

HMIS® IMPLEMENTATION MANUAL, THIRD EDITION

Chapter 1 Introduction to HMIS®

1.0 Chapter Overview

This chapter serves as an introduction to the Hazardous Materials Identification System (HMIS®) and describes the purpose, origin, and structure of the system.

1.1 What is HMIS®?

The National Paint and Coatings Association (NPCA) developed the Hazardous Materials Identification System (HMIS®) in order to provide employers with a tool designed to aid employers in the development and implementation of a comprehensive Hazard Communication Program. HMIS® involves:

- Hazard assessment;
- Labeling;
- Material Safety Data Sheets (MSDS); and
- Employee training.

HMIS® communicates hazard information through training and the use of colors, numbers, letters of the alphabet, and symbols that include pictograms of types of personnel protective equipment (PPE) and icons for Target Organs and Physical Hazards. The program is based on a hazard rating scheme designed to be compatible with hazard communication systems of such organizations as American National Standards Institute (ANSI), National Institute of Occupational Safety and Health (NIOSH), U.S. Environmental Protection Agency (U.S. EPA), and National Fire Protection Association (NFPA®) that are found in workplaces across the nation.

1.2 Why Use HMIS®

Every employer is responsible for providing his or her employees with a safe and healthy workplace. Hazard communication is an important part of this responsibility. Employers must be trained to recognize the potential hazards of diverse chemicals and properly deal with these hazards through work practice procedures and the use of PPE. Additionally, hazard communication is the law. The Occupational Safety and Health Administration's (OSHA) standard titled "Hazard Communication" found in Title 29 (Labor) of the Code of Federal Regulations (CFR) part 1910, section 1200, requires chemical manufacturers, importers, distributors, and employers to provide hazard information to employees and customers.

HMIS® serves as a primary means of complying with the OSHA Hazard Communication Standard (hereafter referred to as "the standard" or "HCS"). This implementation manual may be used as the basis of a written hazard communication plan. The rating, labeling, and training portions of the implementation process satisfy many of OSHA's requirements for hazard evaluations, workplace labeling of hazardous materials, and employee instruction, respectively.

OSHA stated in the Preamble to the 1983 HCS that "Labels prepared in accordance with NPCA's Hazardous Materials Identification System would generally be in compliance with this standard." OSHA recently re-confirmed the acceptability of HMIS® as an in-plant hazard communication tool by stating in the Preamble to the 1994 Revised Final Hazard

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Communication Standard, that this type of system continues to be an acceptable means of complying with the standard, provided adequate attention is given to target organ hazards during employee training.

Chapter 5 of this manual includes the text of the standard and outlines how HMIS® helps employers meet its requirements. Appendix A compares the use and purpose of HMIS® and other hazard labeling systems, such as that of the National Fire Protection Association (NFPA®).

1.3 The Origin of HMIS®

NPCA is the preeminent organization representing the paint and coatings industry in the United States. A voluntary, nonprofit trade association, NPCA represents some 400 paint and coatings manufacturers, raw materials suppliers, and distributors.

By the mid-1970s several companies had developed information systems to identify the hazards of substances in their facilities and to promote safe use of these substances by employees. These systems had several elements in common, including hazard assessment, hazard communication, and job safety training based on workplace hazards. NPCA recognized the need for effective hazard communication and began developing HMIS® in 1976.

The NPCA Occupational Health/Product Safety Task Force reviewed these systems. NPCA took the Safety and Health Index System (SHIS) developed by PPG Industries, Inc., and combined it with effective portions of systems from other companies. The goal was to provide a uniform, comprehensive system to inform employees of the hazards encountered during the performance of their jobs. (For a more detailed description of the PPG Industries, Inc., Safety and Health Index System, please see Appendix A of this manual, entitled “A Comparison of Hazard Warning Labels: Purposes and Applications.”) Though developed by NPCA, HMIS® meets the HCS requirements for all types of industries, and paint manufacturers comprise only a small percentage of all HMIS® users.

1.4 The Purpose of the HMIS® Implementation Manual, Third Edition

This implementation manual provides a comprehensive explanation of HMIS® and is designed to assist employers in implementing the system in their facilities. It also contains the bulk of the information required by the written hazard communication program and labeling provisions of the OSHA HCS. (For a checklist of items OSHA requires in a written hazard communication program, see Chapter 6 of this manual.)

Other helpful features include a plain-language introduction to HCS, information on evaluating the company-written hazard communication program and using the employee training guide, and information on how to read, produce, and use material safety data sheets (MSDSs) in conjunction with HMIS®. The manual also contains instructions for developing HMIS® ratings, answers to questions frequently asked about HMIS®, and a glossary of terms.

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“Developing HMIS® Ratings” and “An Employee’s Guide to the HMIS®” are included in this manual as Chapters 7 and 13, respectively. Additionally, copies of these sections are also available separately.

1.5 The Concept of the System

HMIS® is a comprehensive system covering hazard assessment, hazard communication, and employee training. HMIS® Hazard Assessment (described in Chapter 7) provides the tools for defining the Health, Flammability, and Physical Hazard presented by different chemicals. The hazard determination is aligned with categories found in the HCS. Based upon results of the Hazard Assessment, the HMIS® labeling system provides “at-a-glance” communication of information to employees who have received comprehensive training on the use of this system. The label identifies general Health, Flammability, and Physical Hazards, using color-coded fields, as well as recommendations for personal protective equipment. Icons then show the specific type of Health, Physical Hazard, or PPE; i.e., the specific target organ affected or that the noted physical hazard is explosive, and that the PPE combination of choice consists of a splash shield, protective gloves, and a synthetic apron. The icons are a new aspect of the HMIS®. They are intended as an optional adjunct to the label and are designed to be placed “around” the label in close proximity to the respective rating; e.g., Health Rating-Target Organ Icons, Physical Hazard Rating-Physical Hazard Icons, and PPE code-PPE Icons. Chapter 2, Implementing the System, provides the user with necessary details to apply HMIS®.

1.5(A) Hazard Assessment

Hazard assessment involves the collection and evaluation of hazard information on chemicals used in a workplace. HMIS® hazard assessment process includes the development of numerical ratings for the acute Health, Flammability and Physical Hazards, the designation of any chronic health hazards that might exist, and the assignment of PPE. For those employers who are end users of chemicals manufactured by another party, the chemicals’ MSDS is generally the most readily available source of information for performing the Hazard Assessment. In addition to chemical-specific information, knowledge of work practices (specifically how and where the chemical will be used) is essential for the Hazard Assessment Process. Detailed information on conducting hazard assessments and developing HMIS® ratings for materials is included in Chapters 2 and 7 of this manual. If the hazard assessment is for a new material for which an MSDS must be developed, see also Chapter 9.

1.5(B) Hazard Communication

The hazard communication portion of the HMIS® program includes tools designed to easily communicate information on:

- Chemical identity;
- Chronic and acute health hazards;
- Degree of flammability and physical hazards; and
- Proper personal protective equipment.

Labels are a primary HMIS® tool. Information on HMIS® labels does not replace or substitute for the labeling information OSHA requires of chemical manufacturers, importers, or distributors, but instead, supplements it in a user-friendly way. The HMIS®

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label conveys product identity by chemical or common names, code numbers, or other descriptive terms that clearly identify the material to employees.

The presence of chronic health hazards is communicated by an (*) linked to descriptive information on the MSDS. The severity of any acute Health, Flammability, and Physical Hazards is communicated by numerical ratings.

PPE is specified by an alphabetical designation, with items identified either as groupings of complementary equipment or as individual pieces of safety wear.

HMIS® III has been improved by the introduction of new self-adhering icons that are designed to be placed on the container around the HMIS® label to further identify the specific Health Hazard (target organ), Physical Hazard, or PPE required. Such icons should correspond to and supplement information on the MSDS. The use of icons is an added benefit to the overall system, but not critical to the system's functionality.

Other available HMIS® communication tools includes workplace posters, wallet cards that inform employees about workplace chemical hazards, target organ posters and labels, right-to-know posters, and hazard rating wall charts.

The combination of HMIS® labels, icons, and communication tools aid the employer in meeting his labeling requirements stated in the Hazard Communication Standard as follows:

“the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with the following information: (f)(5)(i) Identity of the hazardous chemical(s) contained therein; and, (f)(5)(ii) Appropriate hazard warnings, or alternatively, words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.”

For further information on using HMIS® to communicate chemical hazard information, see Chapter 2 of this manual.

1.5(C) Employee Training

Employee training is the final major component of the HMIS®. The HCS outlines specific elements employers must include in their employee HCS training programs. One of the requirements addresses the use of in-house labeling systems for communication of information. Employees must be fully informed on the system, including how it works, and what the labels mean. **The use of the HMIS® labeling system alone, without proper employee training, will not fully satisfy the requirements of the HCS.** HMIS® is supported by an array of multimedia training materials, which may form the basis of the employer's hazard communication training. A copy of the training booklet, “An Employee's Guide to the HMIS®”, is included in this manual. Wall posters and wallet cards are used to reinforce HMIS® information in the workplace. For additional information on HMIS® training, see Chapter 3 and Part V of this manual.

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1.6 Transitioning to the HMIS® III

This section is intended to assist industry representatives who are currently using an older version of the HMIS® (First or Second Edition) in implementing the new HMIS® Third Edition (HMIS® III). Though there are numerous different ways to accomplish this transition, this procedure was developed by industry participants who have actually made the transition and learned from it. Hopefully, your transition will be error and confusion free.

1.6(A) In What Way Has HMIS® Changed

The HMIS® Implementation Manual, Third Edition, is designed to be a BETTER and more COMPREHENSIVE compliance tool for employers' use in meeting requirements of the OSHA HCS. Significant changes in the third edition include the following:

1. Changes in definitions provide better alignment with language found in the HCS. The third edition HMIS® adopts OSHA's criteria for "Flammability" rating and adds a "Physical Hazards" category with seven subcategories:
 - Water Reactive;
 - Organic Peroxides;
 - Explosives;
 - Compressed Gasses;
 - Pyrophorics;
 - Oxidizers; and
 - Unstable Reactives.
2. Consistent with adding these discrete physical hazard criteria, the HMIS® label has been revised. The new labels feature a field entitled "Physical Hazard," which replaces "Reactivity." In light of this change, the label also has a new look. The new Physical Hazard field is orange, to distinguish it from the yellow Reactivity field. A border makes the label more visually distinctive, and the colors used on the label comply with the most recent ANSI Color Code (ANSI Z535.1-1998).
3. New icons are available to identify specific health and physical hazards. The icons support "at-a-glance" hazard recognition and aid employers with internal product labeling, informing employees of the specific nature of the chemical hazard as emphasized by OSHA. Icon stickers are now available for Target Organs, Physical Hazards, and PPE.
4. Chapter 12, Hazard Communication Training, has been expanded to include the most current information and guidance that OSHA offers on the topic, with increased training emphasis on understanding Target Organ hazards. This chapter also explains how to effectively incorporate HMIS® into your site-specific Hazard Communication Training Program using new training aids covered in Chapter 13, Employee Training Materials. Training aids also reflect the changes in label and icon options.

1.6(B) Do I Need to Replace All the Existing HMIS® Labels With HMIS® III Labels?

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Yes, as is discussed elsewhere in this document, replacing HMIS® labels is part of the transition. However, this can be accomplished in a measured, controlled way. In general, the labels that may have been placed on hazardous chemicals in your workplace continue to have utility, so long as your employees have been trained to understand them and continue to be able to use the appropriate precautions as a result. However, HMIS® III was designed to improve the in-plant hazard communication process and make your compliance with the OSHA Hazard Communication Standard even more assured. We have no doubt that the new rating system, along with its training components, is greatly superior to the existing HMIS® product. OSHA, in enforcing the HCS, does not require that you use HMIS®. It does, however, require that if you employ a system such as HMIS® in your workplace, you use it correctly and fully train your workers on its use. Should you rely on HMIS® to support your Hazcom compliance program, you are well advised to use the most comprehensive and up-to-date system on the market, HMIS® III. As you implement HMIS® III, new workers you may hire will not have received training on prior versions of HMIS® and may not understand older versions of the label. Consider training new hires with both systems until the transition to HMIS® III has been completed. This simple fact dictates that you should make your transition to the new system in a deliberate way. This document provides you with the tools and structure to manage this transition and most completely ensures your ultimate compliance with the OSHA Hazcom.

1.6(C) How do I Manage the Transition from the Current Version of HMIS® to the HMIS® III?

The most important modifications of the HMIS® are the new Physical Hazard rating criteria and the introduction of icons to convey the specific physical hazards and the Target Organ hazards posed by the chemical or chemical mixture. These changes will most significantly affect training and labeling of materials within the facility.

In light of these important and necessary changes, HMIS® users will need to consider changing MSDSs, HMIS® Labels, and any other HMIS® information placed upon products that leave the facility. Additionally, you should evaluate the support documentation (HMIS® Brochures, etc.) your company uses to support your HMIS® activities.

1.6(D) What Are the Steps in an In-Plant Program Transition?

Step 1

The HMIS® implementation manager (IM) should obtain the HMIS® III Implementation Manual and familiarize him/her self with all of the new aspects of the system. Attention should be given to the Physical Hazard rating criteria, the Icons and the new posters, and labels addressed throughout the Manual.

Step 2

The IM should establish the length of the transition period, i.e., the time frame during which the company will convert from the prior edition of HMIS® to the HMIS® III. We recommend a full year for this purpose.

Step 3

The IM should incorporate all the new HMIS® III and support/communications materials into the company's existing Hazard Communication Training Program. Since there will be a

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period of time when both the old and the new HMIS® III information and ratings will be used throughout the facility, employees must be aware of the transition and knowledgeable on both systems.

When developing the new training program, the IM should use all of the HMIS® III training aids available. This includes:

- The HMIS® Label;
- The HMIS® Wall Poster;
- The HMIS® Wallet Card;
- The Employee Guide to HMIS®;
- The Employee Quiz;
- The HMIS® Wall Poster Rating Chart Set;
- The HMIS® PPE Index;
- Physical Hazard Icons;
- Target Organ Icons;
- HMIS® Right-To-Know Poster;
- HMIS® Haz Com Target Organ Poster; and
- HMIS® Target Organ Labels;

The transition should not be initiated until ALL employees have received this training.

If MSDSs for the materials used reflect HMIS® ratings developed under an earlier version, we suggest making the changes to the MSDS over the transition period rather than republishing them all at one time. We also suggest first changing any MSDSs of products which are scheduled for revision, leaving the established ones for later.

Step 4

The IM should begin using the various HMIS® III communication tools throughout the facility as soon as possible after the initial training is completed.

Step 4-A Classic HMIS® III Labels – New Material Containers

The first objects to receive the new HMIS® III labels should be those containers that are short-lived in the facility. Begin placing the new HMIS® III labels on raw materials and products which arrive at the loading docks as soon as the transition training has been completed.

Step 4-B Classic HMIS® III Labels – Static Containers

Once you have established a process to label containers and material packaging for products with short shelf lives, you can begin to re-label static containers, tanks, totes, etc. You can accomplish this gradually, replacing old labels over a predetermined time frame.

The IM should plan to have ALL of the old labels replaced with the new labels in the early stages of transitioning. We recommend, depending on the number of labels involved, this be accomplished in the first quarter of the transition period.

Step 4-C HMIS® III Wall Posters

The original HMIS® Wall poster should be posted next to the old version during the first part of the transition period. This helps serve as reinforcement to the transition and lessens

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the possibility of errors in interpreting the new system information. The new HMIS® III posters should be posted at other locations to reinforce the new system and the new information.

Step 4-D HMIS® Wallet Cards

The wallet cards have not changed in the new HMIS® III. They are still excellent information prompters for the ratings and codes listed on the HMIS® Labels. They contain much the same information as the original HMIS® Wall Poster, e.g. explanation of the HMIS® ratings and the PPE code equipment and combinations.

Step 4-E HMIS® PPE Index

The PPE Index has also not changed in the new HMIS® III. However, it is still a good idea to reinforce the PPE information during the training session and provide the Index in either label or Poster format throughout the facility.

Step 4-F Other Forms of HMIS® III Communications Tools

All of the other HMIS® III support/communications materials should also be used at the early stages of transition. This will ensure the employees become familiar with them and have time to ask questions and resolve conflicts, should they arise, early in the transition.

Step 5

Refresher or Reinforcement Training should be scheduled periodically during the transition period or as often as needed. The objective of these training sessions is to address any potential employee questions about HMIS® III and the transition process, and ensure employees clearly understand the key aspects of the new HMIS® III. We recommend emphasizing and using only HMIS® III materials during the training sessions. This will aid in an orderly and complete transition. We also recommend using the HMIS® III Posters as the major instructional props for the training sessions and to augment the training with actual HMIS® III labels for materials commonly used in the work place. It may be helpful to use several example labels to demonstrate all of the different icons for Physical Hazards and Target Organs.

1.6(E) How do I Manage this Transition for Out-Of-Plant (Downstream) Uses of the HMIS®?

Chemical manufacturers, suppliers, or distributors who choose to provide HMIS® III ratings and/or labels on MSDSs or who place HMIS® III Labels on products which leave their facility must be prepared to ensure that their customers and their customers' employees fully understand the transition to the third edition and what that means in terms of their own hazard communication programs.

1.6(E)(1) MSDSs

As with the In-Plant transition recommendations, the new HMIS® III ratings and labels may be placed on MSDSs that are due for revision first. The other MSDSs may be scheduled over a predetermined period of time, dictated by the number of MSDSs involved.

We recommend that explanatory text be placed in close proximity to the New HMIS® III ratings or labels indicating that they reflect new ratings criteria and directing the reader to

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a part of the MSDS with a more detailed explanation. As an example, the following may be considered for use:

MSDS for Tetra-Ethyl Chicken Fat

NFPA	HMIS®
H=1	H=1
F=2	F=2
I=1	PH=2

Note* See Section III for more information, and Section III may contain the following “explanation”:

HMIS® III: The HMIS® III ratings displayed on the front of this MSDS are from the HMIS® Third Edition. There have been significant changes made to the system. “PH” stands for “Physical Hazard” as defined in the OSHA Haz Com Standard and replaces the former code “R” for “Reactivity.” For a more detailed explanation of the system and the ratings, please contact our Health, Safety, and Environmental Staff at [insert your phone number or address]

As before, preparers of MSDSs should not place HMIS® PPE designation codes on the MSDSs or labels that leave the facility, as they do not know the conditions under which their customers use those products.

1.6(E)(2) Product Labels

Container label stock often represents a significant monetary investment for many companies. If HMIS® labels are to be placed on product containers leaving the facility, either as part of the label or as an independent stick-on, we recommend the following:

- For new container label stock, containing the new HMIS® III labels, replace the old ones initially on products which are due for label revisions and then on the products whose labels are relatively static or established. This may be accomplished as resources permit in a predetermined, metered fashion. We also recommend that either a statement is added to the label immediately below the HMIS® III label identifying it as “new” and providing a short explanation, or a brochure explaining the details of the new HMIS® III program is provided with the product.
- Another recommendation for those companies that are undecided whether to convert to the new HMIS® III would be to remove the HMIS® from the product labels as revisions occur now and reinstate at a later date.

In all cases, please remember that including HMIS® on your product labels is voluntary. There are no Federal/State/Local regulations mandating HMIS® inclusion on product labeling.

1.7 Is there a List of Chemicals with their HMIS® Ratings?

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YES! New for the Third Edition of the HMIS® is the publication of a companion document entitled “HMIS® Chemical Ratings Guide.” One feature lacking in older versions was a reference containing HMIS® ratings for commonly used chemicals. Employers were expected to develop their own ratings or obtain recommended ratings from suppliers. As a result, ratings of common chemicals often varied from user to user depending on how the person developing the rating interpreted the HMIS® ratings guidance. To address this problem and make the system more comprehensive, HMIS® now features an “HMIS® Chemical Ratings Guide”. While users will have to develop ratings for chemicals or chemical mixtures that are not addressed in the new Guide, HMIS® users will now be able to rely on the guide for well-documented ratings for a large number of commodity chemicals.

The guide contains an explanation of how to develop HMIS® ratings, a table of chemicals with their HMIS® ratings, and finally an Appendix with an HMIS® Rating Classification Data Sheet for each chemical listed in the table.

1.8 Where can I get the HMIS® III Implementation Manual and all of the Support Materials?

The exclusive licensee for *ALL* HMIS® materials is J. J. Keller and Associates, Inc. They may be reached at:

J.J. Keller & Associates, Inc.
3003 W. Breezewood Lane
P. O. Box 368
Neenah, Wisconsin 54957-0368
Toll Free: (800) 327-6868
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