exempt from state and local (including New York City) sales and use taxes when used in research and development and is exempt from state and local (other than New York City) sales and use taxes when used in production. Petitioner may claim a credit or refund for sales taxes paid on that portion of gas, electricity, refrigeration and steam and gas, electricity, refrigeration and steam services used in an exempt manner. All such claims must be made within the period prescribed by section 1139 of the Tax Law.

In the alternative, an Exempt Use Certificate (Form ST-121) may be used to purchase such utilities tax free providing full liability for the taxable portion of such utilities is assumed and paid on Petitioner's sales tax returns. The allocation of such utilities between exempt and nonexempt purposes must be substantiated by an engineering survey or by the formulae used to arrive at each respective amount which must be made available for review upon request by the Department of Taxation.

Production Parts, Tools and Supplies

Effective March 1, 1981, parts with a useful life of one year or less, tools and supplies for use or consumption directly and predominantly in the production for sale of tangible personal property by manufacturing are exempt from the state sales and use tax. Such parts, tools and supplies are similarly exempt from local sales tax (other than New York City's) and, in fact, were exempt even before March 1, 1981. The procedure for tax free purchase of such tools, parts and supplies and for credit or refund of tax already paid is the same as described above under "Production Equipment".

Installation and Repair Services

Any charges for the installation, repair, maintenance or servicing of exempt research and development property do not qualify for the research and development exemption. Any such charge is subject to both state and local (including New York City) sales and use tax.

However, charges for the installation, repair, maintenance or servicing of exempt production machinery or equipment qualify for exemption from State sales and use tax by operation of section 1105-B(b) of the Tax Law. Such charges continue to be subject to local (including New York City) sales and use tax.

Dated: November 12, 1986

s/FRANK J. PUCCIA
Director
Technical Services Bureau

NOTE: The opinions expressed in Advisory Opinions
are limited to the facts set forth therein.