METRIC

O-C-265C
October 30, 1991

SUPERSEDING
O-C-265B
May 4, 1978

FEDERAL SPECIFICATION

CHEMICALS, ANALYTICAL; GENERAL SPECIFICATION FOR

This specification is approved by the Commissioner of Federal Supply Service, General Services Administration, for use by all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers analytical reagent grade chemicals.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

Federal Standards:

Fed. Std. No. 123 - Marking for Shipment (Civil Agencies)
FED-STD-313 - Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis

Comments or suggestions pertaining to this specification should be addressed to: Commander, U.S. Army Chemical Research, Development and Engineering Center, ATTN: SMCCR-PET-S, Aberdeen Proving Ground, MD 21010-5423.

AMSC N/A

FSC 6810

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(Federal Government activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards and Commercial Item Descriptions from established distribution points in their agencies.)

Military Specifications:

MIL-P-15011 - Pallets, Material Handling, Wood Post Construction, 4-Way Entry

Military Standards:

MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-147 - Palletized Unit Loads

(Copies of military specifications and standards required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

Code of Federal Regulations (CFR):

49 CFR 171 to 199 - Hazardous Materials Regulations

(The Code of Federal Regulations and Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Chemical Society (ACS)

"Reagent Chemicals, American Chemical Society Specifications"

(Application for copies should be addressed to the American Chemical Society, 1155 Sixteenth Street, N.W., Washington, DC 20036.)

ASTM Standards:

D 1193 - Reagent Water

(Application for copies should be addressed to ASTM, 1916 Race Street, Philadelphia, PA 19103.)

International Civil Aviation Organization

"Technical Instructions for the Safe Transport of Dangerous Goods by Air"

(Application for copies should be addressed to the International Civil Aviation Organization, 1000 Sherbrooke Street West, Suite 400, Montreal, Quebec, Canada H3A 2R2.)

International Maritime Organization

"International Maritime Dangerous Goods Code"

(Application for copies should be addressed to the International Maritime Organization, 101-104 Piccadilly, London, WIV OAE, England.)

National Motor Freight Traffic Association, Inc., Agent

"National Motor Freight Classification"

(Application for copies should be addressed to the American Trucking Associations, Inc., Traffic Department, 1616 P Street, NW, Washington, DC 20036.)

Uniform Classification Committee, Agent

"Uniform Freight Classification"

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

United States Pharmacopeial Convention, Inc.

"The United States Pharmacopeia and The National Formulary"

(Application for copies should be addressed to the United States Pharmacopeial Convention, Inc., 12601 Twinbrook Parkway, Rockville, MD 20852.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 **Order of precedence.** In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 **ACS grade chemicals.** ACS grade chemicals shall conform to the requirements contained in Reagent Chemicals, ACS Specifications when tested as specified in 4.2.4.1.

3.2 **The United States Pharmacopeia (USP) and the National Formulary (NF) analytical reagent chemicals.** USP and NF analytical reagent chemicals shall conform to the requirements contained in the "Reagents, Indicators, and Solutions" portion of the nonmonographed section of the United States Pharmacopeia and the National Formulary when tested as specified in 4.2.4.2.

3.3 **Material Safety Data Sheets.** Material Safety Data Sheets for the chemical being acquired shall be prepared and submitted by the contractor in accordance with FED-STD-313 (see 6.3).

4. QUALITY ASSURANCE PROVISIONS

4.1 **Responsibility for inspection.** Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 **Responsibility for compliance.** All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable

practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Contractor assurance of compliance. The contractor's quality program or detailed inspection system shall provide assurance of compliance of all characteristics with the applicable specification requirements using, as a minimum, the conformance criteria specified herein.

4.1.3 Alternative inspection provisions. Alternative inspection procedures, methods, or equipment, such as statistical process control, tool control, and other types of sampling procedures may be used by the contractor when they provide, as a minimum, the level of quality assurance required by the inspection provisions specified herein. Prior to applying such alternative procedures, methods, or equipment, the contractor shall describe them in a written proposal submitted to the Government for evaluation and approval. (See 6.4.) When required, the contractor shall demonstrate that the effectiveness of each proposed alternative is equal to or better than the quality assurance provisions specified herein. In cases of dispute as to whether the contractor's proposed alternative provides equal quality assurance, the provisions of this specification shall apply. All approved alternative inspection provisions shall be specifically incorporated into the contractor's quality program or detailed inspection system, as applicable.

4.2 Quality conformance inspection.

4.2.1 Lotting. A lot shall consist of the analytical reagent chemical produced by one manufacturer, at one plant, during one shift, from the same materials, and under essentially the same manufacturing conditions provided the operation is continuous. In the event the process is a batch operation, each batch shall constitute a lot (see 6.5).

4.2.2 Sampling.

4.2.2.1 For examination of packaging. Sampling shall be conducted in accordance with table I. The sample unit shall be one filled unit pack or packing container, as applicable, ready for shipment.

TABLE I. **Sampling for examination of packaging**

Number of containers in batch or lot	Number of sample containers
2 to 25	2
26 to 150	3
151 to 1,200	5
1,201 to 35,000	8
Over 35,000	13

4.2.2.2 For test. Sampling for test shall be conducted in accordance with table II. A representative specimen of approximately 50 grams shall be removed from each sample container and placed in a suitable clean, dry container labeled to identify the lot and container from which it was taken.

TABLE II. **Sampling for test**

Number of containers in batch or lot	Number of sample containers
2 to 25	2
26 to 150	3
151 to 1,200	5
1,201 to 7,000	8
7,001 to 20,000	10
Over 20,000	20

4.2.3 Inspection procedure.

4.2.3.1 For examination of packaging. Sample unit packs and packing containers shall be examined for the characteristics listed below. Failure of any sample unit pack or packing container to conform to all characteristics shall be cause for rejection of the lot represented.

(a) Contents per container
(b) Container
(c) Container closure
(d) Container free of damage and leaks
(e) Cushioning, partitions, separators, liners, and pads, as applicable, evident and correct (when required)

(f) Marking evident, correct, and legible
(g) Palletization (when required)

4.2.3.2 For test. Approximately equal portions of all the specimens taken in 4.2.2.2 shall be thoroughly mixed to form a composited specimen of no less than 100 grams. The composited specimen shall be tested as specified in 4.2.4. Each test shall be conducted in duplicate analysis. Failure of either analysis of any test shall be cause for rejection of the lot represented.

4.2.4 Tests. Water in accordance with ASTM D 1193 and reagent grade chemicals shall be used throughout the tests. Where applicable, blank determinations shall be run and corrections applied where significant. Tests shall be conducted as follows:

4.2.4.1 ACS grade chemicals. Tests for requirements of ACS grade chemicals shall be conducted in accordance with the applicable portions of Reagent Chemicals, ACS Specifications.

4.2.4.2 USP and NF analytical reagent grade chemicals. Tests for requirements of USP and NF analytical reagent chemicals shall be conducted in accordance with the applicable tests, standards, and requirements in the "Reagents, Indicators, and Solutions" portion of the nonmonographed section of the United States Pharmacopeia and the National Formulary.

5. PACKAGING

5.1 Packaging. Packaging shall be in accordance with the applicable requirements of 49 CFR 171 to 199 and either the International Civil Aviation Organization - Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TDGA) or the International Maritime Organization - International Maritime Dangerous Goods Code (IMO-IMDGC), as applicable to the mode of transportation. The packaging shall meet the applicable packaging performance tests specified in ICAO-TDGA or IMO-IMDGC, as applicable.

5.2 Marking. Shipments for civil agencies shall be marked in accordance with Fed. Std. No. 123. Shipments for military activities shall be marked in accordance with MIL-STD-129. Unit containers shall be marked to show the following information:

(a) Name of chemical and grade
(b) Empirical formula
(c) Formula weight
(d) Manufacturer's lot number
(e) Date of manufacture
(f) Assay, analysis, or maximum limits of impurities, as applicable
(g) Quantity and unit of measure

5.2.1 Container compliance markings. Each shipping container shall be marked in accordance with 49 CFR 171 to 179 and either ICAO-TDGA or IMO-IMDGC, as applicable.

5.2.2 Hazard class label. Each shipping container and pallet load shall be labeled in accordance with 49 CFR 171 to 179 and either ICAO-TDGA or IMO-IMDGC, as applicable.

5.2.3 Proper shipping name. Each shipping container and pallet load shall be marked with the proper shipping name in accordance with 49 CFR 171 to 179 and either ICAO-TDGA or IMO-IMDGC, as applicable.

5.3 Palletization.

5.3.1 Civil agencies. When specified (see 6.2), shipping containers shall be palletized to ensure carrier acceptance and safe delivery to destination. Palletization shall be in accordance with 49 CFR 171 to 199 and Uniform Freight Classification rules or National Motor Freight Transportation rules, as applicable.

5.3.2 Military activities. When specified (see 6.2), shipping containers shall be palletized in accordance with the applicable requirements of MIL-STD-147 using a softwood pallet conforming to type IV or V of MIL-P-15011.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Analytical reagent chemicals are intended for general laboratory use. Unless otherwise specified, ACS grade chemicals should be used in preference to USP and NF analytical reagent chemicals.

6.2 Acquisition requirements. Acquisition documents must specify the following:

(a) Title, number, and date of this specification
(b) Chemical required
(c) Unit quantity required
(d) If palletization is required (see 5.3.1. and 5.3.2).

6.3 Material Safety Data Sheets. Contracting officers will identify those activities requiring copies of completed Material Safety Data Sheets prepared in accordance with FED-STD-313. The pertinent mailing addresses for submissions of data are listed in FED-STD-313.

6.4 Submission of alternative inspection provisions. Proposed alternative inspection provisions should be submitted by the contractor to the procuring contracting officer for evaluation and approval by the technical activity responsible for preparation of this specification.

6.5 Batch. A batch is defined as that quantity of material which has been manufactured by some unit chemical process or subjected to some physical mixing operation intended to make the final product substantially uniform.

6.6 Changes from previous issues. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

6.7 Subject term (key word) listing.

ACS grade
NF analytical reagent
Reagent grade
USP analytical reagent

MILITARY INTERESTS:

Custodians:

Army - EA
Air Force - 68

Review activities:

Army - AR, MD, SM
DLA - GS

User activities:

Army - MI
Navy - MS, OS, YD

CIVIL AGENCY COORDINATING ACTIVITIES:

EPA
GSA-FSS (9FTE-10)

Preparing activity:

Army - EA

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