NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 5-81

Subj: Literature Concerning Hazardous Cargoes

1. PURPOSE. To provide references to information on hazardous materials.

2. DIRECTIVES AFFECTED. Navigation and Vessel Inspection Circular No. 1-79 is canceled.

3. DISCUSSION. Enclosure (1) of this Circular is a list of suggested references which contain data on the physical properties (such as vapor pressure, boiling point and flash point), toxicological effects, fire fighting techniques, safe handling procedures, etc. for most hazardous cargoes subject to regulation.

4. ACTION. Coast Guard units and recipients in industry who are involved with the shipment of hazardous cargoes are encouraged to use enclosure (1) for guidance.

End: (1) List of Suggested References
(2) Chemical Hazards Response Information System, Procedures for Obtaining Manuals
(3) Emergency Response Guidebook, distributors' addresses

Non-Standard Distribution:

Ce: Baltimore (75); San Francisco, Mobile, Pittsburgh, Providence, Norfolk (50); Galveston (30); Cleveland, Portland OR, Sturgeon Bay (25); San Diego, Savannah, Buffalo, Corpus Christi (20); Tampa, Valdez, Milwaukee, Louisville, Detroit, Toledo, Nashville, Anchorage (15); Portland ME, Duluth, Charleston, Huntinton, Minneapolis-St. Paul (Dubque), Guam, San Juan (10); Juneau, Cincinnati, Memphis, Wilmington, Miami, Paducah, Albany (5) extra

Cm: New Orleans (250); New York (200); Seattle (100); Houston (50); Terminal Is. (LA-LB), Philadelphia (40) extra

Em: New London, Houma, (30); Ludington (8) extra

En: Ketchikan, Kenai, Kodiak, Lake Charles (5) extra
List of Suggested References


2. Chemical Hazards Response Information System (CHRIS), Hazardous Chemical Data, Commandant Instruction M16465 (old CG-446), Manuals 1-4, U.S. Coast Guard. These publications may be ordered through the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. These volumes list physical data, fire and health hazards, and recommended procedures in case of a spill or accident for most hazardous chemicals. See Enclosure (2) to this Circular for detailed information.


4. CG-329, Fire Fighting Manual for Tank Vessels, U.S. Coast Guard, 1974. This manual is intended to help seagoing personnel to familiarize themselves with the nature and hazards of fire on board vessels.

5. CG-174, A Manual for the Safe Handling of Flammable and Combustible Liquids and Other Hazardous Products, U.S. Coast Guard, 1976. This manual is intended as a basic guide for those persons involved in the transport or transfer of flammable or combustible liquids.

6. Hazardous Materials, 1980 Emergency Response Guidebook, Materials Transportation Bureau, U.S. Department of Transportation. This guide, developed for use by firefighters, police and other emergency services, describes initial actions and procedures to be followed in response to an incident involving hazardous materials. See Enclosure (3) to this Circular for distributors addresses.


8. Summary of NIOSH Recommendations for Occupational Health Standards, October 1980, NIOSH, Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226. A pamphlet containing the summary of the major environmental and medical recommendations found in the criteria documents published by NIOSH.

9. TLVs, Threshold Limit Valves for Chemical Substances and Physical Agents in the Workroom Environment with Intended Changes, published annually (August) by The American Conference of Governmental Industrial Hygienists, P.O. Box 1937, Cincinnati, OH 45201. This publication lists adopted and proposed Threshold Limit Values (TLVs) of chemical substances and physical agents.
10. Documentation of the Threshold Limit Valves, Fourth Edition, 1980. American Conference of Governmental Industrial Hygenists, Inc. This companion piece to the TLV booklet, contains the rationale for both the adopted and proposed TLVs.


16. National Fire Codes, volumes 1-16, published annually in March, National Fire Protection Association, Boston, MA, contains nationally recognized codes and standards for handling, storing and testing various materials such as ammonium nitrate, explosives, grain and plastic film.


18. Transport of Dangerous Goods, United States Committee of Experts on the Transport of Dangerous Goods (ST/5G/AC.10/1/Rev. 1), revised edition 1977. This publication contains a list of the most commonly carried hazardous dangerous goods with the UN Number, classification, packaging, labeling and consignment procedures for packaged hazardous materials.

York, tenth edition, 1981, contains shipping, safety and trademark information for a large number
of chemicals.

book with fairly comprehensive chemical, physical, toxicity, and therapeutic information.

22. **Dangerous Properties of Industrial Materials** by N. Irving Sax, Reinhold Publishing Corporation,
New York, fifth edition, 1979, contains hazard analysis information for more than 16,000 common
industrial and laboratory materials.

23. **Patty's Industrial Hygiene and Toxicology**, John Wiley and Sons, New York, NY, third edition,
contains information of a practical nature regarding hygiene and toxicology for chemical elements
and compounds used in industry.

24. **Handbook of Chemistry and Physics** is published annually by CRC Press, Cleveland, OH 44128.
This is a general reference book having fairly comprehensive chemical and physical data.

Rutherford, NJ 07073. This book covers more than 130 common and uncommon gases. It gives
physical constants, thermodynamic properties, vapor pressure curves, and infrared spectra. The
gases are identified by both their common and Chemical Abstracts names.

Gas Products. Describes symptoms of exposures to all classes of gases and first aid measures.

08528. The guide lists the names and telephone numbers of manufacturers for most industrial
chemicals. This guide is useful if it is necessary to contact a manufacturer for data about a
particular product.

28. **Farm Chemicals Handbook**, published annually in January, Meister Publishing Co., Willoughby,
OH 44094. This buyer's guide lists information on plant foods, pesticides, fertilizers, and the
manufacturers of these chemicals.

29. **Hygienic Guide Series**, American Industrial Hygiene Association, 475 Wolf Ledges Parkway,
Akron, OH 44311. These data sheets provide information concerning hygienic standards,
properties, industrial hygiene practice and specific first aid and medical procedures for many
common industrial chemicals.

30. **Chemical Hazard Fact Finder**, National Safety Council, 425 N. Michigan Avenue, Chicago, IL
60611, lists the flash point, severity and types of hazards, precautions, first aid, health hazards,
flammability, reactivity, oral toxicity, action on skin, and references for many industrial chemicals.

31. **Data Sheets**, National Safety Council. Of the many data sheets there are almost 100 concerned
with chemicals and chemical related interest. The data sheets on individual chemicals contain
information on properties, uses, shipping and storage, personal protective equipment, ventilation
and more.
32. **A Handbook of Industry Terms**, The Soap and Detergent Association, second edition, 198L. This comprehensive dictionary of over 200 terms is designed for the layman. The definitions are non-technical, or at times semi-technical.

33. **Encyclopedia for the User of Petroleum Products**, Lubetext D400, Exxon Company, USA, P.O. Box 2180, Houston, TX 7700L. The encyclopedia is a concise source of basic information on petroleum products.

34. **Tables of Useful Information**, Lubetext D400, Exxon Company, USA. This booklet contains a wide variety of information with emphasis on petroleum products.


36. **Control of Hazardous Material Spills, Proceedings of 1980 National Conference on Control of Hazardous Material Spills**, Vanderbilt University, Nashville, TN 37232. This compilation of the papers presented to the Conference is divided into 16 categories dealing with all aspects of hazardous materials spills.

37. **Tanker Safety Guide (Chemicals)**, 4 volumes, 1971, International Chamber of Shipping, 30-32 St. Mary Axe, London, EC3A 8ET, England. This publication outlines safety practices for all aspects of the operation of chemical tankers. Specific areas treated include fire protection, chemical reactivity.

38. **Tanker Safety Guide (Liquefied Gas)**. International Chamber of Shipping. This guide deals with all aspects of the safe operation of LPG, ethylene and LNG vessels.


41. **Handbook of Reactive Chemical Hazards**, by L. Bretherick, 1975. CRC Press, 18901 Cranwood Parkway, Cleveland, OH 44128. This book is a source of stability data on single specific compounds, on possible violent interaction between two or more compounds, general data on a class of compounds, and chemical structure associated with explosive instability.

42. **Essentials of Toxicology**, 3rd edition, 1978, by Ted A. Loomis. Describes mechanisms and other factors involved in the production of harmful effects of chemicals on biological cells, systems or whole animals.

CHEMICAL HAZARDS RESPONSE INFORMATION SYSTEM (CHRIS)

MANUAL 1 COMDTINST M16465.11 A CONDENSED GUIDE TO CHEMICAL HAZARDS

Intended for use by response personnel who may be the first to arrive at the site of an accidental discharge or fire to assess the dangers and consider the appropriate large-scale response necessary to safeguard life and property (contains 1000 chemicals).

MANUAL 2 COMDTINST MI 6465.12 HAZARDOUS CHEMICAL DATA

This manual is the cornerstone of CHRIS. It lists the specific chemical, physical and biological data for about 1000 chemicals needed for the preparation and use of other components of the system. It is intended for use primarily by the On-Scene Coordinator (OSC) and by regional and National Response Centers for devising, evaluating and carrying out response plans.

MANUAL 3 COMDTINST M16465.13 HAZARD ASSESSMENT HANDBOOK

Describes procedures to be used for estimating the quantities of a hazardous chemical discharge onto a navigable waterway during shipment. also describes how to estimate its concentration in air and water as a function of time and distance from the discharge. Methods for predicting the resulting toxicity, fire, and explosion effects are also described.

MANUAL 4 COMDTINST M16465.14 RESPONSE METHODS HANDBOOK

Describes cautionary and corrective response methods for reducing and eliminating hazards that result from chemical discharge. Written specifically for Coast Guard personnel with training or experience in pollution response.

NOTE: Coast Guard offices can obtain CHRIS manuals at no cost through the directives system. All others must purchase the manuals from the Government Printing Office. Any questions with regard to the CHRIS system should be referred to:

Commandant (G-WER-2)
Coast Guard Headquarters
2100 2nd Street, S.W.
Washington, DC 20593
CHRIS
CHEMICAL HAZARDS RESPONSE INFORMATION SYSTEM
PROCEDURES FOR OBTAINING MANUALS

ORDER FROM: SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D.C. 20402
(202)-783-3238

Please confirm availability and price with GPO before placing your order.

MANUAL 1 COMDTINST M16465.11 A CONDENSED GUIDE TO CHEMICAL HAZARDS

CONTENTS order number: 050-012-00146-4
BINDER order number: 050-012-00151-1

MANUAL 2 COMDTINST M16465.12 HAZARDOUS CHEMICAL DATA*

CONTENTS order number: 050-012-00147-2
BINDER order number: 050-012-90251-8

Enclosure(l) to MANUAL 2 Graphs of Temperature Dependent physical properties.*

CONTENTS order number: 050-012-00158-S
BINDER order number: 050-012-90251-8

MANUAL 3 COMDTINST M16465.13 HAZARD ASSESSMENT HANDBOOK

CONTENTS order number: 050-012-00160-0
BINDER order number: 050-012-90251-8

MANUAL 4 COMDTINST M16465.14 RESPONSE METHODS HANDBOOK

CONTENTS order number: 050-012-00152-9
BINDER order number: 050-012-90251-8

* Manual 2 and Enclosure (1) to Manual 2 are two volume sets and two (2) binders are needed for each set.

REVISIONS:

- Change 1 to MANUAL 1; addition of 85 Chemicals and subsequent new "Index of Codes" for COMDTINST M16465.11
  order number: 050-012-00162-6

- Change 2 to MANUAL 2; Addition to 85 chemicals and subsequent "Index of Codes" for COMDTINST M16465.12 and Enclosure (1) to MANUAL 2
  order number: 050-012-00165-1

Emergency services (firefighters, police, first aid, and Civil Defense) may obtain the guidebook from:

The International Association of Fire Chiefs Attention ERG, 139
18th Street, N.W.
Washington, D.C. 20036

Industry may obtain the guidebook from any of the firms listed below:

American Trucking Assoc., Inc.,
Customer Service Section
1616 P Street, N.W.
Washington, D.C. 20036
(202) 797-5384

Labelm aster
7525 N. Wolcott
Chicago, IL 60626
(800) 621-5808
(312) 973-5100

J J. Keller
145 Wisconsin Avenue
Neenah, WI 54956
1-800-558-5011

UNZ and Company
190 Baldwin Avenue
Jersey City, NJ 07306
(800) 631-3098
(201) 795-5400 (NJ), (212) 432-1205 (NY)