U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue SE
Washington, DC 20590

NOV 8 2011

Mr. James E. Lynch
Mirion Technologies
315 Daniel Zenker Dr.
Building 300 iST Center
Horseheads, NY 14845

Ref. No. 11-0216

Dear Mr. Lynch:

This responds to your September 6, 2011 request for clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to radiation detectors. In your letter, you describe your company's radiation detector as a non-refillable and hermetically sealed welded metallic cylinder with up to three brazed ceramic-to-metal seals (small electrical penetrations) that contains a Division 2.2 (Non-flammable compressed gas) material. Your questions are summarized and answered as follows:

Q1) Section § 173.310 contains regulations applicable to radiation detectors. Does the radiation detector described in your letter meet the definition of "single-trip" and "welded metal inside container" as required by § 173.310(a).

A1) Yes. Section 173.310(a) requires a radiation detector to be single-trip, hermetically sealed, welded metal inside container that will not fragment upon impact. The radiation detector described in your letter is a "welded metal inside container." The term "single-trip" means that the inner packaging is not intended to be refilled and reshipped after having been previously emptied.

Q2) You plan to include a vendor certification letter that the product and its packaging conforms to § 173.310. Will customers be able to use the letter/certification to return the product to your company if the customers use your packaging materials and procedure?

A2) Yes. However, in accordance with § 173.22 it is the shipper's responsibility to comply with aspects of the HMR applicable to offering a hazardous material for transportation. The

letter/certification that you plan to provide your customers will provide valuable information to assist them in satisfying the compliance responsibilities specified in § 173.22.

I hope this answers your inquiry. If you need additional assistance, please contact this office at (202) 366-8553.

Sincerely,

Ben Supko
Acting Chief, Standards Development
Standards and Rulemaking Division

Eichenlaub
§173.310
§173.423

Drakeford, Carolyn (PHMSA)

RAM
11-0216

From: Herzog, Kenneth (PHMSA)
Sent: Wednesday, September 07, 2011 2:08 PM
To: Drakeford, Carolyn (PHMSA)
Subject: FW: DOT SP 7946 and 173.310

From: Lynch, James [mailto:JLynch@mirion.com]
Sent: Tuesday, September 06, 2011 1:49 PM
To: Freeman, Cheryl (PHMSA)
Cc: Herzog, Kenneth (PHMSA)
Subject: RE: DOT SP 7946 and 173.310

From: Lynch, James
Sent: Tuesday, September 06, 2011 1:28 PM
To: 'cherylfreeman@dot.gov'
Cc: 'Kenneth.Herzog@dot.gov'; Lynch, James
Subject: DOT SP 7946 and 173.310

Ref: Mirion (IST) DOT SP 7946

Hi Cheryl,

We received our SP application denial letter dated August 19, 2011. I believe that we meet the intent of 49 C.F.R. 173.310 however would appreciate an interpretation on its wording.

SUBJECT: Mirion (IST) Special Permit DOT-SP 7946 renewal application denial letter dated August 19, 2011 and use of 49 C.F.R. § 173.310.

We received the subject renewal application denial letter and understand the intent is to use §173.310. In reviewing §173.310, as it pertains to shipping our product, we seek clarification.

In particular, §173.310 (a) states "Radiation detectors must be **single-trip**, hermetically sealed, **welded metal inside containers** that will not fragment upon impact."

As described in our expired Special Permit, our radiation detectors are **"non-refillable"** and hermetically sealed, however, their construction is a welded metallic cylinder with up to three brazed ceramic-to-metal seals (small electrical penetrations).

We believe that our radiation detectors meet the requirements of §173.310, however, are unsure of the meaning of "single-trip" and the exactness of "welded metal inside containers". We would appreciate your review of our described product and concurrence it conforms to §173.310 (a).

If there are any questions please contact me. I look forward to your response.

Secondly, I have embedded our revised packaging specification in hopes you will review it for correctness. We plan to include a vendor certification letter that the product and its packaging conforms to 173.310. Our hope is that our

customers could use this letter / certification in returning the product to us as long as they use our packaging materials and procedure.

Packaging Specification 899-158 changes (for Radiation Detector with 95%N_2-5%He with radioactive CO_2 dopant)

Remove Stencil DOT SP 7946

(rationale: 173.310 does not require Stencil)

Change Mark: from Nitrogen Compressed UN1066 to **Compressed Gas, N.O.S. UN1956**

(rationale: gas is 95%N2-5%He with radioactive CO2 dopant)

Change "envelope" to contain letter / vendor certification that package meets 173.310 and copy of MSDS (which Emergency response information in case of exposure fire per 173.310 (d))

MIRION (IST) PROPRIETARY, MUTILATE BEFORE DISCARDING

MIRION TECHNOLOGIES (IST)
Sensing Systems Division
Horseheads, New York

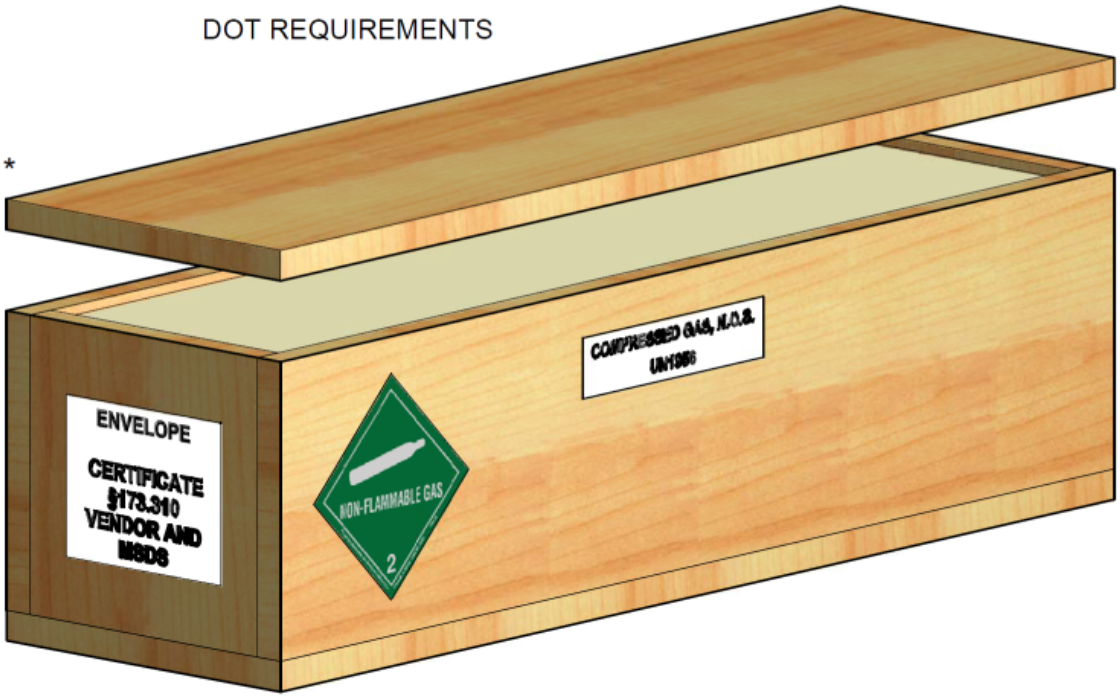
58-2
22-1
DIST

SUBJECT:

SPEC. No. 899-158

DATE	SUPR. DATE	PAGE
9/6/2011	11/21/2006	1 OF 2
	VDL	

DOT REQUIREMENTS



* 1. STENCIL NONE REQUIRED

* 2. ENVELOPE Copy of letter that device and its packaging meet §173.310

* 3. MARK "COMPRESSED GAS, N.O.S. UN 1956". (ref: 49 CFR 172.300).
This DOT marking is an IST printed self-adhesive sheet or equivalent.

* 4. LABEL DOT GREEN DIAMOND "NON-FLAMMABLE GAS #2" (ref: 49 CFR 172.400)

* 5. Radioactive determination (ref. 49 CFR 173.436 and 49 CFR 173.403):

If THREE (3) or more WL-23761 chambers are in a Consignment, the shipment is considered radioactive material and the entry
"LIMITED QUANTITY RADIOACTIVE MATERIAL"
must appear on the shipping paper in association with the basic description per 49 CFR 173.423.

$$\text{Number of Detectors} = \frac{2.7 \times 10^{-4} \text{ [Ci] per 173.436 for C-14}}{100 \times 10^{-6} \text{ [Ci] max per Detector}}$$

Number of Detectors = 2.7 rounded down to two (2)

* 6. Reference: 49 CFR Parts 100 to 185, dated October 1, 2010 or later.

LOCATIONS DEPICTED FOR STENCIL, MARK, LABEL AND ENVELOPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY.

FIGURE 1

NOTES							
UOS DIM. IN INCHES	P	T	QA	F			
★ DENOTES CHANGE	REV.	PC No.	DRWN.	CHKD.	APPR.	DATE	
SCALE: NONE	12	N-10414	TRY				

Thank you,

Jim

Before you print think about the **ENVIRONMENT**

Thank you, Sent from: *Mirion (IST) Campus*

James E. Lynch

Mirion Technologies
Sensing Systems Division
315 Daniel Zenker Dr.
Building 300 iST Center
Horseheads, NY 14845 N 42º 09.21' Latitude
Tel: 607 562-4301 W 76º 55.04' Longitude
Fax: 607 562-4482 926.2 feet Elevation
E-mail: JLynch@Mirion.com
Website: www.Mirion.com

Click here for directions to Horseheads Facility

Click on "Map" for directions to Horseheads Facility **Map**