



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

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

JAN 11 2007

Mr. George M. Thorpe
DelValCo Consultants
21 Ardmoor Lane
Chadds Ford, PA 19317

Ref. No. 06-0247

Dear Mr. Thorpe:

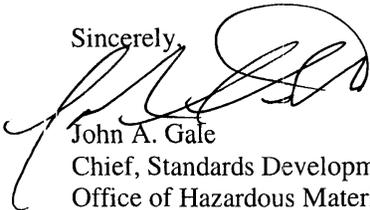
This responds to your letter regarding the shipment of Hydrogen peroxide, aqueous solution with more than 45 percent hydrogen peroxide by aircraft, in accordance with the small quantity exceptions in § 173.4 of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). The kit consists of two plastic syringes, each containing 1.19 ml (totaling 2.38 ml per kit) in an outer packaging (kits per shipping case with a maximum of four kits per case (totaling 9.52 ml per shipping case)).

Under the HMR, a material described as "Hydrogen peroxide, aqueous solution *with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary)*, 5.1, UN2014, PG II" is forbidden for transportation by passenger and cargo-only aircraft (see in §§ 171.11(c) and the 172.101 Table, Columns 9A and 9B).

On March 22, 2006, [71 FR 14586; Docket HM-228] we published a final rule which revised the small quantity exceptions in §173.4 and added a new Special Provision "A60" in §172.102. Special Provision "A60" permits articles such as sterilization devices, UN2014, Hydrogen peroxide, aqueous solutions *with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary)*, when containing less than 30 ml per inner packaging with not more than 150 ml per outer packaging, to be transported in accordance with the provisions in §173.4, irrespective of 173.4(a)(11)(i), provided such packagings were first subject to comparative fire testing. Comparative fire testing must show no difference in burning rate between a package as prepared for transport (including the substance to be transported) and an identical package filled with water.

I hope this satisfies your inquiry. If we can be of further assistance, please contact us

Sincerely,



John A. Gale
Chief, Standards Development
Office of Hazardous Materials Standards



060247

173.4

Engrum
\$173.4
Small Quantity
06-0247

DENTSPLY
PROFESSIONAL

DENTSPLY International
Professional Division
1301 Smile Way
P.O. Box 7807
York, PA 17404-0807
1-800-989-8825
(717) 767-8500
Fax: (717) 767-8250

2 May 2006

DeValCo Consultants
Attn: George M. Thorpe
21 Ardmoor Lane
Chadds Ford, PA 19317

Mr. Thorpe:

Dentsply Professional is requesting that that Nupro White Gold In-Office Tooth Whitening System receive approval to be shipped via air under the small quantities exceptions. The product is comprised of two different gels filled into 2.5 cc syringes; the syringe serves as the inner package or primary container. Each kit contains two syringes of peroxide gel for a total volume of 2.88 g of hydrogen peroxide in each kit; the kit (thermal formed tray with lid) serves as the outer package. It is our understanding that ethylene oxide (UN 1040) is approved for air shipment under small quantities exceptions with limits of 30 ml per inner package and 300 ml per outer package. Our product successfully passed testing under PG I conditions and in accordance we believe that the shipment of hydrogen peroxide in limited quantities poses no greater safety risk or hazard than the shipment of ethylene oxide. We base this belief on the fact the quantity of hydrogen peroxide that we propose to ship is significantly lower than the shipping limits for ethylene oxide and that the chemical characteristics (see Table A for comparison) of hydrogen peroxide are such that it is as safe or safer than ethylene oxide to ship in limited quantities via air travel. I appreciate your assistance with the request.

Regards,


James M. Sherman
Senior Scientist
Dentsply Professional

MIDWEST®

Cavitron™

NUPRO®

DELTON®

TRK- 2006060631
CA- 2006060027

Table A

Characteristic	Ethylene Oxide CAS# 75-21-8	Hydrogen Peroxide CAS #7722-84-1
IATA UN#	1040	2014
Hazard Class	2.3	5.1
Physical State	Gas	Liquid
Flammable	Yes, highly flammable	No
Flash Point	-4 ° F -20 °C	Non-combustible
Oxidizer	No	Yes, strong oxidizer
Vapor Pressure	Not available	18.3 mm Hg @ 30°C
Vapor Density	1.52 g/l	Not available
Hazardous Decomposition Products	Carbon Monoxide, Carbon Dioxide	Oxygen which supports combustion
Stability	Reacts violently with: alcohols, alkali metals, ammonia, oxidizing agents, chemically active metals and their salts	Stable (prolonged exposure to heat and contamination could cause decomposition)
Target Organs	Nerves, lungs	Eyes, skin, nose, throat, lungs
LD50	72 mg/kg	>225 mg/kg
Carcinogenicity	Carcinogen	ACGIH, Animal Carcinogen