



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

400 Seventh St., S.W.  
Washington, D.C. 20590

NOV -9 2004

Mr. Carl Piehl  
Production Manager  
Retrotec Inc.  
2200 Queen St., #12  
Bellingham, WA 98226

Ref No.: 04-0189

Dear Mr. Piehl:

This is in response to your letter dated August 12, 2004 requesting clarification of the small quantity exception found in § 173.4 of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask if you can place 25 air current testers each containing 10 ml of "Titanium tetrachloride, UN1838, 8, (6.1), PG II" in a outer packaging and ship the completed package as a small quantity under § 173.4. Additionally, you state that you would like to ship your titanium tetrachloride by air under exemption DOT-E 6971.

"Titanium tetrachloride, UN1838, 8, (6.1), PG II" meets the definition of a Division 6.1, PG I, Zone B material. Therefore, you cannot place 25 air current testers each containing 10 ml of titanium tetrachloride in an outer packaging and ship the completed package under the small quantity exception found in § 173.4. In accordance with § 173.4(a)(1)(iii), the maximum quantity of "Titanium tetrachloride, UN1838, 8, (6.1), PG II" per inner receptacle or article is limited to 1g (0.04 ounces).

To request party status to exemption DOT-E 6971 you must submit your application to the Associate Administrator for Hazardous Materials Safety in accordance with § 107.107.

I hope this information is helpful. Please contact us if you require additional assistance.

Sincerely,

Edward T. Mazzullo  
Director, Office of Hazardous  
Materials Standards



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Retrotec Inc.  
2200 Queen St. #12, Bellingham, WA 98226 (360) 738-9835 Fax 647-7724

Airflow instrument manufacturer since 1980.  
Industrial, Commercial, Scientific and Residential applications worldwide.

To: Edward Mazzullo

Re: Request for letter of determination on the Retrotec Air Current Tester

We would like to have a written determination from DOT concerning the small quantity exemption for 10ml of Titanium Tetrachloride ( $TiCl_4$ ) for ground and air shipments.

#### Ground shipments

We have been told by Arthur Pollack at the DOT that we can ship 10ml of  $TiCl_4$  using the small quantity exemption because the product falls into a pack group "II". However, Cameron Setterthwaite at the DOT has stated that we can ship only 1g (0.6ml) of  $TiCl_4$  because of Special provision "2". A competitor E V Hill Company has been shipping 2ml & 4ml under the small quantity exemption for a long time and we have been informed that they have had extensive meetings with DOT to make sure that they are in line. Please clarify if Retrotec Inc can ship 10ml packets of  $TiCl_4$  by ground under the same small quantity exemption.

#### Air shipments

Protocol Analytical (our supplier) has acquired a special exemption DOT-E 6971 for shipping on airplanes. We would like to find out how to be certified under this exemption so that Retrotec Inc can ship by air also.

Chart 49cfr172.101 seems clear that Titanium Tetrachloride is "hazard code: 8, ID#UN1838, package grp: II, Label Code:8, 6.1, with a host of special provisions and forbidden on any aircraft. But when we start looking at small quantity exemptions it gets very complicated and confusing which, we suspect, is why we can't get a consistent answer.

We believe we have more than enough measures in place to ensure that the chemical remains contained throughout the entire shipping cycle. Each Air Current Tester has a 10ml hermetically sealed glass vial of Titanium Tetrachloride packed inside. The vials are melted shut to ensure they are leak proof. Each vial is wrapped in enough absorbent fiberglass and cotton to soak up all the liquid in the vial. This wrapped vial is then packed inside a Teflon tube that is mechanically sealed with rubber stoppers. Then the Teflon tube is packed inside a PVC pipe which mechanically sealed with plastic stoppers and tape. The pipe has shock absorbing material inside along with MSDS, instructions and spare parts. These PVC pipes are then boxed for shipping with about 2" of absorbent packing material in the box. We have successfully tested the package to comply with 49cfr172.4 package group II standards.

The glass vial can only be broken when ready for use by folding the tester in the middle. This folding is prevented in shipping by the PVC pipe. The user must remove the tester to charge it with the liquid Titanium Tetrachloride from the vial. We have been manufacturing this tester for over 24 years without incident and during that time have made over 100,000 air current testers without any shipping incidents. Over that period we have constantly improved the safety of the product.

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Small Quantity  
Exceptions  
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The tester is completely inactive until the vial is broken and then the cap on the Teflon tube must be removed and the tube repeatedly squeezed to get small amounts of fine particulate to come out that acts to identify air current movement.

We wish to be able to ship 25 testers in a box with each tester containing 10ml of Titanium Tetrachloride by ground.

We would also like to be able to ship them by air. If required for air shipments, we could go the extra step of sealing the device in a plastic/foil pouch as defined in DOT-E 6971 and/or limit the quantity per package to whatever level you determine appropriate.

Your help in this matter is essential to sustaining our active and useful business of providing diagnostic tools to the international energy and fire suppression trades. We would be grateful for your assistance and consideration in this matter.

Yours Truly, Carl Piehl,

A handwritten signature in cursive script that reads "Carl Piehl".

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