

MIL-I-85370(AS)  
3 FEBRUARY 1987

## MILITARY SPECIFICATION

### IRON OXIDE, (MONOHYDRATE) YELLOW

This specification is approved for use within the Naval Air 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 manufacture and acceptance of one type of yellow iron oxide (see 6.1).

#### 2. APPLICABLE DOCUMENTS

##### 2.1 Government documents.

**2.1.1 Standards.** The following 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.

#### STANDARDS

##### Federal

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

##### Military

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

MIL-STD-129                      Marking for Shipment and Storage

(Copies of standards 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 the documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

##### American Society for Testing and Materials

D 34                                  Chemical Analysis of White Pigments

D 50                                  Chemical Analysis of Yellow, Orange, Red, and Brown Pigments Containing Iron and Manganese

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, Systems Engineering and Standardization Department (SESD) Code 93, Lakehurst, NJ 08733, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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- D 185 Coarse Particles in Pigments, Pastes and Paints
- D 200 Hygroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments
- D 768 Yellow Iron Oxide Hydrated

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

## NATIONAL MOTOR FREIGHT ASSOCIATION, INC., AGENT

## National Motor Freight Classification

(Application for copies should be addressed to American Trucking Associations, Attn: Traffic Department, 1616 P Street, Washington D.C. 20036).

## UNIFORM CLASSIFICATION COMMITTEE, AGENT

## Uniform Freight Classification

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

(Nongovernment standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available 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, 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 Chemical and physical properties.** Chemical and physical properties of this material shall be as specified in table I.

TABLE I. Chemical and physical properties.

Property	Min	Max
Iron content, % wt. as $\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}$	97.0	—
Iron content, % wt. as $\text{Fe}_2\text{O}_3$	86	96
Moisture, % wt.	—	1.0
Ph	5.5	7.5
% Retained on 325 sieve	—	0.1
Water solubles, % wt.	—	1.0

**3.2 Material safety data sheets.** The contractor shall prepare and make available material safety sheets in accordance with FED-STD-313 as specified in the contract (see 6.4).

**3.3 Workmanship.** The material furnished under this specification shall be a uniform product free from foreign materials.

#### 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.

**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 Inspection conditions.** Unless otherwise specified (see 6.2.1), all inspections shall be performed under the following conditions:

Temperature	18° to 35°C (65° to 95°F)
Relative humidity	Room ambient to 50 percent relative, maximum
Vibration	No requirement
Altitude	Normal ground

**4.3 Quality conformance inspection.** Quality conformance inspection shall consist of the tests specified in table II.

TABLE II. Quality conformance test methods.

Property	ASTM No.
Iron content	D 50
Moisture	D 280, Method A
Ph	D 768
% Retained on 325 sieve	D 185
Water soluble	D 34

**4.3.1 Inspection lot.** Unless otherwise specified in the contract (see 6.2), a lot shall consist of all material manufactured in one continuous production run or in one batch, under essentially identical conditions, from the same raw materials, and to be offered for acceptance at one time. Several batches, manufactured from the same raw materials, may be blended to form a uniform larger batch which shall then constitute a lot for inspection purposes.

**4.3.2 Sampling.** Unless otherwise specified, sampling and acceptance criteria shall be in accordance with MIL-STD-105, inspection level I. The sample unit shall be one unit package or container of material. Each sample shall consist of sufficient material to perform the quality conformance tests as specified in table II.

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**5. PACKAGING**

**5.1 Packaging and packing.** Unless otherwise specified in the contract (see 6.2.1), packaging and packing shall be commercial.

**5.1.1 Commercial.** Unless otherwise specified in the contract (see 6.2.1), packaging and packing shall be in accordance with standard commercial practice applicable to the type of material. The packaging and packing shall be of such construction and materials that the contents will be adequately protected against loss or contamination. Container size shall be as specified in the contract (see 6.2). Containers shall conform to Uniform Freight Classification, National Motor Freight Classification or to rules of other carriers applicable to the mode of transportation.

**5.2 Marking.** In addition to any special marking required by the contract (see 6.2), each container shall be marked in accordance with MIL-STD-129. Marking shall include, but not be limited to the following information:

- a. Title, number and date of this specification
- b. Manufacturer's name and location
- c. Material trade name
- d. Net weight
- e. Lot number, batch number(s) and date of manufacture
- f. Storage conditions
- g. Contract number

**6. NOTES**

**6.1 Intended use.** The material specified herein is intended for use as a burning rate modifier in composite rocket propellants.

**6.2 Ordering data.**

**6.2.1 Acquisition requirements.** Acquisition documents should specify the following:

- a. Title, number and date of this specification
- b. Quantity required
- c. Date and place of delivery
- d. Inspection conditions, if other than as specified (see 4.2)
- e. Lot size, if other than as specified
- f. Packaging requirements, if other than as specified (see 5.1)
- g. Size of container required
- h. Any special marking required

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**6.3 Possible source of supply.** A product that has met the requirements of this specification in past procurement is MAPICO 1000, manufactured by Cities Service Co., Akron, Ohio. This information is for the convenience of the procuring activity and is not to be construed as a waiver of any requirement of this specification nor as any limitation of additional potential sources of supply.

**6.4 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.

**6.5 Subject term (key word) listing.**

Iron oxide  
Material safety data sheet

Preparing activity:  
Navy -AS

(Project 6810-NB57)

**INSTRUCTIONS:** In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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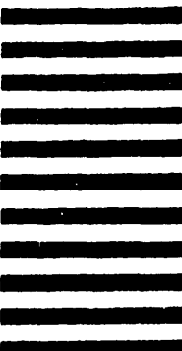
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## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-I-85370(AS)		2. DOCUMENT TITLE IRON OXIDE, (MONOHYDRATED) YELLOW	
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		7. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	

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