[METRIC]
A-A-59105
3 September 1997
SUPERSEDING
O-N-350C
13 November 1991

COMMERCIAL ITEM DESCRIPTION

NITRIC ACID, TECHNICAL

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

1. SCOPE. This commercial item description covers technical grade nitric acid.

2. SALIENT CHARACTERISTICS

2.1 Appearance. Pour approximately 25 milliliters (mL) of the thoroughly mixed nitric acid specimen into a clean, dry test tube, allow to stand for 10 minutes, and then examine visually for sediment, suspended matter, and separated material. Nitric acid specimen shall be free from sediment, suspended matter, and separated material.

2.2 Total acid content. Weigh a small glass-stoppered Erlenmeyer flask containing approximately 15 mL of water to the nearest milligram. Rapidly add two to three mL of thoroughly mixed nitric acid specimen and weigh again. Titrate with approximately 1 Normal (N) sodium hydroxide solution which has been freshly standardized, using methyl red as the indicator. Calculate the percentage weight total acid as nitric acid as follows:

$$\text{Percentage nitric acid} = \frac{6.301\ AB}{(C - D)}$$

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent by letter to: Defense Supply Center Richmond (DSCR), ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610.

AMSC N/A FSC 6810

Where A = Milliliters of sodium hydroxide solution used
B = Normality of sodium hydroxide solution
C = Weight of stoppered flask, water, and nitric acid in grams
D = Weight of stoppered flask and water in grams.

The total acid content shall not be less than 61.0% nor greater than 68.2% by weight.

2.3 Residual acid. Evaporate approximately 50 grams (g) of the nitric acid specimen weighed to the nearest milligram in an evaporating dish on a steam bath. Repeat the evaporation twice, adding 10 mL of water each time. Cautiously dilute the residue with 100 mL cold water and transfer quantitatively to a 250 mL beaker. Titrate with approximately 0.2 N sodium hydroxide solution which has been standardized, using methyl red as the indicator. Calculate the percentage by weight residual acid as sulfuric acid as follows:

$$\text{Percentage residual acid} = \frac{4.904\ AB}{W}$$

Where A = Milliliters of sodium hydroxide solution used
B = Normality of sodium hydroxide solution
W = Weight of specimen in grams

The total residual acid, as sulfuric acid, shall not be greater than 0.5 percent by weight.

2.4 Chloride. Weigh to the nearest milligram approximately 20 g of the specimen and dilute with 300 mL of water. Heat to nearly boiling and add 10 mL of 0.5 N silver nitrate solution. Stir thoroughly and allow to settle for at least 1 hour in a dark place. Filter through a tared filter crucible, wash thoroughly with water and alcohol, and dry to constant weight at 105° to 110°C. Calculate the percentage by weight of chloride as follows:

$$\text{Percent chloride} = \frac{24.74\ (A - B)}{W}$$

Where A = Weight of crucible and precipitate in grams
B = Weight of crucible in grams
W = Weight of nitric acid specimen in grams

The total chloride content shall not be greater than 0.5 percent by weight.

3. REGULATORY REQUIREMENTS

3.1 Labeling, packaging and marking. Item shall be labeled, packed and marked in accordance with Title 49 Code of Federal Regulations (CFR), Parts 100 to 199.

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

3.3 Material safety data sheets. Material safety data sheets shall be prepared and furnished in accordance with 29 CFR 1910.1200.

4. QUALITY ASSURANCE PROVISIONS

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

4.2 Market acceptability. The item offered must have been sold to the government or commercial market.

5. PACKAGING. Preservation, packing, labeling, and marking shall be as specified in the contract or order.

6. NOTES. This section contains information of a general or explanatory nature which is helpful, but is not mandatory.

6.1 Source of documents. The Code of Federal Regulations (CFR) and the Federal Acquisition Regulations (FAR) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.

6.2 Ordering data. Acquisition documents must specify the following:

a. Title, name, and date of this CID.
b. Unit quantity required.
c. Packaging requirements.

6.3 National stock numbers (NSNs). The following list of NSNs corresponds to this CID. This list may not be indicative of all possible NSNs associated with this document.

6810-00-222-9655
6810-00-236-5670
6810-00-237-2918
6810-00-260-1205
6810-00-823-8009

6.4 Sources of supply. The following products are known to meet the requirements of this CID. Competition is not limited to these suppliers.

Company

Olin Chemicals
120 Long Ridge Road
Stamford, CT 06904
(203) 750-3000

Unocal Chemicals Division
376 South Valencia Avenue
Brea, CA 92621
(714) 577-3249

J.T. Baker
222 Red School Lane
Phillipsburg, NJ 08865
(800) 582-2537

Mallinckrodt Chemical
P.O. Box 800
Paris, KY 40362
(800) 354-2050

General Chemical
501 Nichols Road
Pittsburg, CA 94565
(510) 458-1681

MILITARY INTERESTS:

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

Reviewers
Army - MI, MD1, AR
Navy - OS

CIVIL AGENCY COORDINATING ACTIVITY:
GSA-FSS

Preparing Activity:
DLA - GS

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