



U.S. Department of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

1200 New Jersey Ave, S.E.  
Washington, D.C. 20590

APR 15 2009

Mr. Gene Sanders, DGSA  
Senior Dangerous Good Transportation Specialist  
Thermo Fisher Scientific  
2000 Park Lane  
Pittsburgh, PA 15275

Ref. No. 09-0069

Dear Mr. Sanders:

This responds to your February 19, 2009 email requesting clarification of the classification and description of your product under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you request confirmation that you appropriately class and describe a solution of >99.0 % methanol and less than <1.0% 2,4-Dinitrophenol as "UN1230, Methanol solution, 3, II" and whether the product is eligible for small quantities exceptions.

Under § 173.22, it is the shipper's responsibility to class a hazardous material. This Office does not normally perform this function. 2,4-Dinitrophenol is explosive when dry and requires approval from the Associate Administration prior to transport of the material. However, it is the opinion of this Office that your solution of <1.0% Dinitrophenol (UN0076) is sufficiently diluted so that it is not regulated as a Class 1 explosive or as a Class 3 desensitized explosive nor is it regulated as a Division 6.1 poisonous material. Therefore, "UN1230, Methanol, 3, II" is appropriate to describe your product and the product would be eligible for small quantity exceptions under § 173.4. We note that the qualifying word "solution" must not be added to the proper shipping name. For purposes of the HMR, use of the qualifying word applies to a solution comprised of a hazardous material identified in the § 172.101 Hazardous Materials Table (HMT) and a non-hazardous material.

I hope this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,

Charles E. Betts  
Chief, Standards Development  
Office of Hazardous Materials Standards

Der Kinderen  
§172.101

§173.4(a)

Classification

09-0069

**Drakeford, Carolyn <PHMSA>**

**From:** Gorsky, Susan <PHMSA>  
**Sent:** Friday, February 20, 2009 9:36 AM  
**To:** Drakeford, Carolyn <PHMSA>  
**Subject:** FW: Transport classification verification requested  
**Attachments:** Ultra Sci EPA1114.pdf

Carolyn,

Please enter this as an interpretation request. Thanks.

Susan

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**From:** Sanders, Gene [mailto:gene.sanders@thermofisher.com]  
**Sent:** Thursday, February 19, 2009 3:55 PM  
**To:** Watson, Spencer <PHMSA>; Gorsky, Susan <PHMSA>  
**Cc:** Mayfield, John  
**Subject:** Transport classification verification requested

Dr. Watson and Ms. Gorsky,

Thermo Fisher Scientific has a supplier's product in one of our warehouses that we'd like to re-ship to a customer. Since re-shippers are independently responsible for compliance with the HMR, we are requesting your review of our classification.

The product, supplied by Ultra Scientific (MSDS attached, referenced as EPA-1114), has less than 1% of 2,4-Dinitrophenol, in greater than 99% Methanol. There are three Dinitrophenol Proper Shipping Names listed in the Hazardous Materials Table, but none seem applicable.

UN0076, Dinitrophenol, dry, isn't appropriate because it isn't dry.

UN0076, Dinitrophenol, wetted (with less than 15% water), isn't appropriate because there isn't any water in the product.

UN1320, Dinitrophenol, wetted (with more than 15% water), isn't appropriate because there's no water.

UN1599, Dinitrophenol solutions, isn't appropriate because it doesn't describe the flammability hazard.

It seems quite likely that the 99+% Methanol has desensitized the 2,4-Dinitrophenol, especially when compared to the 15% water needed to achieve that task. And at less than 1%, the toxicity contribution of the 2,4-Dinitrophenol to the overall hazards of the product would be negligible (the 30 mg/kg oral rat LD50 for the pure material would be diluted to >3,000 mg/kg calculated LD50).

So, we propose using a classification of UN1230, Methanol solution, 3, II. And if packaged and marked properly, we believe this product would be eligible for the relief granted in the 49CFR 173.4(a) exception.

Do you agree with these conclusions? Thank you.

Cheers,

Gene Sanders, DGSA  
Senior Dangerous Goods Transportation Specialist

2/20/2009

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<<Ultra Sci EPA1114.pdf>>

## Material Safety Data Sheet

ULTRA Scientific · 250 Smith Street · North Kingstown, RI, USA 02852 · 401-294-9400

Product #: EPA-1114

Last Update: 11/14/2006

### Section I Product Identification

Name: 2,4-Dinitrophenol Solution  
Solvent : methanol (methyl alcohol)

### Section II Composition / Information on Ingredients

Component	CAS#	% by Wt.	LD50	OSHA PEL	ACGIH TLV	RTECS #	Codes
methanol	000067-56-1	99.36789	12900 mg/kg oral mouse	200 ppm	200 ppm	PC1400000	G
2,4-dinitrophenol	000051-28-5	0.63211	30 mg/kg oral rat	N/A	N/A	SL2800000	G

Codes: A-OSHA regulated carcinogen; B-IARC Group 1 carcinogen; C-IARC Group 2A carcinogen; D-IARC Group 2B carcinogen; E-NTP Group 1 carcinogen; F-NTP Group 2 carcinogen; G-SARA Title III compound; H-California Proposition 65 compound.

### Section III Hazards Identification

Toxic; irritant

All chemicals should be considered hazardous - direct physical contact should be avoided.

### Section IV First Aid Measures

Inhalation: If inhaled, remove to fresh air. Give oxygen, if necessary. Contact a physician.  
Skin  
Contact: In case of skin contact, flush with copious amounts of water. Remove contaminated clothing. Contact a physician.  
Eye Contact: In case of eye contact, flush with copious amounts of water, lifting eyelids occasionally. Contact a physician.  
Ingestion: If ingested, contact poison center immediately for recommended procedure. Contact a physician.

### Section V Fire Fighting Measures

Fire and Explosion Hazard Data for Solvent  
Fire Hazard: flammable  
Extinguishing Media: Carbon dioxide, dry chemical powder, or water spray.

### Section VI Accidental Release Measures

Ventilate area of the leak or spill. Wear appropriate personal protective equipment as specified in Section VIII. A leaking bottle, vial, or ampule may be placed in a plastic bag, and normal disposal procedures followed. Take up spilled material with sand or other non-combustible absorbant material, and place in an appropriate container for later disposal. Flush spill area with water.

### Section VII Handling and Storage

May be stored at room temperature  
Keep in a tightly closed container, and store in a corrosion proof area.  
This product should only be used by persons trained in the safe handling of hazardous chemicals.

### Section VIII Exposure Controls / Personal Protection

Ensure that there is adequate ventilation to prevent airborne levels from exceeding recommended exposure limits (see Section II). Use appropriate MSHA/NIOSH approved safety equipment. Wear chemical goggles, face shield, gloves, and chemical resistant clothing, such as a laboratory coat and/or a rubber apron, to prevent contact with eyes, skin, and clothing.

### Section IX Physical and Chemical Properties

**Physical Data for Solvent**

Melting Pt.: -98°C

Vapor Pressure: 100 mmHg @ 21.2°C

Appearance: colorless liquid

Auto-Ignition Temperature: 725°F

Boiling Pt.: 64.8°C

Vapor Density: 1.1

Odor: N/A

LEL: 6.7

Density: 0.791

Water Solubility: soluble

Flash Point: 52°F

UEL: 36

**Section X Stability and Reactivity****Reactivity Data for Solvent**

Stability: stable

Incompatibilities:

strong oxidizers

Hazardous Decomposition Products: N/A

Hazardous Effects of Polymerization: none

**Section XI Toxicological Information**

See Section II for specific toxicological information for the ingredients of this product.

**Section XII Ecological Information**

No information is available.

**Section XIII Disposal Considerations**

Recycle, if possible. Any material which cannot be saved for recovery or recycling should be disposed of at an appropriate and approved waste disposal facility. Processing, use, and/or contamination of this product may change waste management requirements. Observe all applicable federal, state, and local environmental regulations concerning disposal.

**Section XIV Transport Information**

Shipment Type: Chemical Kits

UN Number: UN3316

Shipping Class: 9

Packing Group: N/A

**Section XV Regulatory Information****EU Directives Classification**

R: 11-23/24/25-39/23/24/25

Risk Statements: Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

S: 7-16-36/37-45

Safety Statements: Keep container tightly closed. Keep away from sources of ignition -- No smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**Section XVI Other Information**

The above information is believed to be correct, but does not purport to be all-inclusive. This data should be used only as a guide in handling this material. ULTRA Scientific, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product.