

MIL-W-15000K(SH)
 24 July 1987
 SUPERSEDING
 MIL-W-15000J(SH)
 15 May 1987
 (See 6.6)

MILITARY SPECIFICATION

WATER-TESTING CHEMICALS, BOILER, SHIPBOARD USE

This specification is approved for use within the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the composition and quality of chemicals used in testing shipboard boiler water and feedwater.

1.2 Classification. Boiler water testing chemicals shall be of the following classes, as specified (see 6.2.1):

- Class A - Nitric acid, reagent.
- Class B - Mercuric nitrate solution.
- Class D - Phenolphthalein, powder.
- Class E - Methyl red-acid blue 5, powder (methyl purple indicator).
- Class F - Chloride indicator, powder.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

PPP-C-2020 - Chemicals, Liquid, Dry, and Paste: Packaging of.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 5523, Department of the Navy, Washington, DC 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 6810

DISTRIBUTION STATEMENT A Approved for public release; distribution unlimited

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MIL-D-3464 - Desiccants, Activated, Bagged, Packaging Use and Static Dehumidification.

STANDARDS

FEDERAL

FED-STD-313 - Material Safety Data Sheets Preparation and the Submission of.

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MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-129 - Marking for Shipment and Storage.

2.1.2 Other Government documents and publications. The following other Government documents and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

PUBLICATIONS

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NAVAL SEA SYSTEMS COMMAND (NAVSEA)

S9086-GX-STM-020 - Naval Ships' Technical Manual, Chapter 220, Volume 2, Boiler Water/Feedwater Test and Treatment.

DEPARTMENT OF LABOR (OSHA)

Code of Federal Regulations (CFR), CFR 29, Part 1910.1200 - Hazard Communication Standard.

DEPARTMENT OF TRANSPORTATION (DOT)

Code of Federal Regulations (CFR), CFR 49, Parts 100-199 - Hazardous Material Regulations.

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

(Copies of specifications, standards, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DoDISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
D 1193 - Standard Specification for Reagent Water.
(DoD adopted)

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

AMERICAN CHEMICAL SOCIETY (ACS)
Specifications - Reagent Chemicals.

(Application for copies should be addressed to Applied Publications, American Chemical Society, 1155 - 16th Street, NW, Washington, DC 20006.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which 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 specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Reagent quality. Reagents covered by this specification shall conform to all applicable specifications of the American Chemical Society (ACS). When specified in the contract or order, a certificate of compliance shall be prepared (see 6.2.2).

3.1.1 Class A, nitric acid, reagent. Nitric acid, reagent shall be a 1.0 normal (N) solution of reagent grade nitric acid in ASTM D 1193, type III reagent water. The diluted solution shall vary no more than 1 percent from 0.1 N when tested as specified in 4.3.1.

3.1.2 Class B, mercuric nitrate solution.

3.1.2.1 Composition. The mercuric nitrate solution shall be a 0.5 N solution of reagent grade mercuric nitrate in ASTM D 1193, type III reagent water. The solution shall contain the minimum amount of nitric acid necessary to dissolve the mercuric nitrate. The diluted solution shall vary no more than 5 percent from 0.025 N and shall have a minimum pH of 2.2 when tested as specified in 4.3.2.

3.1.2.2 Stability. The 0.5 N mercuric nitrate solution shall remain free of sediment and shall conform to the 0.5 N requirement after storage for 1 week when tested as specified in 4.3.2.1.

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3.1.3 Class D, phenolphthalein, powder. The phenolphthalein reagent powder shall be reagent grade phenolphthalein. When added to ethyl alcohol as specified in 4.3.3, not more than a faint trace of turbidity or insoluble matter shall remain. When added to a solution of potassium chloride as specified in 4.3.3, the solution shall change from colorless at pH 8.0 to red at pH 10.0.

* 3.1.4 Class E, methyl red-acid blue 5, powder (methyl purple indicator). The methyl purple indicator shall be a dry mixture containing the following in a number 00 gelatin capsule:

- (a) 0.055 ± 0.009 gram of colour index (CI) acid blue 5 dye.
- (b) 0.045 ± 0.007 gram of ACS reagent grade methyl red, sodium salt.

* 3.1.4.1 Other ingredients. The use of a filler is prohibited. The weight of ingredients other than those required in 3.1.4 shall not exceed 0.020 grams when determined as specified in 4.3.4.2.

* 3.1.4.2 Performance. When tested as specified in 4.3.4.3, the indicator shall change from green to purple at a pH of 4.9 ± 0.3 .

3.1.5 Class F, chloride indicator, powder.

3.1.5.1 Composition. The chloride indicator shall be a dry mixture containing the following in a number 00 gelatin capsule:

- (a) 0.250 ± 0.038 gram of reagent grade diphenylcarbazone.
- (b) 0.020 ± 0.003 gram of reagent grade crystalline bromophenol blue.

3.1.5.2 Performance. When the contents of a single capsule are subjected to the test as specified in 4.3.5.4, the quantity of 0.025 N mercuric nitrate solution used shall be 25.00 ± 0.15 milliliters (mL).

3.2 Material safety data sheet. The contracting activity shall be provided a material safety data sheet (MSDS) at the time of contract award. The MSDS shall be provided in accordance with the requirements of FED-STD-313 and 29 CFR 1910.1200, Hazard Communication. When FED-STD-313 is at variance with the CFR, 29 CFR 1910.1200 shall take precedence, modify and supplement FED-STD-313. The MSDS shall be included with each shipment of the material covered by this specification (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 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items must 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Quality conformance inspection.

4.2.1 Lot. A lot shall consist of all solutions or chemicals from one batch. In cases in which it is not practicable to define the sampling lot in this manner, the lot shall consist of all solutions or chemicals of one class for delivery at one time.

4.2.2 Sampling.

4.2.2.1 Sampling for examination of filled containers. A random sample of filled containers shall be selected from each lot in accordance with MIL-STD-105 at inspection level I, acceptable quality level (AQL) 2.5 percent defective to verify compliance with all requirements of this specification regarding fill, closure, marking, and other requirements not involving tests.

4.2.2.2 Sampling for quality conformance tests. Samples from each lot shall be selected and subjected to the tests as specified in 4.3, and shall be inspected for compliance in accordance with 4.4. Two grams of diphenylcarbazone and 1 gram of bromophenol blue used in the manufacture of the chloride indicator shall be tested with the inspection samples of the chloride indicator. One gram of acid blue 5 dye and 1 gram of methyl red, sodium salt used in the manufacture of the methyl purple indicator shall be tested with the inspection sample of the methyl purple indicator. Titration shall be conducted at room temperature 25°C. If any item in the sample fails any specified test, this shall be cause for rejection of the lot represented by the sample. Sample size shall be as follows:

<u>Class</u>	<u>Description</u>	<u>Sample per lot</u>
Class A	Nitric acid, reagent	18
Class B	Mercuric nitrate solution	18
Class D	Phenolphthalein, powder	3
Class E	Methyl red-acid ACS blue 5, powder (methyl purple indicator)	3
Class F	Chloride indicator, powder	24

4.2.3 Examination of filled containers. Each filled container in the sample selected as specified in 4.2.2.1 shall be examined to verify compliance with all requirements of this specification regarding fill, closure, marking, and other requirements not involving tests. Containers shall be examined for defects of the container and the closure, for evidence of leakage, and for

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unsatisfactory markings; each sample-filled container shall also be weighed to determine the amount of the contents. Any container in the sample having one or more defects or containing less than the required amount of chemical shall cause rejection of that container, and if the number of defective containers in any sample exceeds the acceptance number for the appropriate sampling plan in accordance with MIL-STD-105, this shall be cause for rejection of the lot.

4.2.4 Test samples. When specified in the contract or order (see 6.2.1), the samples selected in 4.2.2.2 shall be forwarded to a laboratory satisfactory to NAVSEA (see 6.4).

4.2.5 Test reports. When specified in the contract or order, test reports shall be prepared (see 6.2.2).

4.3 Test procedures.

4.3.1 Class A, nitric acid reagent. One hundred mL of the sample shall be diluted to 1 liter (L) with reagent water in accordance with type III of ASTM D 1193. The dilute solution shall be used to titrate 50 mL of 0.05 N sodium carbonate solution using methyl-purple indicator in accordance with class E of this specification. The sodium carbonate solution shall be prepared using standard reference material sodium carbonate from the National Bureau of Standards. The titration shall be stopped when the methyl-purple end point is reached. Do not boil to remove carbon dioxide. The normality shall be calculated by using the following formula:

$$N_1 = \frac{V_2 N_2}{V_1}$$

Where:

N_1 = normality of diluted nitric acid sample.

V_1 = volume in mL of diluted nitric acid sample required to reach the methyl purple end point.

N_2 = normality of standard sodium carbonate solution (0.05N).

V_2 = volume in mL of standard sodium carbonate solution (50 mL).

4.3.2 Class B, mercuric nitrate solution. Fifty mL of the sample shall be diluted to 1 L with reagent water in accordance with type III of ASTM D 1193. The dilute solution shall be used to titrate 25 mL of 0.025 N sodium chloride solution to which four drops of 0.2 N nitric acid, and five drops of chloride indicator in accordance with class F of this specification, have been added. The sodium chloride solution shall be prepared using standard reference material sodium chloride from the National Bureau of Standards. The titration shall be stopped when the color just changes from yellow to lavender. The normality of the mercuric nitrate solution shall be calculated by using the following formula:

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$$N_1 = \frac{V_2 N_2}{V_1}$$

Where:

- N_1 = normality of dilute mercuric nitrate sample.
 V_1 = volume in mL of dilute mercuric nitrate sample required to reach the chloride indicator end point.
 N_2 = normality of standard sodium chloride solution (0.025 N).
 V_2 = volume in mL of standard sodium chloride solution (25 mL).

Determine pH by means of a standard pH electrometer using the glass electrode. Report the pH value to the nearest 0.1.

4.3.2.1 Stability. A 1-quart sample of 0.5 N mercuric nitrate solution shall be allowed to stand for 1 week and shall be examined for sediment. The normality of the solution shall be checked in accordance with 4.3.2.

4.3.3 Class D, phenolphthalein powder. The phenolphthalein powder shall be tested in accordance with the ACS specification for phenolphthalein.

* 4.3.4 Class E, methyl red-acid blue 5, powder (methyl purple indicator). The methyl purple indicator shall be tested as specified in 4.3.4.1, 4.3.4.2 and 4.3.4.3.

* 4.3.4.1 Composition. Weigh a capsule on an analytical balance to the nearest 0.001 gram. Record the weight. Transfer the contents of a capsule into a clean, dry 1 L volumetric flask. (Tap capsule gently to remove contents completely.) Weigh the empty capsule on the same balance and record the weight. Add 100 mL of ACS grade 95 percent ethyl alcohol to the volumetric flask and completely dissolve the contents of the capsule. Dilute to the mark with distilled water and mix thoroughly. Transfer a 5 mL aliquot to a 100 mL volumetric flask and dilute to the mark with distilled water previously adjusted to pH 2.0 with ACS grade hydrochloric acid. Mix thoroughly. Using a Beckman Model DU spectrophotometer, or equivalent, and matched 10 millimeter (mm) silica cells, measure the absorbance of the diluted sample at wavelengths of 522 nanometers (nm) and 636 nm against a distilled water blank also adjusted to pH 2.0 with hydrochloric acid. Calculate the quantity of methyl red, sodium salt, and CI acid blue 5 dye in the capsule as follows:

Grams methyl red, sodium salt = 0.123 (absorbance at 522 nm - 0.005).
 Grams CI acid blue 5 dye = 0.204 (absorbance at 636 nm - 0.002).

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* 4.3.4.2 Other ingredients. Using the weights determined in 4.3.4.1 determine the weight of other ingredients as follows:

- (a) Calculate the weight of the capsule contents:
Grams capsule contents = grams full capsule minus grams empty capsule.
- (b) Determine the weight of the other ingredients:
Grams other ingredients = grams capsule contents minus (grams methyl red, sodium salt plus grams CI acid blue 5 dye).

* 4.3.4.3 Performance. Two drops of methyl-purple indicator shall be added to 50 mL of 0.05 N sodium carbonate and the resulting mixture shall be titrated to the methyl-purple end-point (green to purple) with 0.1 N nitric acid. The pH of the solution at the indicator end-point shall be determined by means of a standard pH electrometer using the glass electrode. Report the pH value to the nearest 0.1.

4.3.5 Class F, chloride indicator, powder. The chloride indicator shall be tested as specified in 4.3.5.1 through 4.3.5.4.

4.3.5.1 Preparation of test chloride indicator solution. Transfer the contents of a capsule into a clean dry 50-mL volumetric flask. (Tap capsule gently to remove contents completely.) Add 95-percent ethyl alcohol, stopper, and shake to thoroughly dissolve. Add 95-percent ethyl alcohol to the mark.

4.3.5.2 Diphenylcarbazone. Transfer 100 mL of chloride-free water to a 150-mL beaker. To this water, add, in the following order, 0.25 mL of the chloride indicator solution prepared as specified in 4.3.5.1, six drops of 0.2 N nitric acid, and 1.0 mL of 0.025 N mercuric nitrate. Stir and immediately measure the absorbance of the resultant solution against a water reference at 520 nm wavelength, using a spectrophotometer and matched optical 10 nm absorption cells. Calculate the quantity of diphenylcarbazone in the capsule as follows:

$$\text{Grams DPC/capsule} = 0.295 \times \text{absorbance at 520 nm.}$$

4.3.5.3 Bromophenol blue. Transfer a 1.0 mL aliquot of the chloride indicator solution prepared as specified in 4.3.5.1 to a 100-mL volumetric flask containing 25 mL ethyl alcohol. Add approximately 60 mL distilled water and 1 mL of 0.2 N nitric acid and dilute to 100 mL with distilled water. Stopper and mix thoroughly. Prepare a reference blank containing 25 mL ethyl alcohol and 1 mL of 0.2 N nitric acid diluted to 100 mL with distilled water. Stopper and mix thoroughly. Measure the absorbance of the sample solution against the reference blank at 438 wavelength using a spectrophotometer and matched optical 10 nm absorption cells. Calculate the quantity of bromophenol blue in the capsule as follows:

$$B = 0.14 A - 0.04 D$$

Where:

B = Bromophenol blue concentration, gram/capsule.

A = Absorbance at 438 nm.

D = Diphenylcarbazone concentration, gram/capsule as determined in 4.3.5.2.

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4.3.5.4 Indicator performance. Add five drops of the chloride indicator solution prepared as specified in 4.3.5.1 to 25 mL of 0.025 N sodium chloride solution containing four drops of 0.2 N nitric acid. The sodium chloride solution shall be prepared using standard reference material sodium chloride from the National Bureau of Standards. Titrate with standard 0.025 N mercuric nitrate solution until the color just changes from yellow to distinct lavender. Record the quantity of mercuric nitrate solution used.

4.4 Inspection of packaging. Sample packages and packs, and the inspection of the preservation-packaging, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition.)

5.1 Preservation-packaging. Preservation-packaging shall be level A or C as specified in 5.1.1 through 5.1.1.5.

5.1.1 Levels A and C.

5.1.1.1 Nitric acid solution (class A) shall be furnished in 1-quart, amber glass bottles in accordance with type I, class 1 of PPP-C-2020 for bottles and closures. Closures shall be plastic, continuous-thread, screw-type caps.

5.1.1.2 Phenolphthalein reagent (class D) shall be furnished in 1-ounce, round, flint glass bottles in accordance with type I, class 1 of PPP-C-2020 for bottles and closures. Closures shall be either plastic or metal, continuous-metal, screw-type.

5.1.1.3 The methyl purple indicator (class E) and the chloride indicator (class F) shall be furnished in individual number 00 gelatin capsules. Twelve capsules shall be packaged in a wide-mouth bottle or jar provided with cotton packing to prevent excessive movement of the capsules and with a plastic cap with inner seal. A bag or capsule with desiccant in accordance with type I, 1/6 unit size of MIL-D-3464 shall be placed in the bottle or jar with the cotton packing separating the desiccant from the capsules. The desiccant unit size shall be at least 1/6 unit. Caps shall be secured with a cellulose band or vinyl-chloride tape. The band or tape shall extend down on the neck of the bottle or onto the jar and slightly over the edge of the cap. Twelve such bottles shall be further packaged into a paperboard partitioned box. The box shall be closed with tape.

5.1.1.4 Four fluid ounces of mercuric nitrate solution (class B) shall be furnished in an amber glass bottle in accordance with type I, class 1 of PPP-C-2020 for bottles and closures. Closures shall be plastic, continuous-thread, screw type caps.

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5.1.1.5 Compatibility of container. The container, closure, lining, or space fillers shall not interact physically or chemically with the contents of the container so as to be altered or to alter the strength, quality, or purity of the container contents for at least 1 year from the date of shipment.

5.2 Packing. Water testing chemicals, packaged as specified in 5.1, shall be packed level A, B, or C, as specified (see 6.2.1) in accordance with PPP-C-2020, as applicable.

5.3 Marking. In addition to any special marking specified (see 6.2.1), unit, interior, and exterior containers shall be marked in accordance with MIL-STD-129 and shall include the following:

- (a) National stock number.
- (b) Name and class of item.
- (c) Manufacturer's or contractor's name, or both.
- (d) Contract number.
- (e) Quantity/net content.
- (f) Date of manufacture, month, and year.
- (g) Expiration date of 24 months from date of manufacture.
(For example, manufactured 1/76, expires 1/78.)
- (h) Note: "Mandatory shelf life material. Discard material after expiration date." (Expiration date of 36 months shall be shown for class F materials.) (There are no expiration dates for classes D and E materials.)
- (i) Lot or batch number.

5.3.1 Special marking.

5.3.1.1 Bottles.

5.3.1.1.1 Nitric acid solution. Each bottle shall be labeled as follows: "Nitric Acid Solution (1.0N) class A. For making standard test solution to be used for testing boiler water and feedwater."

5.3.1.1.2 Mercuric nitrate solution. Each bottle shall be labeled as follows: "Mercuric Nitrate Solution (0.5N) class B. For making standard test solution to be used for testing boiler water and feedwater."

5.3.1.1.3 Phenolphthalein powder. Each bottle shall be labeled as follows: "Phenolphthalein, ACS grade, class D."

5.3.1.1.4 Methyl purple indicator. Each bottle shall be labeled as follows: "Methyl Purple Indicator, class E, U.S. Patent No. 2416619 (royalty free license in the U.S. Government). Dissolve contents of capsule completely in 100 mL of distillate or demineralized water in the methyl purple dropping bottle. Use in the phosphate neutrality, alkalinity or emergency pH tests described in the Naval Ships' Technical Manual, S9086-GX-STM-020, Chapter 220. Do not use the prepared indicator solution after 6 months from the date of preparation."

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5.3.1.1.5 Chloride indicator. Each bottle shall be labeled as follows: "Chloride Indicator, U.S. Patent No. 2784064 (royalty free license in the U.S. Government. Empty contents of one capsule into the chloride indicator dropping bottle). Add 50 mL of ACS grade ethyl alcohol (6810-00-264-6507) or ACS grade isopropyl alcohol (6810-00-227-0410). Stopper and shake. Use in the chloride tests described in the Naval Ships' Technical Manual, S9086-GX-STM-020, Chapter 220, Boiler Water/Feedwater Test and Treatment. Do not use the prepared indicator solution after 9 months from the date of expiration."

5.3.2 Hazardous chemicals. Each package unit of hazardous chemicals shall have affixed thereto warning labels in accordance with Code of Federal Regulations, Title 49, Parts 100-199, 29 CFR 1910.1200, or appropriate Department of Defense instructions, which shall take precedence.

6. NOTES

6.1 Intended use. The reagent chemicals covered by this specification are intended to be used in testing shipboard boiler water and feedwater.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Class or classes of chemicals required (see 1.2).
- (c) Test samples required (see 4.2.4).
- (d) Level of packing required (see 5.2).
- (e) Special marking required (see 5.3).

6.2.2 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DoD FAR Supplement, Part 27, Sub-Part 27.410-6 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraphs.

<u>Paragraph no.</u>	<u>Data requirement title</u>	<u>Applicable DID no.</u>	<u>Option</u>
3.1	Certificate of compliance	DI-E-2121	---
4.2.5	Test reports	DI-T-2072	---

(Data item descriptions related to this specification and identified in section 6 will be approved and listed as such in DoD 5010.12-L., AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

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6.2.2.1 The data requirements of 6.2.2 and any task in sections 3, 4, or 5 of the specification required to be performed to meet a data requirement may be waived by the contracting/acquisition activity upon certification by the offeror that identical data were submitted by the offeror and accepted by the Government under a previous contract for identical item acquired to this specification. This does not apply to specific data which may be required for each contract, regardless of whether an identical item has been supplied previously (for example, test reports).

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 Government mailing addresses for submission of data are listed in appendix B of FED-STD-313. In order to obtain the MSDS, FAR clause 52.223-3 must be in the contract.

6.4 Laboratory. Test samples shall be forwarded to the Officer In Charge, Annapolis Laboratory, Naval Ship Research and Development Center (Code 2833), Annapolis, MD 21402.

6.5 Subject term (key word) listing.

Chloride indicator
Desiccants
Methyl purple indicator
Mercuric nitrate solution
Nitric acid reagent
Phenolphthalein
Reagents
Water-testing chemicals

6.6 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Preparing activity:
Navy - SH
(Project 6810-N006)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-W-1500K(SH)		2. DOCUMENT TITLE WATER-TESTING CHEMICALS, BOILER, SHIPBOARD USE	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)