METRIC

A-A-59503B
20 October 2008
SUPERSEDING
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9 November 2006

COMMERCIAL ITEM DESCRIPTION

NITROGEN, TECHNICAL

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. SCOPE. This commercial item description (CID) covers two types of nitrogen: liquid and gaseous. Each type of nitrogen can be obtained in two different technical grades based on nitrogen purity and oxygen content. Liquid nitrogen is used as a cooling agent for low temperature and cryogenic processes to shield temperature sensitive materials and equipment from the effects of heat. Gaseous nitrogen is used to purge or pressurize systems or provide inert atmospheres. The list of intended use includes, but is not limited to, pressurizing fuel tanks, hydraulic system accumulators, aircraft struts, rocket engine propellant systems, and carbon dioxide cylinders; purging aircraft oxygen converters; and purging and calibrating instruments. Since some systems are sensitive to oil contamination, gaseous nitrogen is divided into two classes: oil free and oil tolerant. Class 1, oil free nitrogen, is used for applications which cannot tolerate hydrocarbons, such as the purging of oxygen equipment. Class 2, oil tolerant nitrogen, is used for pressurizing oil-containing systems such as aircraft struts.

2. CLASSIFICATION. The nitrogen shall conform to the following types, grades, and classes:

2.1 Type. The type of technical nitrogen shall be as specified in the acquisition order (see 7.4(b)).

Type I - gaseous
Type II - liquid

2.2 Grade. The grade of technical nitrogen shall be as specified in the acquisition order (see 7.4(c)).

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: STDZNMGT@dla.mil or Defense Supply Center Richmond (DSCR), ATTN: DSCR-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616.

Grade A - 99.95 percent pure nitrogen
Grade B - 99.50 percent pure nitrogen

2.3 Class. The terms “oil free” and “oil tolerant”, indicated by class 1 and class 2, replaced the older terms “water pumped” and “oil pumped”, respectively. The older terminology referenced the type of compressors, water and soap lubricated or oil lubricated, used in charging nitrogen gas into cylinders. Because of today’s different compressors or systems being used, the newer terms now refer to the type of application. When applied to nitrogen, the term “oil free” shall be used to identify applications that cannot tolerate hydrocarbon contamination. The term “oil tolerant”, when applied to nitrogen, indicates that the gas can be used in applications that can tolerate or contain hydrocarbon material. This terminology only applies to gaseous nitrogen. (see 7.5). The class of technical nitrogen shall be as specified in the acquisition order (see 7.4(d)).

Class 1 - oil free
Class 2 - oil tolerant (type I only)

3. SALIENT CHARACTERISTICS

3.1 Nitrogen purity. The amount of nitrogen in the material shall be a minimum of 99.95 percent by volume (v/v) for grade A nitrogen, or 99.50 percent v/v for grade B nitrogen. This includes trace amounts of neon, argon and helium. The purity shall be determined by one of the methods described in Compressed Gas Association (CGA) G-10.1, "Commodity Specification for Nitrogen".

3.2 Oxygen content. The amount of oxygen in the material shall have a maximum of 0.05 percent v/v for grade A nitrogen, or 0.5 percent v/v for grade B nitrogen. The oxygen content shall be determined by one of the methods described in CGA G-10.1, "Commodity Specification for Nitrogen".

3.3 Moisture content. The amount of moisture in the material shall have a maximum of 26 parts per million (ppm) for both grades A and B nitrogen. The moisture content shall be determined by one of the methods described in CGA G-10.1, "Commodity Specification for Nitrogen".

3.4 Odor. The nitrogen shall have no odor when tested in accordance with CGA G-10.1, "Commodity Specification for Nitrogen".

3.5 Total hydrocarbon content (THC). Both grades of nitrogen shall be free of oil contamination and shall have a total hydrocarbon level less than 50 ppm as methane by volume, when specified in the acquisition order (see 7.4(e)). It shall be determined by one of the methods described in CGA G-10.1"Commodity Specification for Nitrogen".

3.6. Particulate matter. Type I nitrogen shall contain no solid particles whose maximum dimensions are greater than 50 microns when specified in the acquisition order (see 7.4(f)). It shall be determined by any acceptable commercial method used by the manufacturers of nitrogen gas. Because the major contamination is from cylinders, control of particulate matter in the user’s dispensing equipment can be assured by the installation of a 10um or better nominal filter in the service line.

4. REGULATORY REQUIREMENTS

4.1 Recovered materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5.2 Market acceptability. The product offered must have been previously sold either to the government or on the commercial market.

5.2.1 Market acceptability criterion. The company must be able to show data from tests or process monitoring that demonstrates the ability of the product to meet the salient characteristics of technical grade nitrogen.

6. PACKAGING

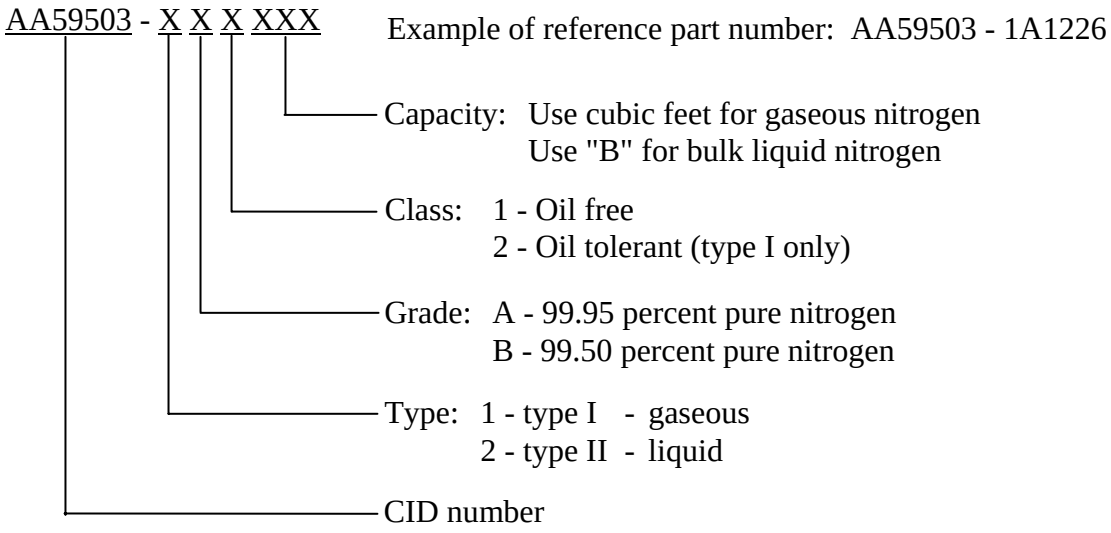
6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the acquisition order (7.4(g)).

6.2 Packaging and special markings. All government owned cylinders that have been provided for filling shall be reconditioned as necessary in accordance with MIL-STD-1411. DoD cylinders shall conform to RR-C-901, their valves to MIL-DTL-2, and the cylinders color coded in accordance with MIL-STD-101. The capacity, in cubic feet for gaseous nitrogen or "B" for bulk liquid nitrogen, shall be as specified in the acquisition order (see 7.4(h)).

6.3 Palletization. The palletization of material shall be as specified in the acquisition order (see 7.4(i)). MIL-STD-147 may be used for palletization.

7. NOTES

7.1 Part or identification number (PIN). The following PIN procedure is for government purposes and does not constitute a requirement for the contractor.



7.2 Sources of documents.

7.2.1 FAR. Copies of the FAR are available on line at http://www.gpoaccess.gov/ from the U.S. Government Printing Office, P.O. Box 979050, St. Louis, MO 63197-9000, or by calling (866)-512-1800 (or if in the DC area call (202) 512-1800).

7.2.2 Federal specifications and standards. Copies of these documents are available online at http://assist.daps.dla.mil/quicksearch/ or http://assist.daps.dla.mil or from the Standardization Document order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

7.2.3 Military standards, and handbooks. Copies of these documents are available online at http://assist.daps.dla.mil/quicksearch/ or http://assist.daps.dla.mil or from the Standardization Document order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

7.2.4 CGA standards. Copies of these documents are available online at http://www.cganet.com/ or from the Compressed Gas Association, Inc., 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923.

7.3 International standardization agreements (ISAs). Certain provisions of this CID (section 3) are subject to the following international standardization agreements:

AIR-STD-15/10, “Compressed Nitrogen Characteristics for Oil Tolerant Use (including supply pressure and hoses)”,

AIR-STD-15/11, “Oil Free Compressed Nitrogen Characteristics, (including supply pressure and hoses)",
AIR-STD-15/12, “Liquid Nitrogen Characteristics”,
NATO STANAG 3624, “Characteristics of Oil-free Compressed Nitrogen, Supply Pressure and Hoses”.

When amendment, revision, or cancellation of this specification is proposed which will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations. Copies of these ISAs are available online at http://assist.daps.dla.mil/quicksearch/ or http://assist.daps.dla.mil or from the Standardization Document order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

7.4 Ordering data. The acquisition order should specify the following:

a. CID document number, revision, and CID PIN (see 7.1)
b. Type of technical nitrogen (see 2.1).
c. Grade of technical nitrogen (see 2.2).
d. Class of technical nitrogen (see 2.3).
e. Total hydrocarbon content (THC) testing required (see 3.5).
f. Particle matter testing required (see 3.6).
g. Preservation, packing, and marking requirements (see 6.1).
h. Capacity, in cubic ft for gaseous nitrogen or "B" for bulk liquid nitrogen (see 6.2).
i. Palletization requirements (see 6.3).

7.5 Intended use. Oil tolerant nitrogen gas, class 2 is not to be used to purge or pressurize oxygen or air for human respiration systems. It shall only be used with oil-containing systems or systems that can tolerate hydrocarbon contamination, like pressuring aircraft struts. Contamination of an oxygen system with an oil-tolerant gas could result in a fire or explosion with loss of life or loss of a complete weapons system. This CID is not suitable for procurement of nitrogen for use in reactor plant, steam plant, and shipyard applications. For these applications see CID A-A-59155**.**

7.6 National stock number (NSNs). The following is a list of NSNs assigned that correspond to this CID. The list may not be indicative of all possible NSNs associated with the CID.

TABLE I. Technical nitrogen NSNs.

NSN	Type	Grade	Class	Cylinder capacity (cubic ft.(CF))
6830-00-134-3709	I	A	1	12
6830-00-192-9067	I	B	1	113
6830-00-656-1596	I	A	1	226
6830-01-028-9402	I	B	1	226
6830-01-040-3847	I	B	1	0.32
6830-01-250-2888	I	B	2	226
6830-01-265-4068	I	B	1	336
6830-01-283-8777	I	B	2	336
6830-01-386-4846	I	A	1	38
6830-01-431-0639	I	B	1	494
6830-01-441-0798	I	B	1	336
6830-01-441-0875	I	B	1	226
6830-01-441-0903	I	A	1	187
6830-01-441-2983	I	A	1	226
6830-01-508-3010	I	B	1	336
6830-01-508-3035	I	A	1	226
6830-01-508-3041	I	B	1	226
6830-01-512-8735	I	A	1	226
6830-01-512-8792	I	B	1	113
6830-01-512-8809	I	B	1	226
6830-01-512-8894	I	B	1	276
6830-01-512-8897	I	B	1	336
6830-01-512-8918	I	B	1	494
6830-01-512-8929	I	B	2	336

7.7 Valve outlet connections.

7.7.1 Cautionary note. The valve outlet connection for oil tolerant nitrogen should be different from oil free valve outlet connections to prevent the erroneous use of oil tolerant nitrogen cylinders for oil free applications. A reverse flow typically occurs during an oil tolerant operation (pressurizing oil-containing systems, e.g. aircraft struts). As a result, cylinders are contaminated with oil and can not be used for oil free applications.

7.7.2 Valve connections. The applicable standard for valve connections is CGA V-1, "Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections". Note that valve connection 590 is a limited standard for nitrogen per CGA V-1. The connections listed in table II apply.

TABLE II. Valve connection numbers.

Pressure (psi)	<3,000	>3,000
Class 1	580	680
Class 2	590	621

7.8 Subject term (key word) listing.

compressed gas
cylinder
valves

MILITARY INTERESTS:

Custodians:
Army - AV
Navy - SH
Air Force - 68

Review activities:
Army - AR, EA, MD1
Navy - AS, MC, OS, YD
DoD - DS

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - FAS

Preparing activity:
DLA - GS3

(Project No. 6830-2009-001)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at http://assist.daps.dla.mil.