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**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

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## 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.