

Ruling 95-07

Vermont Department of Taxes

Date: June 21, 1995

Written By: Mary L. Bachman, General Counsel

Approved By: Betsy Anderson, Commissioner of Taxes

You have requested a formal ruling on the application of the Vermont sales tax to nitrogen purchased by [Company] for use in the manufacture of composite structures. Specifically, you ask whether the nitrogen is a supply or a fuel for purposes of the tax. This ruling relies on your letter of January 31, 1995, my conversation with you on June 7, 1995 and my conversation with you and [Name] on June 8, 1995.

Facts: [Name] is a manufacturing company located in (Town, State) that manufactures composite structures. It manufactures medical table tops, cassettes for mammograms, other medical equipment, electrical boxes used in space and on airplanes. The advantages of composite structures are that they are lightweight, durable and they allow x-rays to penetrate it whereas wood and other materials do not.

[Company] receives carbon fabric which has been dipped in epoxy resin. It is very pliable. [Company] molds the fabric over foam of the desired form. These forms and material are put into an autoclave, heated and cured into rigid structures. The material is then cooled.

Nitrogen is used as a hydrostatic pressurization medium. Prior to use, the nitrogen is stored as a liquid. It is released into the autoclave through vaporizers during the heating and curing process and fills the autoclave as a gas. The gas, which has more volume than nitrogen as a liquid, applies pressure to the composite material while it is curing, and consolidates the material against the foam. After the material has been cured, the nitrogen is exhausted into the atmosphere. The nitrogen does not become an ingredient or component part of the composite structure.

It undergoes only physical, not chemical, changes during the process. Once it has been exhausted, the nitrogen cannot feasibly be reclaimed, changed into a liquid state and reused.

Air could be used as a pressurizing agent instead of nitrogen. Many manufacturers do use air. The disadvantage of air is that it supports combustion and if a fire starts in the autoclave the materials inside will burn up. Nitrogen, on the other hand, is an inert non-combustible gas.

Ruling: Nitrogen used as a pressurizing agent in the manufacturing process described above is consumed in that process and therefore, is exempt from sales and use tax when purchased by [Company].

Purchase of "[t]angible personal property which becomes an ingredient or component part of, or is consumed or destroyed or loses its identity in the manufacture of tangible personal property for sale but...not...fuel or electricity is exempt from the imposition of sales tax. 32 V.S.A. § 9741(14).

The nitrogen is purchased by [Company] in liquid form. It is used inside the autoclaves to consolidate the composite material against the form. The consolidation occurs when the nitrogen entering the autoclave expands into a gas, exerting pressure on the composite material. When the nitrogen is discharged it is a gas which cannot feasibly be reclaimed as liquid nitrogen. The nitrogen in its liquid form has been consumed in the heating and cooling process necessary to manufacturing the composite forms.

This ruling is issued solely to your firm and is limited to the facts presented as affected by current statutes and regulations. other taxpayers may refer to this ruling to determine the Department's general approach, but the Department will not be bound by this ruling in the case of any other taxpayer or in the case of any change in the relevant statute or regulations.