



High Pressure Cylinder Requalification

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Field Operations**

<http://phmsa.dot.gov/hazmat>

Month/Year



Agenda

- Approval requirements for obtaining RINs
- Cylinder requalification process
- DOT Inspections
- Q & A



Approvals Topics

- General Requirements
- Requalification Approval
- RIN vs. VIN
- Initial vs. Renewal
- Independent Inspection Agency (IIA) Review
- IIA POCs
- Application for Approval
- Approval Submittal Process



Approvals Topics Continued

- Issuance of Requalifier Identification Number (RIN Letter)
- Expiration of RIN
- 107.805 (f)
- Holder of a current RIN
- Regulations, Reference Materials, & Special Permits
- Required Equipment



Requalification Approval

- A person must meet the requirements of 49 CFR 107.805(a) to be approved to inspect, test, certify, repair, or rebuild a cylinder in accordance with a DOT specification or a UN pressure receptacle under subpart C of part 178 or subpart C of part 180, or under the terms of a special permit issued.



“RIN” versus “VIN”

	VIN*	RIN*
IIA Inspection		✓
DOT Approval Letter (renewed every 5 years)	✓	✓
Internal/External Visual		✓
Proof Pressure		✓
Hydrostatic		✓
External Visual Only	✓	✓
DOT Required Training	✓	✓
Applicable CGA's	✓	✓
Requalification Records	✓	✓
5 year requalification	✓	✓
3-20 year requalification		✓

* The U.S Department of Transportation's Associate Administrator only requires a VIN or RIN to be issued for those performing requalification of DOT specification or Special Permit cylinders, or UN pressure receptacles.



Initial vs. Renewal (documentation)

Initial	Renewal
IIA Inspection	IIA Inspection
DOT Required Training (general awareness, function-specific, security awareness)	DOT Required Training (general awareness, function-specific, security awareness) (Recurrent- 3yrs)
Applicable CGA's (IBR in 49CFR)	Applicable CGA's (IBR in 49CFR)
Applicable Special Permits/current 49CFR (hard copy or accessible on-line)	Applicable Special Permits/current 49CFR (hard copy or accessible on-line)
Sample Record(s) (shows understanding)	Last 5-years of actual requalification records



IIA Review

49 CFR 107.805(b)

- *Independent Inspection Agency Review:*
 - Each applicant must arrange for an independent inspection agency, approved by the Associate Administrator to perform a review of its inspection or requalification operation.
 - The person seeking approval must bear the cost of the inspection.
 - A list of approved independent inspection agencies is available online @ www.phmsa.dot.gov

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Cylinders

Information about gaining approval to manufacturer or requalify cylinders of various types as well as listings of authorized cylinder manufacturers and requalifiers.

Approvals Search Tools

Note the data used to populate "Approval Search" is being reconfigured into a new document management system and as a result some of the data posted may be a few weeks out of date. We anticipate that the search feature will be up-to-date by mid-March. If you need information concerning application status that is not available in this search, please contact: PHMSA Approvals@dot.gov or call 202/366-3987. We apologize for any inconvenience. (Note approved by the Office of Special Permits and Approvals)

- [Approvals Search](#)
- [Terminated Approvals](#)

3AL Cylinder Information

- [Report and Information on DOT 3AL Cylinders](#)

Authorized Manufacturers and Retesters

- [Independent Inspection Agencies \(XLS\)](#)
DOT Cylinder Requalification Program within the U.S.
- [Approved Foreign Manufacturers - Updated September 2010](#)
Manufacturers of DOT Cylinders
- [Designated Approval Agencies for UN Portable Tanks and](#)

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Frequently Asked Questions

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IIA Point of Contacts

Company/Location	ID #	Contact Information	Foreign Manufacturing Inspection	Domestic Manufacturing Inspection	Requalification	Currently Active?
Arrowhead Industrial Services, Inc. 3537 South NC 119 Graham, NC 27253	IA01	R. G. Wilson rgwilson@arrowheadindustrial.com Telephone: (336) 578-2777 Fax: (336) 578-2929	Yes	Yes	Yes	Yes
Authorized Testing, Inc. 2522 Kansas Avenue Riverside, CA 92507	IA02	Frank Jensen f.jensen@authorizedtesting.com Telephone: (951) 682-4110 Fax: (951) 682-6090	Yes	Yes	Yes	Yes
T.H. Cochrane Laboratories 5811 N. 96th Street Milwaukee, WI 53214	IA03	John Harris jaharris@wi.twcbc.com Telephone: (414) 476-2500 Fax: (414) 464-3786	Yes	Yes	Yes	Yes
Bureau Veritas North America, Inc 580 Waters Edge, Oak Creek Center, Suite 210 Lombard, IL 60148	IA04	Randy Risinger randy.risinger@us.bureauveritas.com Telephone: (680) 691-4333 Fax:	No	Yes	Yes	Yes
Professional Services, Inc. PSI - Special Testing Department 850 Poplar Street Pittsburgh, PA 15220	IA06	Paul Medwig paul.medwig@psiusa.co Telephone: (412) 922-400 0x283 Fax: 412.922.4043	No	Yes	Yes	Yes
Steigerwalt Associates 1121 South 24th Street Allentown, PA 18103	IA11	Ernie Steigerwalt ees2@ptd.net Telephone: (610) 437-1704 Fax: (610) 437-4545	Yes	Yes	Yes	Yes
Cylinder Services, Inc. 15270 Westover Road, P.O. Box 52 Elm Grove, WI 53122	IA18	Russell Stading cylserv@msn.com Phone/Fax: (414) 328 0500	Yes	Yes	Yes	Yes



Application for Approval 49 CFR 107.805(c)

- *Application for approval.* If the inspection performed by an independent inspection agency is completed with satisfactory results, **the applicant** must submit a letter of recommendation from the independent inspection agency, an inspection report, and an application containing the information prescribed in §107.705(a).



Application for Approval Continued

- The application must contain:
 - The name of the facility manager;
 - The types of DOT specification or special permit cylinders, or UN pressure receptacles that will be inspected, tested, repaired, or rebuilt at the facility;
 - A certification that the facility will operate in compliance with the applicable requirements of subchapter C.
 - The signature of the person making the certification and the date on which it was signed.



Application Submittal

- Applications may be submitted by mail to:

Associate Administrator for Hazardous Materials Safety
PHMSA

U.S. Department of Transportation

Attention: PHH-30

1200 New Jersey Avenue, SE East Building, 2nd Floor
Washington, DC 20590-0001

- Or through the NEW “On-Line Special Permit & Approval Application System, which provides faster processing/turnaround time, 24/7 access, immediate confirmation and tracking #, @

<https://hazmatonline.phmsa.dot.gov/Online%20Approvals/pages/welcome.aspx>



Issuance of RIN 49 CFR 107.805(d)

- *Requalifier identification numbers (RIN) are issued by the Associate Administrator as evidence of approval to requalify DOT specification or special permit cylinders, or UN pressure receptacles if it is determined, based on: the applicant's submission and other available information, that the applicant's qualifications and, when applicable, facility are adequate to perform the requested functions in accordance with the established criteria in subpart C of part 180 of 49CFR.*



RIN (Approval) Letter



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety Administration

East Building, PH-1 - 32
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

November 10, 2011

Expiration Date: Nov 10, 2016

Mr. Chris Customer
Facility Manager
ABC+123 Fire Protection, Inc.
4000 Fire Lane
Atlanta, GA 33333

Dear Mr. Customer:

The Office of Hazardous Materials Special Permits and Approvals has reviewed your application for approval as a cylinder requalification facility under Section 107.805 of Title 49 Code of Federal Regulations (49 CFR). At the recommendation of "Insert IIA Reference", this office is issuing the requalifier identification number (RIN) A123 to your facility at 4000 Fire Lane, Atlanta, GA. This number applies to this location only and is valid until the posted expiration date above or until terminated by the Associate Administrator for Hazardous Materials Safety.

In addition to the requalification of cylinders under the relevant provisions of Sections 180.205 through 180.215 of 49 CFR, the following conditions must be met:

1. You must notify this office of any change in facility name, address, management, equipment or testing personnel within twenty days of the change.
2. Inspections and tests must be performed by, or in the presence of, a person who has been observed by the authorized inspector, or who has been added to your file by addition under condition number one (1) above.
3. A copy of this approval must be maintained adjacent to the testing unit.
4. This approval is renewable every five years.
5. Copies of your application and all supporting documentation must be retained and made available to DOT upon request.
6. Each "Hazmat employee", as defined in Section 171.8, who performs a function subject to this approval must receive appropriate training in accordance with Section 172.700 through 172.704.
7. All correspondence must include the requalifier identification number (RIN).

In addition to the requalification of cylinders under the relevant provisions of Sections 180.205 through 180.215 of 49 CFR, the following conditions must be met:

1. You must notify this office of any change in facility name, address, management, equipment or testing personnel within twenty days of the change.
2. Inspections and tests must be performed by, or in the presence of, a person who has been observed by the authorized inspector, or who has been added to your file by addition under condition number one (1) above.
3. A copy of this approval must be maintained adjacent to the testing unit.
4. This approval is renewable every five years.
5. Copies of your application and all supporting documentation must be retained and made available to DOT upon request.
6. Each "Hazmat employee", as defined in Section 171.8, who performs a function subject to this approval must receive appropriate training in accordance with Section 172.700 through 172.704.
7. All correspondence must include the requalifier identification number (RIN).



Expiration of RIN 49 CFR 107.805(e)

- *Expiration of RIN:*
 - Unless otherwise provided in the issuance letter, an approval expires five years from the date of issuance, provided the applicant's facility and qualifications are maintained at or above the level observed at the time of inspection by the independent inspection agency, or at the date of the certification in the application for approval for requalifiers only performing inspections made under §180.209(g).



49 CFR 107.805(f)

- ***No person*** may requalify a DOT specification/special permit cylinder, or UN pressure receptacle in accordance with §180.209(g) of this chapter **unless** that person has been issued an approval from the Associate Administrator for Hazardous Material Safety (PHMSA) to perform requalification.



Holder of a current RIN 49 CFR 107.805(g)

- Each holder of a current RIN shall report **in writing** any change in its name, address, ownership, testing equipment, or management or personnel performing any function under this section, to the Associate Administrator (PHH-32) within **20** days of the change.
 - These changes may be submitted by mail or on-line.



Regulations, Reference Material, Special Permits

March 3, 2010


U.S. Department
of Transportation

East Building, PHB-30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

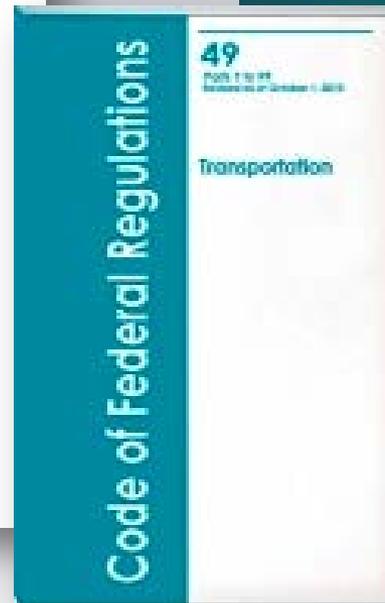
Pipeline and Hazardous
Materials Safety Administration

DOT-SP 10945
(TWENTYFOURTH REVISION)

EXPIRATION DATE: September 30, 2013

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE:
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, marking, sale, and use of non-DOT specification fully wrapped carbon fiber reinforced aluminum lined cylinders for the transportation in commerce of the materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 180.205, 173.302a(a)(1), 173.304a(a)(1) and 175.3 in that non-DOT specification cylinders are not authorized except as prescribed herein.
5. BASIS: This special permit is based on the application of Structural Composites Industries (SCI) dated June 30, 2009, and additional information dated February 16, 2010, February 17, 2010 and February 19, 2010, submitted in accordance with § 107.105 and the public proceeding thereon.





Equipment Required



Testing Apparatus



Scale



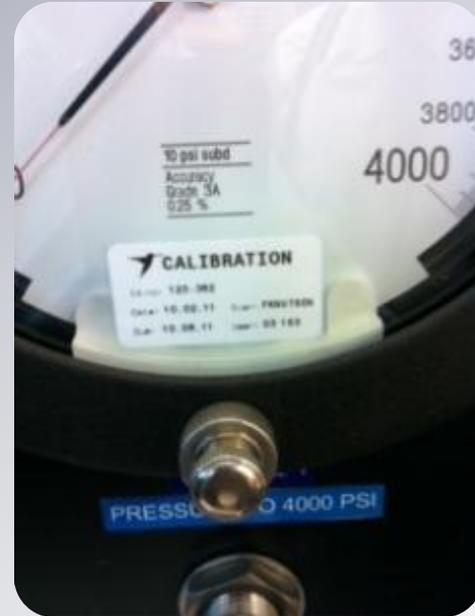
Dead Weight Tester



Equipment Required Continued



Gauges



Certification of Calibration



Equipment Required Continued



Calibrated Cylinder

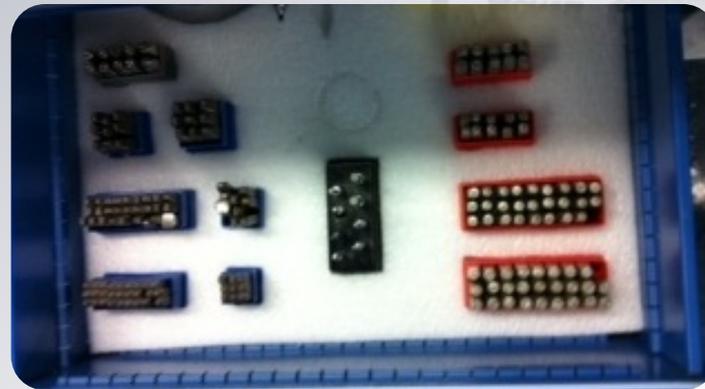
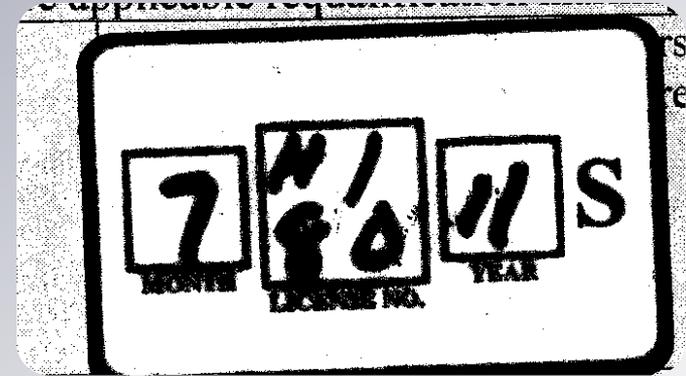


Equipment Required Continued



Inspection light/mirrors

Requalification
label



Requalification Stamps
High Stress/Low Stress



Cylinder Requalification Topics

- Purpose and Scope
- Applicability
- General Requirements
- Definitions
- Cylinder Requalification Table
- Testing Criteria
- Condemnation Requirements/Actions
- Cylinder Markings
- Records



Cylinder Requalification Process

- **§180.1 Purpose and scope:**
 - Prescribes the requirements pertaining to the maintenance, reconditioning, repair, inspection and testing of packaging, and any other function having an effect on the continuing qualification and use of a packaging under the requirements of 49CFR.



Applicability

■ §180.2 Applicability:

- Any person who performs a function prescribed in this part shall perform that function in accordance with this part.
- Any person who performs a function prescribed in this part is considered subject to the regulations of this subchapter when that person:
 - Makes any representation indicating compliance with one or more of the requirements of this part; or
 - Reintroduces into commerce a packaging that bears markings indicating compliance with this part.



General Requirements

- **§180.205 General requirements for requalification of cylinders:**
 - Each cylinder used for the transportation of hazardous materials must be an authorized packaging. To qualify as an authorized packaging, each cylinder must conform to subpart C, the applicable requirements specified in Part 173, and the applicable requirements of Subpart C of Part 178 of 49CFR.



Definitions

- Definitions of cylinder requalification terms can be found in 49CFR Section 180.203. Examples are:
 - Condemn
 - Defect
 - Elastic Expansion
 - Filled or Charged
 - Non-corrosive service
 - Over-heated
 - Permanent expansion
 - Rejected Cylinder
 - Requalification
 - Test pressure
 - Total expansion
 - Volumetric expansion test
 - Water jacket method
 - Direct expansion method

Note: The term “cylinder” includes UN pressure receptacles.



Requalification Table

Specification under which cylinder was made	Minimum test pressure (psig)²	Requalification period (years)
4B, 4BA, 4BW, 4B240ET*	2 times service pressure, except non-corrosive service (see §180.209(g))	5, 7, 10, or 12 (see §180.209(e), (f), and (j))
DOT 3	3000 psig	5
DOT 3A, 3AA	5/3 times service pressure, except noncorrosive service (see §180.209(g))	5, 10, or 12 (see §180.209(b), (f), (h), and (j))
DOT 3AX, 3AAX	5/3 times service pressure	5
3B, 3BN	2 times service pressure	5 or 10 (see §180.209(f))
3E	Test not required	
3HT	5/3 times service pressure	3 (see §§180.209(k) and 180.213(c))
3T	5/3 times service pressure	5



Requalification Table Continued

Specification under which cylinder was made	Minimum test pressure (psig) ²	Requalification period (years)
4AA480	2 times service pressure (see §180.209(g))	5 or 10 (see §180.209(h))
4D, 4DA, 4DS	2 times service	5
DOT 4E*	2 times service pressure, except non-corrosive (see §180.209(g))	5 or 7 (see §180.209(e))
4L	Test not required	
8, 8AL		10 or 20 (see §180.209(i))
Exemption or special permit cylinder	See current exemption or special permit	See current exemption or special permit
Foreign cylinder (see §173.301(j) of this subchapter for restrictions on use)	As marked on cylinder, but not less than 5/3 of any service or working pressure marking	5 (see §§180.209(l) and 180.213(d)(2))



Testing Criteria

- Visual
 - Internal
 - External
- System Calibration
 - Accuracy must be verified to be within +/-1% of calibration certificate values for pressure and expansion.
- Testing Procedures
 - Minimum test pressure must be maintained for at least *30 seconds (or as designated by special permit), and as long as necessary for complete expansion of the cylinder.



Testing Criteria Continued

- A system check may be performed at or below 90% of test pressure prior to testing.
- In the case of a **malfunction of the test equipment**, the test may be repeated **one time** at a pressure increased by 10% or 100 psig, whichever is less.
 - Retesting of a cylinder otherwise required to be condemned by 180.205(g) is **NOT PERMITTED.**



Condemnation Requirements

49 CFR 180.205(i)

- A cylinder must be condemned when:
 - The cylinder meets a condition for condemnation under the visual inspection requirements of paragraph (f) of 180.205.
 - The cylinder leaks through its wall.
 - Evidence of cracking exists to the extent that the cylinder is likely to be weakened appreciably (Reference applicable CGA pamphlet).
 - For a DOT specification cylinder, other than a DOT 4E aluminum cylinder or a special permit cylinder, permanent expansion exceeds 10 percent of total expansion.



Condemnation Requirements

49 CFR 180.205(i)

- For a DOT 3HT cylinder —*(High Stress/Low Stress)
 - The pressure test yields an elastic expansion exceeding the marked rejection elastic expansion (REE) value.
 - The cylinder shows evidence of denting or bulging.
 - The cylinder bears a manufacture or an original test date older than twenty-four years or after 4380 pressurizations, whichever occurs first. If a cylinder is refilled, on average, more than once every other day, an accurate record of the number of rechargings must be maintained by the cylinder owner or the owner's agent.



Condemnation Requirements Continued

- For a DOT 4E aluminum cylinder, permanent expansion exceeds 12 percent of total expansion.
- For a DOT special permit cylinder, permanent expansion exceeds the limit in the applicable special permit, or the cylinder meets another criterion for condemnation in the applicable special permit.
- For an aluminum or an aluminum-lined composite special permit cylinder, the cylinder is known to have been or shows evidence of having been over-heated.



Condemnation Actions

- When a cylinder must be condemned the **Requalifier** MUST:
 - Stamp a series of X's over the DOT specification number and the marked pressure, or stamp “CONDEMNED” on the shoulder, top head, or neck using a steel stamp.
 - For composite cylinders, securely affix to the cylinder a label with the word “CONDEMNED” overcoated with epoxy near, but not obscuring, the original cylinder manufacturer's label.
 - As an alternative to the stamping or labeling, at the direction of the owner, the requalifier may render the cylinder incapable of holding pressure.



Condemnation Actions Continued

- **No person** may remove or obliterate the “**CONDEMNED**” marking.
 - The requalifier must notify the cylinder owner, in writing, that the cylinder is condemned and may not be filled with hazardous material and offered for transportation in commerce where use of a specification packaging is required.
 - The requalifier must get permission of the owner before rendering the cylinder incapable of holding pressure.



Cylinder Markings

- DOT-3AL1800
- 1234
- XY
- AB 10-88

OR

- DOT-3AL1800-1234-XY AB 10-88
- Where: DOT-3AL = specification number
- 1800 = service pressure
- 1234 = serial number
- XY = symbol of manufacturer /or M number – M1234
- AB = inspector's mark
- 10-88 = date of test (Manufacturer Date)





Overall Record Retention

- Reporting and record retention requirements:
 - Facility records: A person who requalifies, repairs or rebuilds cylinders must maintain the following records where the requalification is performed:
 - Current RIN issuance letter;
 - If the RIN has expired and renewal is pending, a copy of the renewal request;
 - Copies of notifications to Associate Administrator required under §107.805 of this chapter;
 - 49CFR, applicable IBR CGA pamphlets, and special permits



Common DOT Inspection Findings

- Calibration
 - Not within +/-500 psig of cylinders being tested
 - Verifying accuracy within +/- 1%
 - No calibration performed
- Not testing at minimum required test pressure
- Failure to condemn
 - Retesting a cylinder that should have been condemned
 - Multiple retests
- Records violations
 - Failure to document all requalification testing
 - Failure to document retests and reasons for repeated test



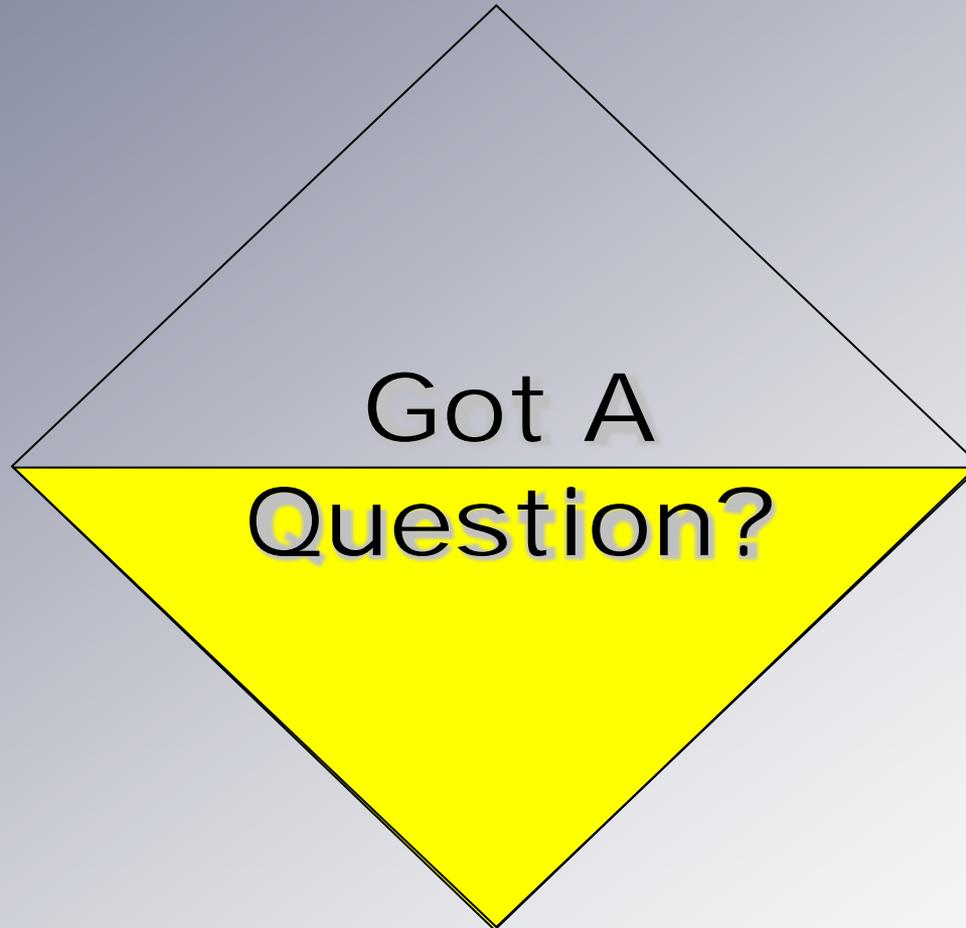














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Hazardous Material Info-Center

1-800-HMR-4922

(1-800-467-4922)

E-mail: infocntr@dot.gov

Hours of Operation: 9 am – 5 pm ET



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E-mail: infocntr@dot.gov