MILITARY STANDARD

IDENTIFICATION METHODS FOR BULK PETROLEUM PRODUCTS SYSTEMS INCLUDING HYDROCARBON MISSILE FUELS

TO ALL HOLDERS OF MIL-STD-161F:

1. THE FOLLOWING PAGE OF MIL-STD-161F HAS BEEN REVISED AND SUPERSEDES THE PAGE LISTED:

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
3	1 AUGUST 1985	3	1 August 1977
4	1 AUGUST 1977	(REPRINTED WITHOUT CHANGE)	

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-161F will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the Military Standard is completely revised or cancelled.

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(Project 91GP-0114)

FSC 91GP

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4.1.1. Application of Markings. Markings, which include titles, bands, and arrows, will be applied by painting and stenciling or, if desired, by means of decals, elastomeric film or reflectorized sheeting. If decals, film, or sheeting are used, material shall conform to specification MIL-M-43719A or L-S-300 as applicable. In addition to the locations indicated in the subsequent paragraphs, markings shall be applied at all receiving connections; at all dispensing outlets; at all tank fill and discharge lines; at locations where line connections are made to manifolds; and at any other location necessary to assure ready identification of the product in the system. For single-product, isolated systems, only the line coming into a manifold must be marked. For multiproduct systems, product identification markings must be placed on the inlet multiproduct line and all manifold outlet lines.

4.2. Color Specification. The colors assigned in the standard shall conform in hue and chroma to the requirements identified by numbers specified in Federal Standard No. 595.

4.3. Employment of Colors.

4.3.1. Warning Color. The color Yellow No. 13655 is assigned as a primary warning for all flammable materials in accordance with the provisions of the basic color code, MIL-STD-101. Petroleum products and hydrocarbon missile fuels are considered falling within this classification of materials.

4.3.2. Use of Black and White Colors. The colors Black No. 17038 and White Gloss No. 17875 are assigned, WITHOUT SIGNIFICANT MEANING, for general use as indicated in this standard.

4.3.3. Color Limitations. UNDER NO CIRCUMSTANCES will colors other than yellow for Warning and Black and White for Identification be assigned to petroleum products and hydrocarbon missile fuels. Special attention is invited to the color RED which is assigned exclusively for the use of fire protection materials and equipment. All other piping systems not carrying products within the scope of this standard will employ the warning colors assigned in MIL-STD-101 to the particular material.

4.3.3.1. Color of Piping Systems and Storage Systems. It is not the intent of this Standard to imply that the colors mentioned herein be used for coatings of piping or storage systems. The overall color shall be in accordance with departmental instructions. MIL-STD-140, Table II, entitled "Paint Factors," lists various paint colors and indicates their comparative efficiency in contribution to reduction in product breathing losses.

4.4. Use of Color Bands. The use of color bands on all dangerous piping systems as established in MIL-STD-101 has been recommended as an aid to color-blind personnel since the use of bands will indicate that hazards are present. Identifying titles and bands on pipelines must be clearly legible at all times and should be frequently inspected to insure legibility through cleanliness of the marked area.

4.5. NATO Symbol Marking. Piping systems handling products for which a NATO Symbol has been established, and are located in an area subject to servicing ground, sea, or air equipment of NATO Countries will, in addition to the NATO symbol, include the appropriate U.S. Military Symbol (if established) as a part of the title in accordance with 5.1.1. Should the

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product handled become off-specification in any respect in excess of the NATO allowable deterioration limits before use, a line of a color contrasting with the NATO symbol and the background color will be drawn diagonally across and beyond the rectangle enclosing the NATO symbol. The thickness of this line will be such that it is clearly visible and the NATO symbol is then to be considered cancelled and the product may, if desired, be considered as an emergency substitute to the original product and will be used only under technical advice. The line or system will be promptly re-marked when the deteriorated product is replaced.

5. DETAILED REQUIREMENTS OR STATEMENTS

5.1. Liquid Petroleum and Hydrocarbon Missile Fuels Facilities System Identification.

5.1.1 Titles. Exact identification on rigid piping systems and above ground fixed storage tanks is mandatory. If identification of tank trucks, semi-trailers or tank cars is desired or specified by departmental directives, the system described herein may be used.

5.1.1.1. Application of Title. Titles will be applied in such a manner as to be clearly visible from operating positions. The use of stencils with standard size markings specified in Table I is recommended. The black background will have a minimum border three-fourths-inch wider than the lettered area. For piping smaller than three inches in diameter, metal flags or signs securely fastened to the pipe may be used with the appropriate title and products group band(s) lettered thereon.

5.1.2. Color of NATO Symbol Marking. The appropriate NATO symbol and the broken line enclosure shall be of yellow color.

5.1.3. Product Group Band(s). The yellow band(s) will be separated and distinguish the various groups of products. Except for lubricating oil lines, 5.1.4, and multiproduct lines, 5.1.5, petroleum products other than Thermally stable jet fuels and missile fuels are identified with one or more narrow bands. Thermally stable jet fuels are identified with a wide band, twice the width of a narrow band, followed by a narrow band, followed by another wide band. Hydrocarbon missile fuels are identified with one wide band, twice the width of the narrow band, followed by one narrow band. See Table II. It must be re-emphasized that the title is the principal identifying feature and the band(s) is not to be relied upon to identify a particular product.

5.1.4. Lubricating Oil Lines. Because of the infrequency of its use, bands have not been assigned to lubricating oils. A flag or sign may be employed as illustrated in figure 6. Each flag or sign shall have a yellow border of a minimum of three-fourths inch in width.

5.1.5. Multiproduct Lines. When a single pipeline is used for transporting more than one product, a flag or sign identifying the product currently in transit may be used in lieu of or as a supplement to the wide yellow identification band and nomenclature shown in figure 9. Identification of the product will be made at the time of transfer. The yellow band in these instances will be a minimum of thirty-six inches in width.

☆U.S. GOVERNMENT PRINTING OFFICE: 1985 — 505-038/23892

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