



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue SE
Washington, DC 20590

JAN 19 2012

Mr. Marty Beyer
Quality Analyst
Chart Industries Inc.
1300 Airport Drive
Ball Ground, GA 30107

Ref. No.: 11-0144

Dear Mr. Beyer:

This responds to your initial July 1, 2011 request and subsequent July 13, 2011 email seeking clarification of the requirements in the International Air Transport Association's (IATA) Dangerous Goods Regulations and the Hazardous Materials Regulations (HMR; 49 C.F.R. Parts 171-180). As information, the IATA regulations do not have official standing under the HMR. The regulations recognized by the HMR and conditionally authorized for use in § 171.22 are the International Civil Aviation Organization's (ICAO) Technical Instructions. Since the 2011-2012 edition of the ICAO Technical Instructions includes the same Packing Instruction 202, this letter interprets the ICAO provision. Your questions are paraphrased and answered below.

Q1. Would the requirements in Packing Instruction 202 for open cryogenic receptacles allow the markings to be engraved or printed on a permanently attached data plate welded to the upper surface of the receptacle?

A1. Yes. Package Instruction 202 requires the marks to be “permanently affixed, e.g. by stamping, engraving or etching.” Markings on a data plate welded to the upper surface of the receptacle would be considered permanently affixed.

Q2. Would the requirements in Packing Instruction 202 for open cryogenic receptacles allow the markings to be on an adhesive label attached to the upper surface of the receptacle?

A2. Yes. Package Instruction 202 of the ICAO Technical Instructions states that the receptacle must be “designed, manufactured, tested and equipped in such a way as to withstand all conditions, including fatigue, to which they will be subjected during their normal use and during normal conditions of transport.” Further, Package Instruction 202 requires that the marks be permanently affixed to the receptacle. While this office generally does not recommend the use of a label for permanently affixing package markings to a receptacle, provided the label is of a permanent character and affixed in a permanent manner, it is our opinion that affixing a printed label is acceptable.

Q3. Would the requirements in Packing Instruction 202 for open cryogenic receptacles allow the markings to be engraved on a tag that is attached by a cable or short chain to the upper surface of the receptacle?

A3. No. It is our opinion that a tag is not affixed to the receptacle.

Q4. May open top cryogenic receptacles with free liquid nitrogen in the bottom be shipped under Package Instruction 202 as a dry shipper?

A4. No. Section 173.320(a) of the HMR provides that cryogenic liquids in Dewar flasks designed and constructed so that the pressure will not exceed 25.3 psig under normal ambient temperature conditions when transported by rail and motor vehicle are not subject to the HMR requirements. However, for transportation by aircraft, an offeror must follow all applicable air transportation requirements. Additionally, when transported by aircraft, a dry shipper may not contain any unabsorbed liquid.

Q5. When returned empty with some absorbed liquid nitrogen, is the container still considered a dry shipper?

A5. Yes. A dry shipper, which is a specially designed Dewar flask that uses nitrogen, refrigerated liquid as a refrigerant, would still be considered a dry shipper if the absorbent material is saturated with nitrogen, refrigerated liquid, with no free liquid present in the packaging.

Q6. What is the function of the UN number marking?

A6. The UN number is an identification number assigned to each proper shipping name of a material designated as a hazardous material in the HMR or a dangerous good in the ICAO Technical Instructions. A list of hazardous materials and their identification numbers is located in the Hazardous Materials Table in § 172.101 of the HMR, and in Table 3.1 of the ICAO Technical Instructions.

I hope this answers your inquiry. If you need additional assistance, please contact the Standards and Rulemaking Division at (202) 366-8553.

Sincerely,



Charles E. Betts
Director

Standards and Rulemaking Division

Winter
IATA/ICAO
11-0144

Drakeford, Carolyn (PHMSA)

From: INFOCNTR (PHMSA)
Sent: Friday, July 01, 2011 1:32 PM
To: Drakeford, Carolyn (PHMSA)
Cc: DerKinderen, Dirk (PHMSA)
Subject: FW: International Interp Request

Hi Carolyn,

We received the following request for an interpretation of the ICAO TI. Dirk Der Kinderen advised that Shane Kelley should be consulted for this letter.

Thanks,
Victoria

Victoria Lehman
Hazmat Information Center (HMIC)
<http://phmsa.dot.gov/hazmat/info-center>
(202) 366-1035

From: Beyer, Marty [mailto:Marty.Beyer@chartindustries.com]
Sent: Friday, July 01, 2011 11:36 AM
To: INFOCNTR (PHMSA)
Subject: FW: Request for formal letter of interpretation IATA 52nd edition, Packing Instructions 202 - Identification marking question

Hello, my name is Marty Beyer and I would like the proper direction to a identification marking question. I was directed David Brennan of IATA that in the US the Pipeline and Hazardous Materials Safety Administration (PHMSA) is the agency that enforce the regulations, and that I should confirm what I propose is acceptable.

I work for Chart Inc. in Ball Ground GA. One of our product lines is Cryopreservation Equipment for Transport Systems for Biological Materials (Non pressurized open top cryogenic vessels with non oxidizing refrigerated liquid). After reviewing the responses below I have a couple questions regarding the new 52nd Edition of the IATA Dangerous Goods Regulations, specifically Packing Instructions 202. We manufacture Liquid Nitrogen biological receptacles, and I'm particularly concerned about the NEW requirement Packing Instructions 202 (i) that Open Cryogenic Receptacles must bear the following marks permanently affixed, e.g. by stamping, engraving or etching (model, manufacturer name & address, serial number, capacity, UN number)

I would like to get an interpretation of what permanently affixed means. We manufacture aluminum units that are then painted and have a long life adhesive label for identification. The problem lies in the complexities of stamping or engraving the compound curve surface on the top of our units and would like clarification on acceptable alternatives.

I would like to have this information so I can direct manufacturing on the correct path.

Will it be acceptable to attach to the upper part of the container as an alternate to stamping, engraving or etching:

Engraved aluminum data plate welded on the data plate corners to the upper surface of the units.

Engraved aluminum data plate 20 gauge (.030") or thicker with permanent adhesive (min 32 oz pull/sqin) to the upper surface of the units.

A heavy aluminum tamperproof foil label (.010) with permanent adhesive (min 32 oz pull /sqin) to the upper surface of the units.

A heavy plastic tamperproof label (.010) with permanent ink and adhesive (min 32 oz pull /sqin) to the upper surface of the units.

Engraved aluminum data plate 20 gauge (.030") or thicker lanyard attached (short cable or chain) to the upper surface of the unit.

The clarification will greatly assist us as all of these alternatives have been discussed but are not known to be acceptable.

Marty Beyer
Quality Analyst
770-721-7686
marty.beyer@chart-ind.com



-----Original Message-----

From: BRENNAN Dave [mailto:brennand@iata.org]
Sent: Friday, July 01, 2011 3:40 AM
To: Beyer, Marty
Cc: Maloy, Neal; Kadrluk, Ben; Thissen, Kevin
Subject: RE: 52nd edition, Packing Instructions 202

Marty,

What you describe for the permanent marking appears to be reasonable. However, as compliance with the regulations is enforced by the competent authority, in the US it's the Pipeline and Hazardous Materials Safety Administration (PHMSA), you should really confirm with PHMSA that what you propose is acceptable.

PHMSA have a safety information center that provides answers/interpretations on the regulations. They can be contacted at: Tel: 1 800 467 4922, (202) 366 4488 or email: infocntr@dot.gov

Regards,

David BRENNAN
Asst. Director Cargo Safety & Standards
Tel: +41-22-770-2947
Fax: +41-22-770-2678
email: brennand@iata.org

International Air Transport Association
33, Route de l'Aéroport
1215 Geneva 15 Airport

Switzerland
www.iata.org/dangerousgoods

Please consider the environment before printing this email

-----Original Message-----

From: Beyer, Marty [mailto:Marty.Beyer@chartindustries.com]
Sent: Thursday, 30 June 2011 22:13
To: BRENNAN Dave
Cc: Maloy, Neal; Kadrlík, Ben; Thissen, Kevin
Subject: FW: 52nd edition, Packing Instructions 202

Hi Dave my name is Marty Beyer, and I also work for CAIRE Inc. After reviewing the responses below I have a couple questions regarding the new 52nd Edition of the IATA Dangerous Goods Regulations, specifically Packing Instructions 202. We manufacture Liquid Nitrogen receptacles, and I'm particularly concerned about the NEW requirement that Open Cryogenic Receptacles must bear the following marks permanently affixed, e.g. by stamping, engraving or etching (model, manufacturer name & address, serial number, capacity, UN number)

I would like to get an interpretation of what permanently affixed means. We manufacture aluminum units that are then painted and have a long life adhesive label for identification. The problem lies in engraving the compound curve surface on the top of the units.

I would like to have this information so I can direct manufacturing on the correct path.

Will it be acceptable to attach to the upper part of the container as an alternate to stamping, engraving or etching:

Engraved aluminum data plate welded on the data plate corners to the upper surface of the units.

Engraved aluminum data plate 20 gauge (.030") or thicker with permanent adhesive (min 32 oz pull/sqin) to the upper surface of the units.

A heavy aluminum tamperproof foil label (.010) with permanent adhesive (min 32 oz pull /sqin) to the upper surface of the units.

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Engraved aluminum data plate 20 gauge (.030") or thicker lanyard attached (short cable or chain) to the upper surface of the unit.

The clarification will greatly assist us as all of these alternatives have been discussed but are not known to be acceptable.

Marty Beyer
Quality Analyst
770-721-7686
marty.beyer@chart-ind.com
ASQ CQE, CQA, CQT

-----Original Message-----

From: BRENNAN Dave [mailto:brennand@iata.org]

Sent: Wednesday, February 23, 2011 2:19 PM
To: Kadrlik, Ben
Subject: RE: 52nd edition, Packing Instructions 202

Ben,

My apologies I should have gotten back to you on this. I raised this at the UN Subcommittee in December and there was agreement that existing cryogenic receptacles should be grandfathered and the marking would only apply to new receptacles manufactured after 1 January 2012. ICAO has adopted this and it will also be brought into the other regulations. Attached is a copy of the addendum to the 52nd edition of the DGR that reflects this in PI 202.

Regards,

David

-----Original Message-----
From: Kadrlik, Ben [mailto:Ben.Kadrlik@CHART-IND.com]
Sent: Wednesday, 23 February 2011 13:51
To: BRENNAN Dave
Subject: RE: 52nd edition, Packing Instructions 202

David-

Hi this is Ben Kadrlik, we spoke back in December regarding the new 52nd edition. I was wondering if you had heard anything further from the last time we spoke. Thank you, Ben K.

-----Original Message-----
From: BRENNAN Dave [mailto:brennand@iata.org]
Sent: Tuesday, December 07, 2010 4:34 AM
To: Kadrlik, Ben
Subject: RE: 52nd edition, Packing Instructions 202

Ben,

The issue of the marking of open cryogenic receptacles has just been discussed by the UN Subcommittee. What was agreed was:

1. The new marking on open cryogenic receptacles will not come into effect until 1 January 2012. This will be addressed in an addendum to the 52nd edition of the DGR;
2. The size of the marking should be as required for cylinders as set out in DGR 6.4.2.7.1; and
3. Existing open cryogenic receptacles do not have to be marked.

Regards,

David

From: Kadrlik, Ben [Ben.Kadrlik@CHART-IND.com]
Sent: Wednesday, December 01, 2010 3:20 PM
To: BRENNAN Dave
Subject: 52nd edition, Packing Instructions 202

David Brennand-

Hi my name is Ben Kadrlik, and I work for CAIRE Inc., and I have a couple questions regarding the new 52nd Edition of the IATA Dangerous Goods Regulations, specifically Packing

Instructions 202. We manufacture Liquid Nitrogen receptacles, and I'm particularly concerned about the NEW requirement that Open Cryogenic Receptacles must bear the following marks permanently affixed, e.g. by stamping, engraving or etching (model, manufacturer name&address, serial number, capacity, UN number) ...

My question(s) are the following:

- * Does this affect units already in the field - i.e. will we need to develop a service plan to take units in and alter them with this engraving/stamping, or will they get to be "grandfathered" in?
- * Does size & location of the engraving/stamping matter? Can we place this information on the outer bottom of the unit (as not to disrupt our paint process)?
- * Since this is IATA and not DOT, it seems to be an international change only, does that mean we are currently okay in the US? Are there plans to harmonize with DOT?

I know this is a lot, but any help would be greatly appreciated!! I believe one of my colleagues, Kevin Thissen, may have already contacted you.
Thank you again, Ben K.

Ben Kadrlik
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Mobile: 678.469.6471
Fax: 770.721.7700

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Winter, Lisa (PHMSA)

From: Beyer, Marty [Marty.Beyer@chartindustries.com]
Sent: Wednesday, July 13, 2011 8:21 AM
To: Winter, Lisa (PHMSA)
Subject: Chart - Request For Formal Letter of Interpretation
Attachments: MVE Doble Series - catalog page.pdf; MVE Cryo Shipper QWick Series - catalog page.pdf; MVE Doble QWick Series - catalog page.pdf

Lisa , thank you for responding back. I am relatively new to this product line and process and I am trying to assist in getting information and interpretations.

We are in the process of getting pictures of the different ways to identify the open cryogenic receptacles. Since we were only discussing these other options it will take us awhile to create and get the pictures for you to review. I have attached catalog pages as a representation of the 3 model lines that will probably be affected by the changes on Packaging Instruction 202

In the meantime I have a few other questions for clarification if you could assist us in clarification it would be greatly appreciated.

On our non pressurized open top cryogenic receptacles the MVE Doble Series & MVE Doble QWick Series are mostly used as dry shippers by our customers. The customers add liquid nitrogen into the unit and is absorbed in a hydrophobic compound so the liquid nitrogen is not in a free state. (Dry shipper). My question is some of our customers "top off" the units with a little free liquid nitrogen in the bottom of the unit to extend the storage time when shipping. Will this still be acceptable under Packaging Instruction 202 as a dry shipper? Or would the unit change category as a Dry shipper to a Liquid shipper. Or is there a limit- say only max 2" of free liquid in the bottom is acceptable?

The next question is when the units need to be returned empty. It may still be cold with some absorbed liquid nitrogen or warm. Would this returning unit be considered a dry shipper or something else like standard freight?

This next question came up in discussion and I am a little confused as I have not seen it stated or have missed it in the standard.

The question is of the function of the UN number? Is this related to the new labeling or registration # ? Or is it something totally not related.

Please assist me and clarify.

I look forward to your reply as we looking forward to implement changes to meet the new requirements.

Thank you

Marty Beyer
Quality Analyst
770-721-7686
marty.beyer@chart-md.com



From: lisa.winter@dot.gov [mailto:lisa.winter@dot.gov]
Sent: Thursday, July 07, 2011 10:15 AM
To: Beyer, Marty
Subject: Request For Formal Letter of Interpretation

Dear Mr. Beyer:

I have been assigned your request for interpretation of ICAO Packing Instruction 202 pertaining to Paragraph 9 and the meaning of "permanently affixed." You provide five scenarios and ask if they meet the requirements of Packing Instruction 202. For us to better determine if the options you describe meet the specifications of Packing Instruction 202, would it be possible for you to provide photographs of the involved open top cryogenic vessels with the markings as provided in each scenario?

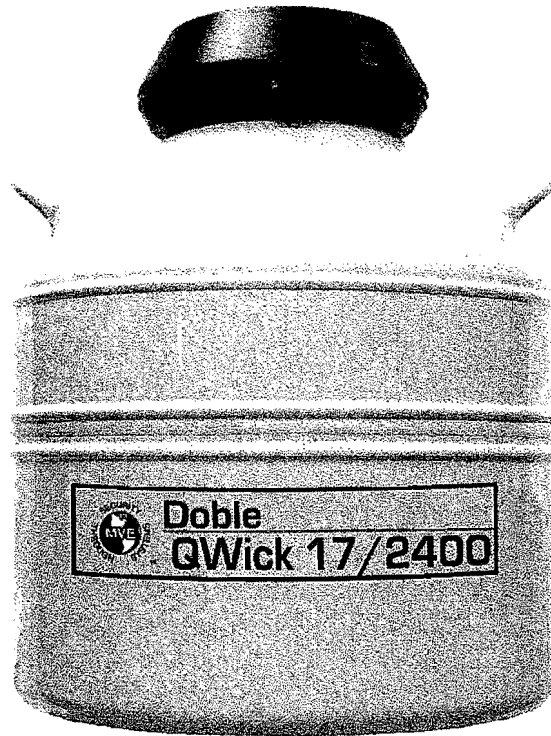
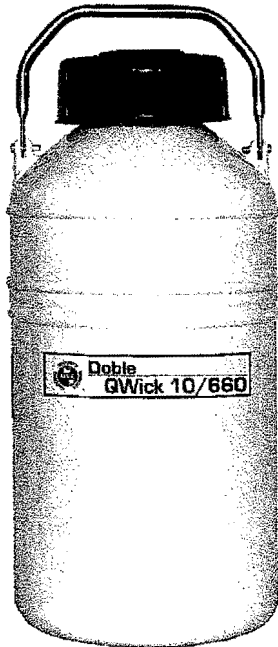
Thank you in advance for your help.

Sincerely,

Lisa (Winter) O'Donnell
Transportation Regulations Specialist
Pipeline and Hazardous Materials Safety Administration
United States Department of Transportation
202.366.6415
<http://www.phmsa.dot.gov/hazmat>



MVE Doble QWick™ Series



The Doble QWick Series utilizes an absorbent wicking material that charges with liquid nitrogen in fewer than two hours, providing the capacity for same-day vapor shipping. A unique absorbent layer in the base of the storage tanks enables them to be charged with nitrogen and employed as dry shippers with hold times of up to 30 days. Once at the final destination, the tanks can be filled with liquid and used for long term storage, therefore avoiding the need for return shipments. Equipped with the same capacity and dimensions as the comparable Doble Series.

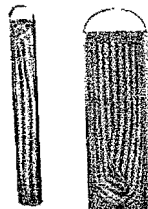
Features Include:

- CHARGES IN LESS THAN TWO HOURS
- Liquid and vapor storage options
- Low liquid nitrogen consumption
- Convenient lightweight package

Accessories:



CryoGloves



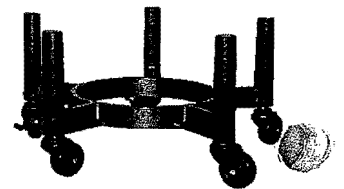
Vapor Insert



Liquid Level
Measuring Stick



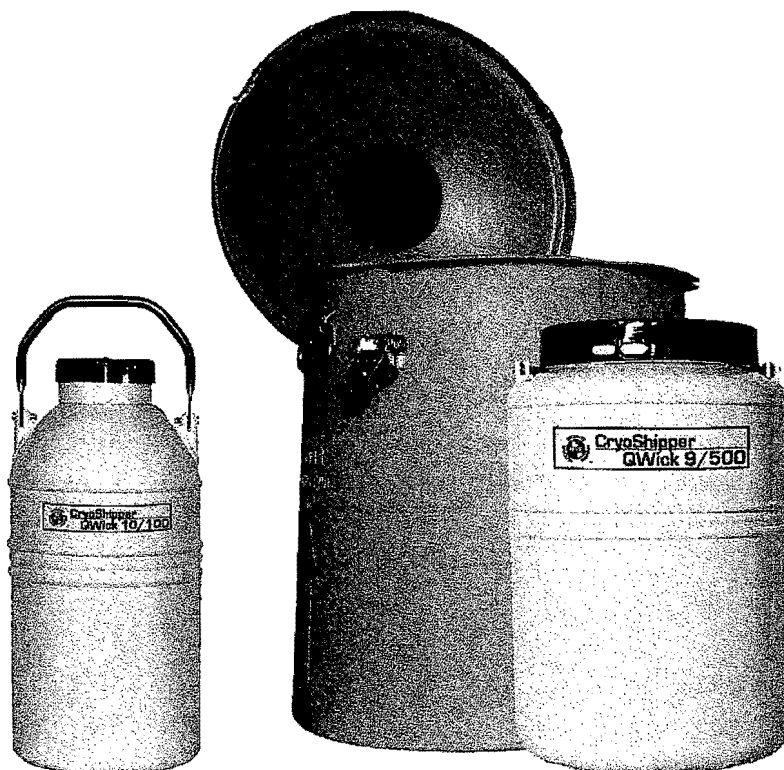
Straws



Roller Base



MVE CryoShipper QWick™ Series



MVE CryoShipper QWick Series utilizes an absorbent wicking material that charges with liquid nitrogen in fewer than two hours, providing the capacity for same-day vapor shipping. Manufactured from durable, lightweight aluminum, they employ a hydrophobic compound which absorbs the liquid nitrogen to ensure dry, spill-free shipping.

Protective shipping cartons are available. These containers may be used to ship your samples with a "non-hazardous" classification throughout the world, thus reducing shipping costs and helping to assure sample viability. Equipped with the same capacity and dimensions as the comparable MVE Vapor Shipper Series.

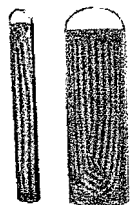
Features Include:

- CHARGES IN LESS THAN TWO HOURS
- Protective shipping carton to ensure upright shipping
- Low liquid nitrogen consumption
- Convenient lightweight packages

Accessories:



CryoGloves



Vapor Inserts



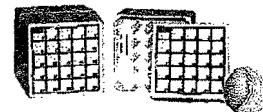
CryoBlocks



Square Racks



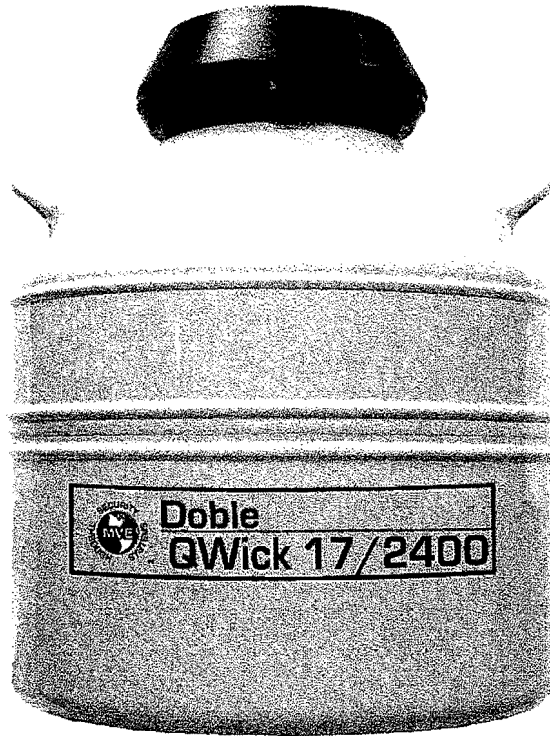
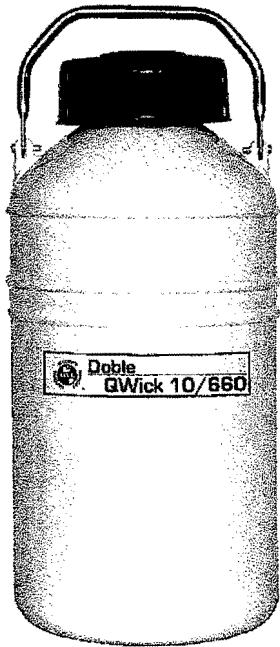
Datalogger



Plastic Boxes



MVE Doble QWick™ Series



The Doble QWick Series utilizes an absorbent wicking material that charges with liquid nitrogen in fewer than two hours, providing the capacity for same-day vapor shipping. A unique absorbent layer in the base of the storage tanks enables them to be charged with nitrogen and employed as dry shippers with hold times of up to 30 days. Once at the final destination, the tanks can be filled with liquid and used for long term storage, therefore avoiding the need for return shipments. Equipped with the same capacity and dimensions as the comparable Doble Series.

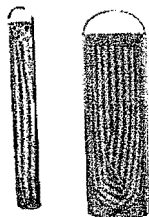
Features Include:

- CHARGES IN LESS THAN TWO HOURS
- Liquid and vapor storage options
- Low liquid nitrogen consumption
- Convenient lightweight package

Accessories:



CryoGloves



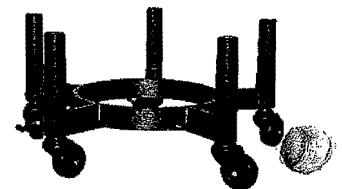
Vapor Insert



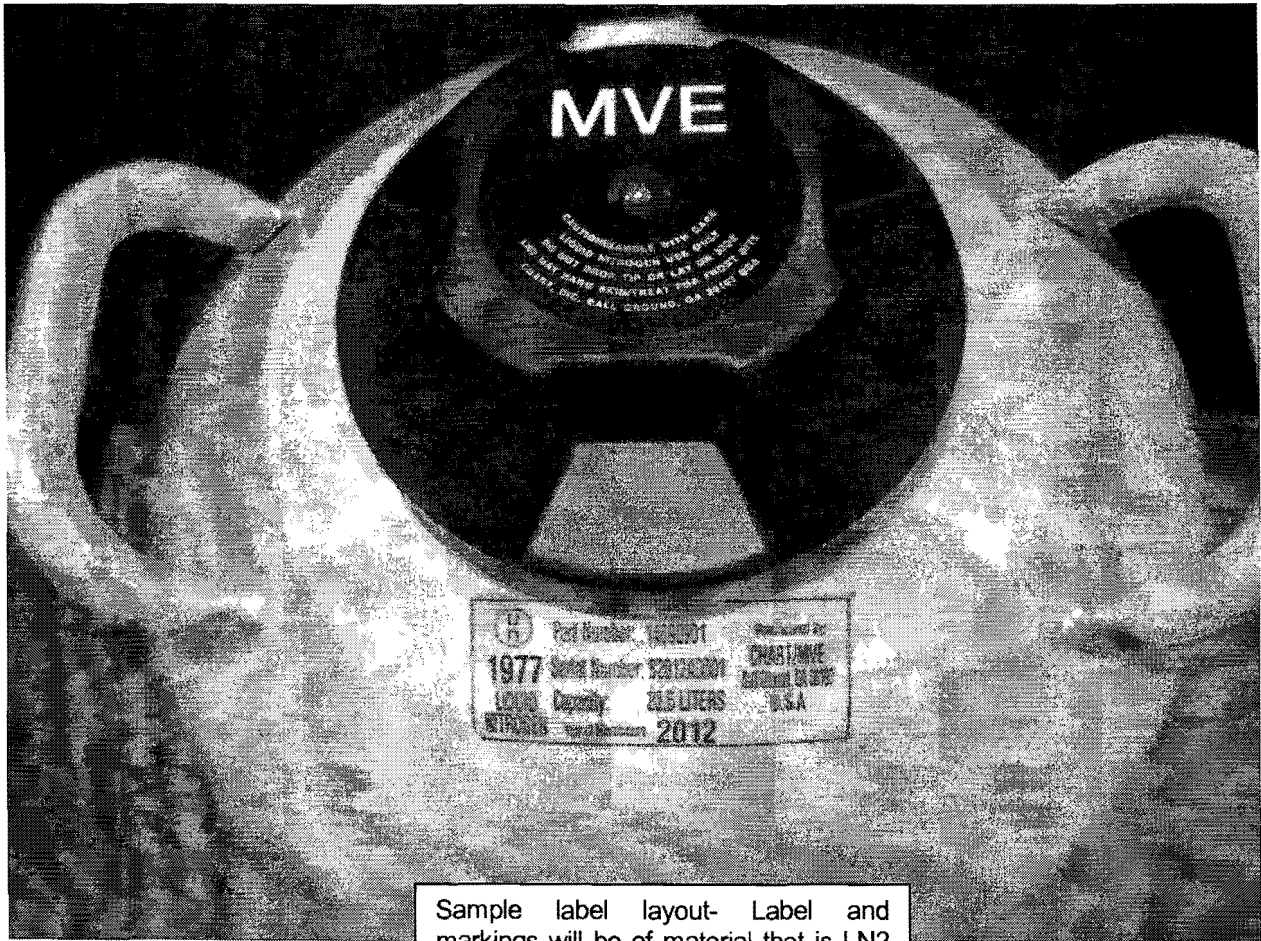
Liquid Level
Measuring Stick



Straws



Roller Base



Sample label layout- Label and markings will be of material that is LN2 compatible with permanent adhesive. Dewar's are aluminum with LN2 compatible paint that very seldom needs repainting for the life of the unit. Label size 1.5" x 3.5" – this is max size to use to be near top of neck.



Sample label layout- Label and markings will be of material that is LN2 compatible with permanent adhesive. Dewar's are aluminum with LN2 compatible paint that very seldom needs repainting for the life of the unit. Label size is 2" x 4"