

INCH-POUND

A-A-55859A

October 31, 2002

SUPERSEDING

A-A-55859

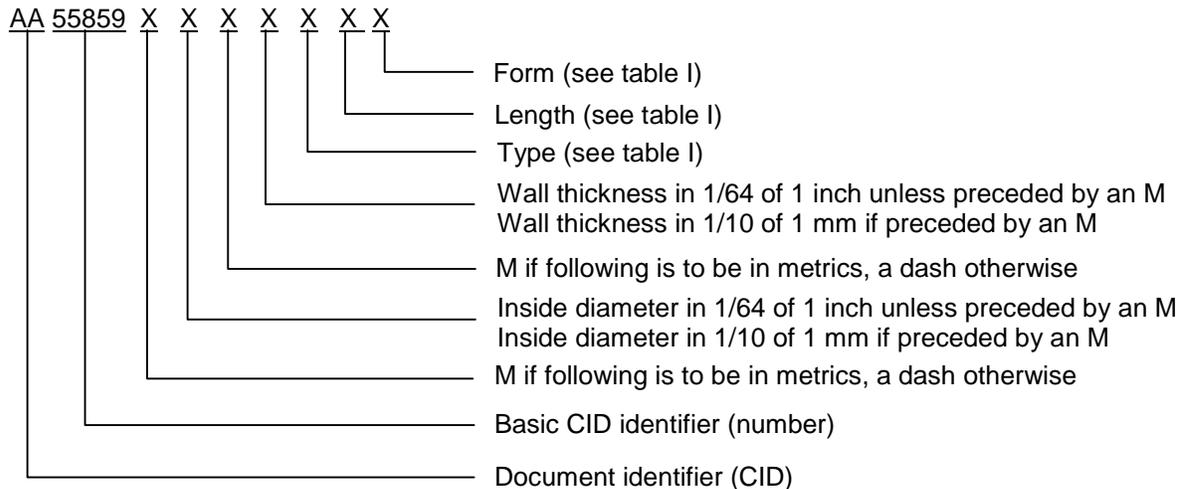
July 1, 1996

## COMMERCIAL ITEM DESCRIPTION

### TUBE, NONMETALLIC; POLYVINYL CHLORIDE (PVC) FLEXIBLE (GENERAL USE)

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 clear flexible PVC tubing intended for use either with petroleum products or with food and consumable products.
2. CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN). This CID uses a classification system which is included in the PIN as shown in the following example (see 7.1).



Beneficial comments, recommendations, additions, deletions, clarifications, and any data that may improve this document should be sent to: Defense Supply Center, Columbus, ATTN: DSCC-VAI, Post Office Box 3990, Columbus, OH 43216-5000, or telephone (614) 692-0538, or facsimile (FAX) (614) 692-6939.

AMSC N/A

FSC 4720

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE I. Type, length, and form to PIN code cross reference.

Type	PIN code
1	1
2	2
Length (feet)	PIN code
50	A
100	B
250	C
500	D
1,000	E
Form	PIN code
Coils	1
Reels	2

2.1 Types.

Type 1 for use with petroleum products.

Type 2 for use with food and consumable products.

2.2 Size and wall thickness. Plastic tubing shall be specified as described below in either inch-pound or metric units (see 7.4b):

- a. Nominal inside diameter (ID) shall be specified in 1/64 of one inch.  
Example: 5 = 5/64 of one inch (0.0781).
- b. Nominal wall thickness (WT) shall be specified in 1/64 of one inch.  
Example: 10 = 10/64 of one inch (0.1560).
- c. Metric sizes shall be in 0.1 mm increments.
- d. Tolerance on ID and WT shall be in accordance with table I.

TABLE II. ID and WT tolerances.

ID and WT Range, 1/64 inch increments	ID and WT Tolerance, ± inch
1 – 3	0.002
4 – 7	0.003
8 – 19	0.005
20 – 31	0.008
32 – 63	0.010
64 – 111 (1-47/64)	0.015
112 (1-48/64) – 159 (2-31/64)	0.031
160 (2-32/64) – 191 (2-63/64)	0.047
192 (3) – UP	0.062

3.0 SALIENT CHARACTERISTICS.

3.1 Interface and physical dimensions. Tubing supplied to this CID shall be as specified herein.

3.2 Description. Type 1 tubing provided in accordance with this CID shall be clear and flexible PVC. Type 2 tubing provided in accordance with this CID shall be colorless, clear, and flexible PVC.

3.3 Lengths. Tubing shall be furnished in standard lengths specified in table II (see 7.4c).

TABLE III. Tubing lengths.

Length			
50	feet	15.2	meters
100	feet	30.5	meters
250	feet	76.2	meters
500	feet	152.4	meters
1000	feet	304.8	meters

3.4 Form. Tubes shall be furnished in coils or reels (see 7.4c)

3.5 Flexibility. Tubing shall be capable of bending around a mandrel equal to five times the outside diameter of the tube without collapsing or restricting flow.

3.6 Physical properties. The physical properties of the tubes shall be as specified in table III when tested in accordance with test methods shown.

TABLE IV. Physical properties.

Property	Requirement		Test method (ASTM)
	Type 1	Type 2	
Brittleness temperature, °F	-35 (-37 °C)	-47 (-44 °C)	D746
Specific gravity	1.26	1.21	D792
Tensile strength, psi	1,800	2,100	D412
Elongation (minimum), percent	300	400	D412
Hardness, Durometer A, 15 seconds	57±5	65±5	D2240

3.7 Environmental consequences. Tubing shall not discolor, flake, crack or pit when tested in accordance with USP-NF Physicochemical Tests-Plastics, ASTM D1003, Standard Method of Test for Haze and Luminous Transmittance of Transparent Plastics, and ASTM E308, Standard Practice for Computing the Colors of Objects by Using the CIE System.

3.7.1 Type 1. Tubing shall be resistant to embrittlement, cracking, swelling, and shrinkage when exposed to fuel and other petroleum products. Tubing shall not have a permeation rate exceeding 100 gm/m<sup>2</sup>/24 hours when tested in accordance with SAE J1527.

3.7.2 Type 2. Tubing shall be non-toxic and free of taste and odors. Tubing shall meet FDA CFR Part 175.300, Resinous and Polymeric Coatings, ANSI/NSF 51, Food Equipment Materials, 3-A 62-01, Sanitary Standards for Hose Assemblies for Milk and Milk Products, Number 62-01, and 3-A 606-04, Accepted Practices for Supplying Air Under Pressure in Contact With Milk, Milk Products and Product Contact Surfaces, Number 604-04.

3.8 Heat resistance. All tubing manufactured and supplied in accordance with this specification shall be capable of withstanding temperatures of  $200\pm 5$  °F ( $93\pm 3$  °C) for one hour without visual signs of deterioration such as discoloring, flaking, cracking, pitting, hardening, or melting.

3.9 Identification of known leaching fluids. Each separate package of type II tubing shall contain information warning about known fluids that could interact with constituent materials of the tubing resulting in dispensing tubing material with the fluid.

3.10 Metal content. The use of hazardous materials, such as lead, is not allowed.

3.11 Materials. Materials used shall be free from defects that would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. The term "recovered materials" means materials that have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specified.

3.12 Workmanship. All tubing manufactured and supplied in accordance with this specification shall be free from blemishes and flaws that affect their serviceability or mar their appearance.

4. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered material 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 contractor/supplier must have provided this item as his commercial product for a period for at least one year.

## 6. PACKAGING.

6.1 Packaging. Preservation, packaging, and marking shall be in accordance with ASTM D3951 or as specified in the contract or order (see 7.4d).

6.2 Marking and labeling. Marking and labeling shall be commercial or as specified in the contract or order (see 7.4e).

## 7. NOTES.

7.1 PIN. The following PIN procedure is for Government purposes to buy commercial products to this CID. See section 2 for PIN example.

7.2 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of this tubing to DSCC under the Military Parts Control Advisory Group (MPCAG) evaluation program, CAGE code 58536 should be used.

7.3 Source of documents.

Federal Acquisition Regulations

- FAR 23.403 - Environment, Conservation, Occupational Safety, And Drug-Free Workplace; Use Of Recovered Materials; Policy

(The Federal Acquisitions Regulations may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402 or from the internet at <http://www.arnet.gov/far/>.)

Code of Federal Regulations (CFRs), Food and Drug Administration (FDA), Title 21

- FDA CFR Part 175.300 - Resinous and Polymeric Coatings

(The Code of Federal Regulations may be obtained from the Superintendent of Documents, U. S. Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250-7954 or from the internet at <http://www.access.gpo.gov/nara/cfr/>.)

Non-Government Publications

American National Standards Institute (ANSI)

- ANSI/NSF 51 - Food Equipment Materials.

(Application for copies should be addressed to the American National Standards Institute, 11 West 42<sup>nd</sup> Street, New York, NY 10036.)

American Society of Testing and Materials (ASTM)

- ASTM D746 - Plastics and Elastomers By Impact, Brittleness Temperature of
- ASTM D792 - Density and Specific Gravity (Relative Density) of Plastics By Displacement
- ASTM D412 - Rubber, Vulcanized and Thermoplastic Elastomers - Tension
- ASTM D2240 - Rubber Property-Durometer Hardness
- ASTM D1003 - Standard Method of Test for Haze and Luminous Transmittance of Transparent Plastics,
- ASTM E308 - Standard Practice for Computing the Colors of Objects by Using the CIE System
- ASTM D3951 - Packaging, Commercial

(Copies of ASTM standards are available from the American Society of Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

Society of Automotive Engineers (SAE)

- SAE J1527 - Marine Fuel Hoses

(Copies of SAE standards are available from the Society of Automotive Engineers, Inc., SAE World Headquarters, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or from the internet at <http://www.sae.org/products/dlabout.htm>.)

3-A<sup>®</sup>

- 3-A 62-01 - Sanitary Standards for Hose Assemblies for Milk and Milk Products, Number 62-01
- 3-A 604-04 - Accepted Practices for Supplying Air Under Pressure in Contact With Milk, Milk Products and Product Contact Surfaces, Number 604-04

(Copies of 3-A Standards are available from 3-A Secretary, International Association of Food Industry Suppliers, 1451 Dolley Madison Boulevard, McLean, Virginia 22101-3850)

United States Pharmacopeia (USP)

- USP-NF - Physicochemical Tests-Plastics

(Copies of USP Standards are available from U.S. Pharmacopeia, 12601 Twinbrook Parkway, Rockville, MD 20852.)

7.4 Ordering data. The contract or order should specify the following:

- a. CID document number, revision and date, and CID PIN.
- b. Inside diameter (ID) and wall thickness (WT) (see 2.2).
- c. Type (if Type 1 tubing is specified, include chemical product to which tubing will be exposed), length, and form required (see 3.3 and 3.4).
- d. Level of preservation, packaging, and packing (see 6.1).
- e. Applicable marking and labeling (see 6.2).
- f. Quantity of tubing required.

7.5 Commercial products. As part of the market analysis and research effort, this CID was coordinated with the following manufacturers (MFRs) of commercial products. At the time of CID preparation and coordination, these manufacturers were known to have commercial products that would meet the requirements of this CID. (NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict procurement to only the manufacturers shown.)

TABLE V. MFR's contact information.

MFR's CAGE	MFR's contact information
61501	Saint-Gobain Performance Plastics 2664 Gilcrift Road Akron, OH 44305-4412 Telephone: (330) 798-9240 FAX: (330) 798-6968
3AR53	NEXGEN Hose Inc 925 Glengarry Dr PO Box 9 Fergus, ON N1M 2W7 Canada Telephone: (519)-787-0001 FAX: (519)-787-2226

7.6 Part number (P/N) supersession data. These CID part numbers supersede the following MFRs' P/Ns as shown. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE VI. P/N supersession data.

Dash number (see table II) AA55859	MFR's CAGE	MFR's P/N <sup>1/</sup>	MFR's CAGE	MFR's P/N <sup>1/</sup>	MFR's CAGE	MFR's P/N <sup>1/</sup>
-4-2-2A1	61501	AAB00002				
-4-2-2B1	61501	AAB02002				
-4-2-2D1	61501	AAB04002				
-4-4-2A1	61501	AAB00003				
-6-2-2A1	61501	AAB00004				
-6-4-2A1	61501	AAB00005				
-8-2-2A1	61501	AAB00006				
-8-2-2B1	61501	AAB02006				
-8-4-2A1	61501	AAB00007				
-8-4-2B1	61501	AAB02007	3AR53	100-02040102		
-8-4-2D1	61501	AAB04007				
-10-2-2A1	61501	AAB00009				
-10-4-2A1	61501	AAB00010				
-12-2-2A1	61501	AAB00011				
-12-4-2A1	61501	AAB00012				
-12-6-2A1	61501	AAB00013				
-12-8-2A1	61501	AAB00014				
-16-2-2A1	61501	AAB00016				
-16-4-2A1	61501	AAB00017				
-16-6-2A1	61501	AAB00018				
-16-8-2A1	61501	AAB00019				
-20-4-2A1	61501	AAB00022				
-20-6-2A1	61501	AAB00023				
-20-6-2B1	61501	AAB02023	3AR53	100-05080102		
-20-8-2A1	61501	AAB00024				
-24-4-2A1	61501	AAB00027				
-24-6-2A1	61501	AAB00028				
-24-8-2A1	61501	AAB00029				
-28-8-2A1	61501	AAB00034				
-32-4-2A1	61501	AAB00036				
-32-6-2A1	61501	AAB00037				
-32-8-2A1	61501	AAB00038				
-40-8-2A1	61501	AAB00046				
-44-8-2A1	61501	AAB00051				
-48-8-2A1	61501	AAB00053				
-56-8-2A1	61501	AAB00059				
-64-8-2A1	61501	AAB00062				
-64-12-2A1	61501	AAB00064				
-64-16-2A1	61501	AAB00065				
-2-2-2A1	61501	AAA00001				
-4-2-2A1	61501	AAA00002				

TABLE VI. P/N supersession data - Continued.

Dash number (see table II) AA55859	MFR's CAGE	MFR's P/N <sup>1/</sup>	MFR's CAGE	MFR's P/N <sup>1/</sup>	MFR's CAGE	MFR's P/N <sup>1/</sup>
-4-4-2A1	61501	AAA00003				
-6-2-2A1	61501	AAA00004				
-6-4-2A1	61501	AAA00005				
-8-2-2A1	61501	AAA00006				
-8-4-2A1	61501	AAA00007				
-10-2-2A1	61501	AAA00009				
-10-4-2A1	61501	AAA00010				
-12-2-2A1	61501	AAA00011				
-12-4-2A1	61501	AAA00012				
-12-6-2A1	61501	AAA00013				
-12-8-2A1	61501	AAA00014				
-16-2-2A1	61501	AAA00016				
-16-4-2A1	61501	AAA00017				
-16-6-2A1	61501	AAA00018				
-16-8-2A1	61501	AAA00019				
-20-4-2A1	61501	AAA00022				
-20-6-2A1	61501	AAA00023				
-20-8-2A1	61501	AAA00024				
-20-10-2A1	61501	AAA00025				
-24-4-2A1	61501	AAA00027				
-24-6-2A1	61501	AAA00028				
-24-8-2A1	61501	AAA00029				
-28-4-2A1	61501	AAA00032				
-28-6-2A1	61501	AAA00033				
-32-4-2A1	61501	AAA00036				
-32-6-2A1	61501	AAA00037				
-32-8-2A1	61501	AAA00038				
-32-10-2A1	61501	AAA00039				
-36-6-2A1	61501	AAA00041				
-40-6-2A1	61501	AAA00045				
-40-8-2A1	61501	AAA00046				
-40-10-2A1	61501	AAA00047				
-48-8-2A1	61501	AAA00053				
-48-10-2A1	61501	AAA00054				
-48-12-2A1	61501	AAA00055				
-48-16-2A1	61501	AAA00057				
-56-8-2A1	61501	AAA00059				
-64-8-2A1	61501	AAA00062				
-64-10-2A1	61501	AAA00063				
-6-3-1A1	61501	AAG00165				
-8-4-1A1	61501	AAG00007				
-12-4-1A1	61501	AAG00012				
-16-4-1A1	61501	AAG00017				
-20-4-1A1	61501	AAG00022				
-24-4-1A1	61501	AAG00027				
-24-8-1A1	61501	AAG00029				

TABLE VI. P/N supersession data - Continued.

Dash number (see table II) AA55859	MFR's CAGE	MFR's P/N <sup>1/</sup>	MFR's CAGE	MFR's P/N <sup>1/</sup>	MFR's CAGE	MFR's P/N <sup>1/</sup>
-28-4-1A1	61501	AAG00032				
-32-4-1A1	61501	AAG00036				
-32-8-1A1	61501	AAG00038				
-40-8-1A1	61501	AAG00046				
-48-8-1A1	61501	AAG00053				
-8-4-1D1	3AR53	115-02040500				
-12-4-1D1	3AR53	115-03050500				
-16-4-1D1	3AR53	115-04060500				
-24-4-1D1	3AR53	115-06080500				
-12-2-2B1	3AR53	100-03040102				
-12-4-2B1	3AR53	100-03050102				
-12-6-2B1	3AR53	100-03060102				
-16-4-2B1	3AR53	100-04060102				
-16-6-2B1	3AR53	100-04070102				
-16-8-2B1	3AR53	100-04080102				
-20-4-2B1	3AR53	100-05070102				
-20-8-2B1	3AR53	100-05090102				
-24-4-2B1	3AR53	100-06080102				
-24-6-2B1	3AR53	100-06090102				
-24-8-2B1	3AR53	100-06100102				
-28-4-2B1	3AR53	100-07090102				
-32-4-2B1	3AR53	100-08100102				
-32-6-2B1	3AR53	100-08110102				
-32-8-2B1	3AR53	100-08120102				
-40-4-2B1	3AR53	100-10120102				
-40-6-2B1	3AR53	100-10130102				
-40-8-2B1	3AR53	100-10140102				
-48-8-2B1	3AR53	100-12160100				
-48-12-2B1	3AR53	100-12180100				
-48-16-2B1	3AR53	100-12200100				
-56-8-2B1	3AR53	100-14180100				
-56-12-2B1	3AR53	100-14200100				
-64-8-2B1	3AR53	100-16200100				
-64-12-2B1	3AR53	100-16220100				
-64-16-2B1	3AR53	100-16240100				
-80-8-2B1	3AR53	100-20240100				
-80-12-2B1	3AR53	100-20260100				
-80-16-2B1	3AR53	100-16280100				
-96-12-2B1	3AR53	100-24300100				
-96-16-2B1	3AR53	100-24320100				
-128-16-2B1	3AR53	100-32400100				

Note: <sup>1/</sup> The manufacturer's P/N shall not be used for procurement to the requirements of this CID. At the time of preparation of this CID, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements see 6.2.

7.7 Government users. To acquire information on obtaining this tubing from the Government inventory system, contact Defense Supply Center, Columbus, ATTN: DSCC Call Center (DSCC-NAB) Post Office Box 3990, Columbus, OH 43216-5000, or telephone (614) 692-2271 or -3191.

7.8 Subject term (key word) listing.

- Chemical resistant
- Clear tubing
- Colorless tubing
- Consumable products compatible
- Food compatible
- Heat resistant
- Petroleum products resistant

7.9 Other. It is recommended that the user obtain a sample of tubing and its formulation that is to be used in contact with petroleum products and tested with the specific product to be used prior to procurement of large quantities. Fabrication of PVC tubing is tailored to resist specific chemicals, therefore end use must be known by the supplier to help ensure compatibility between the tubing and the fluid in contact with the tubing.

MILITARY INTERESTS:

Custodians:

- Army – AV
- Navy – SH
- Air Force – 99

Review activities:

- Navy – NP, AS
- Air Force – 03, 71

CIVIL AGENCY COORDINATING ACTIVITIES:

- GSA – FSS
- HEW – HSM, NIH

Preparing activity:

- DLA– CC

(Project 4720-0326)