



NFPA/T2.13.4-1994 (R2012)

First edition
30 August 1994

AN INDUSTRY STANDARD FOR FLUID POWER

**Information report – Recommendations for
conservation, maintenance, and
disposal of hydraulic fluids**

Adopted by the
**Department
Of
Defense**

See acceptance notice on
inside back cover

Descriptors: None

published by

NATIONAL FLUID POWER ASSOCIATION, INC.

3333 N. Mayfair Road / Milwaukee, WI 53222-3219 USA
PHONE: +1 414 778 3344 / FAX: +1 414 778 3361 / E-mail: nfpa@nfpa.com

Copyright 1994 by the
NATIONAL FLUID POWER ASSOCIATION
Printed in the USA

All standards, recommended practices, information reports, and bibliographies (collectively, "NFPA Documents") are advisory only. Use thereof by anyone for any purpose is entirely voluntary and in any event without risk of any nature to the National Fluid Power Association (NFPA), its officers, directors or authors of such work. There is no agreement by or between anyone to adhere to any NFPA Document. In formulating and approving NFPA Documents, NFPA and/or its councils and committees will not investigate or consider citations, references or patents which may or may not apply to such subject matter since prospective users of such NFPA Documents alone are responsible for establishing necessary safeguards in connection with utilization of such matters, including technical data, proprietary rights or patentable materials.

The information and data contained in NFPA Documents has been obtained from sources believed to be reliable. However, it should not be assumed that all acceptable or applicable sources of information, procedures, methods or techniques are contained in NFPA Documents, or that additional measures may not be required under certain circumstances or conditions.

NFPA Documents and/or policies and procedures are subject to periodic review and may be changed without notice. NFPA Documents are only current as of their publication date. NFPA Documents, after publication, may be revised or withdrawn at any time and current information on all NFPA Documents may be received by calling or writing NFPA. Additionally, the various codes and regulations referenced in NFPA Documents may be amended from time to time and it should not be assumed that the versions referenced therein are the most current versions of such codes and regulations. Please consult the appropriate regulatory authorities for the most up-to-date versions.

NFPA Documents imply a consensus of those substantially concerned with their scope and provisions and are intended as a guide to aid the manufacturer, the consumer and the general public. The publication of NFPA Documents does not in any respect preclude anyone, whether they have participated in the development of or approved such NFPA Documents or not, from manufacturing, marketing, purchasing, or using of products, processes or procedures not conforming to the NFPA Documents. NFPA Documents do not constitute or indicate a warranty of any sort, express or implied, including but not limited to a warranty or representation as to quality, merchantability or fitness for a particular use or purpose.

Participation by federal agency representative(s) or person(s) affiliated with the industry is not to be interpreted as government or industry endorsement of an NFPA Document(s).

NOTICE

NFPA Documents do not express or imply any judgment, certification or endorsement of or with respect to, the safety, design or performance of any product, component, or its use.

NFPA does not examine, investigate, test, recommend, or certify the design, use or safety of any product or component, even those which may incorporate one or more NFPA Documents. NFPA Documents therefore have no application to and do not express or imply any recommendation, representation or warranty, with respect to the safety, design, use, performance, or functional interchangeability of components or products which incorporate NFPA Documents.

This publication may not, in whole or in part, be reproduced, copied or disseminated, entered into or stored in a computer database or retrieval system, or otherwise utilized without the prior written permission of NFPA.

This is a preview of "NFPA/T2.13.4-1994 (R...)". [Click here to purchase the full version from the ANSI store.](#)

Foreword

This Foreword is not part of *Information report — Recommendations for conservation, maintenance and disposal of hydraulic fluids*, NFPA/T2.13.4-1994.

The project was initiated at the 3 May 1977 meeting of the Fluids Technology Committee, T2.13. Mr. Tiffany (American Petroleum Institute) prepared a TSP which was discussed and approved at the 27 September 1977 meeting of T2.13.

The NFPA Technical Board approved the TSP as amended at their 2 November 1977 meeting.

At the 20 September 1979 meeting of T2.13 Draft No. 1 was reviewed and work began on Draft No. 2. The drafts were discussed at subsequent meetings.

At the 14 March 1983 T2.13 meeting it was reported that Mr. Tiffany had retired. Marsha Lester (Edwin Cooper Co.) agreed to serve as project chairperson. Ms. Lester served as project chairperson until 20 March 1986 when the committee was informed that she had resigned.

At the 2 October 1986 meeting of T2.13, George Kovitch (Edwin Cooper Co.) accepted chairmanship of this project. He distributed a document entitled "Recommendations for Conservation and Disposal of Hydraulic Fluids" which would serve as a guideline for this project.

The project was discussed at the meetings held 16 June 1988, 16 February 1989, 17 August 1989, and again at the 16 November 1989 meeting of T2.13. At the 16 November meeting it was recommended that the document be submitted for General Review.

NFPA's Technical Staff prepared the document for General Review on 15 December 1989.

At the 21 August 1990 meeting of T2.13, the committee reviewed the comments received from the General Review. Many of the suggestions were incorporated into a revised document. This revised document was distributed with the T2.13 minutes of 9 April 1992.

NFPA's Technical Staff prepared the document for Second General Review on 2 June 1992. The Second General Review closed with numerous comments which, when appropriate, were incorporated into the document.

Before the August 1992 meetings, George Kovitch informed Headquarters that he could no longer chair this project. At the 20 August 1992 Fluids Technology Committee meeting, T2.13, Michelle Cervenka (Ethyl Petroleum Additives Div.) became the Project Chairperson.

Michelle Cervenka made changes to the document according to the comments received from the Second General Review and Headquarters prepared the document for the Third General Review on 4 February 1993.

The Third General Review closed with comments from six companies. These comments were discussed at the 25 March 1993 T2.13 meeting. Project Chairperson Cervenka incorporated the appropriate comments into the document. At the 20 May 1993 Technical

Board meeting the document was approved for Balloting upon approval from all the commentators. Only approval comments were received and the document was sent out for Balloting on 23 December 1993.

Balloting closed with two approval ballots with comments and one negative ballot. The two approval comments were incorporated into the document. The negative ballot was mainly editorial changes that were also incorporated into the document. The negative commentator changed his Ballot to approval. At the 8 February 1994 T2.13 meeting it was agreed upon to send the updated document to the Technical Board for final approval. On 14 April 1994 the Technical Board granted final approval for this document.

Project Group Members who developed this standard:

Michelle Cervenka *

Project Chairperson
Ethyl Petroleum Additives Div.

George Kovitch

Project Chairman (1986 – 1992)
Edwin Cooper Co.

Paul Schacht

Fluids Technology Committee Chairman
Robert Bosch Fluid Power

Thelma Marougy

Fluids Technology Committee Vice Chairman
Vickers, Inc./TRINOVA

Paul Michael

Fluids Technology Committee Secretary
Benz Oil

Gregory Pesch

Technical Auditor
Hanna Corp.

Linda E. Gasso

Technical Coordinator
National Fluid Power Association

Shirley C. Seal

Manager of Standards Development —
Industry/National
National Fluid Power Association

Joe Ivaska

Tower Oil & Technology Co.

Walt Lewis **

Union Carbide Corp.

Vic Cheng

Mobil R/D Corp.

Introduction

Pollution control and conservation of our natural resources have become not just conversation, but also necessary and important goals of Government, industry and our general society. Few, if any, will disagree with the seriousness of the situation, which in some areas is critical. Human nature and our "free enterprise" system dictate that we can't all agree on the procedures for achieving these desired goals. However, it behooves each of us to act positively, within sound economic structures, to seek environmental improvements through changes we can control and influence. Minimizing waste oil generation through improved control of industrial fluids within a plant is certainly a practical beginning point. If the job is handled properly, these industrial fluids can, in many cases, be reclaimed "on-site" for reuse either in original type service or some other indicated service, such as a fuel oil supplement.

Any waste is an economic loss. Under current practices, most lubricants become waste and represent a loss. If, instead, the waste fluids were to be converted to useful energy or reclaimed as a useful lubricant, then the net loss would be minimized and might even become a net gain.

Waste fluid control, to be effective, requires understanding and cooperation between the oil company, as the supplier, and the users of petroleum products. In addition, machinery manufacturers must share this commitment and assume their responsibility through cooperation with supplier and user. With each carrying his share of this load, our common goals can be met within current economic, safety, and governmental standards.

Information report — Recommendations for conservation, maintenance, and disposal of hydraulic fluids

1 Scope

1.1 This information report includes and establishes recommendations for reclamation, recycling, and disposal of hydraulic fluids.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this document. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this document are encouraged to investigate the possibility of applying the most recent editions of the documents indicated below. NFPA maintains registers of currently valid NFPA standards.

ANSI/B93.2-1986, *Fluid power systems and products — Glossary*.

ANSI/(NFPA/JIC)T2.24.1-1991, *Hydraulic fluid power — Systems standard for industrial machinery*.

ASTM D-92-1990, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*.

3 Definitions

For definition of terms used, see ANSI/B93.2.

4 Conservation of hydraulic fluids

4.1 Reducing used hydraulic oil generation

Reducing used hydraulic oil generation requires overall improvement of “in-plant” practices including coordinated controls on product selection, purchasing, receiving, storing, dispensing, application, preventive maintenance, reclamation, and appropriate reuse or disposal.

Personnel must be thoroughly familiar with the plant operations, hydraulic fluid properties required for various operations, quality control, source of used hydraulic fluid, and reclamation or disposal procedures to accomplish this broad goal. Understanding of these will aid in efficient use and maximum service life of the hydraulic fluid.

The generation of used hydraulic fluid can be reduced by first identifying the source, and then following with programs to extend service life, and finally, installing suitable reclamation or disposal equipment.

Based on the 2006-2007 edition of *Lubes'n'Greases Magazine's Lubricants Industry Sourcebook*, the U.S. market for automotive transmission and hydraulic fluids is in excess of 300 million gallons per year. A 2006 publication issued by the United States Department of Energy reported that in 1995, more than 12% of these lubricants were re-refined or recycled. The balance ends up as some sort of pollutant. Much of it is disposed of prematurely due to contamination resulting from inadequate “in-plant” control.