

## SCOPE & DEFINITIONS

This Chapter contains criteria for the storage, handling, and disposition of hazardous materials. It does not cover solid or hazardous waste, underground storage tanks, petroleum storage, and related spill contingency and emergency response requirements. These matters are covered under other Chapters. This FGS does not cover munitions.

**ADR** – The European Agreement concerning the International Carriage of Dangerous Goods by Road, concluded at Geneva on 30 September 1957, as amended.

**Hazardous Chemical Warning Label** – A label, tag, or marking on a container which provides the following information and which is prepared in accordance with DoD 6050.5-H (DoD Hazardous Chemical Warning Labeling System): (1) identification/name of hazardous chemicals, (2) appropriate hazard warnings, and (3) the name and address of the manufacturer, importer or other responsible party.

**Hazardous Material** – Any substance, compound, preparation, or material that is capable of posing an unreasonable risk to health, safety, or environment if improperly handled, stored, issued, transported, labeled, or disposed because it displays a characteristic listed in Table 5-1, Typical Hazardous Materials Characteristics, or the material is listed in Appendix A. Munitions are excluded.

**Hazardous Material Information System (HMIS)** – The computer-based information system developed to accumulate, maintain and disseminate important information on hazardous material used by DoD. The HMIS has been assigned Report Control Symbol DD-A&T(AR) 1486 in accordance with DoD 8910-M.

**Hazardous Material Shipment** – Any movement of hazardous material in a DoD land vehicle either from an installation to a final destination off the installation, or from a point of origin off the installation to a final destination on the installation, in excess of any of the following quantities:

- For hazardous material identified as a result of inclusion in Appendix A any quantity in excess of the reportable quantity listed in Appendix A
- For other liquid or semi-liquid hazardous material, in excess of 410 liters (110 gallons)
- For other solid hazardous material, in excess of 225 Kg (500 pounds)
- For combinations of liquid, semi-liquid and solid hazardous materials, in excess of 340 Kg (750 pounds)

**Material Safety Data Sheet (MSDS)** – A form used by manufacturers of chemical products to communicate to users the chemical, physical, and hazardous properties of their product.

**Motorizzazione Civile** – The Italian civil driving authority that regulates the transport of persons or goods.

**Preparation** – A mixture or solution of two or more substances.

## **CRITERIA**

### **C5.1 STORAGE & HANDLING OF HAZARDOUS MATERIALS**

Storage and handling of hazardous materials will adhere to DoD Component policies (including Joint Service Publication on Storage and Handling of Hazardous Materials). DLAI 4145.11, TM 38-410, NAVSUP PUB 573, AFJMAN 23-209, and MCO 4450-12 provide additional guidance on the storage and handling of hazardous materials. The International Maritime Dangerous Goods (IMDG) Code and appropriate DoD and Component instructions provide requirements for international maritime transport of hazardous materials originating from DoD installations. International air shipments of hazardous materials originating from DoD installations are subject to International Civil Air Organization Rules or DoD Component guidance including AFJM 24-204, TM 38-250, NAVSUP 505, MCO P4030.19E, and DLAM 4145.3.

An assessment of fire risks shall be conducted for all hazardous material storage and handling areas. The fire risk assessment should be updated whenever there is a substantial change in the facility or operations. Installations should coordinate with their local (i.e., responding) fire department to determine the appropriate components of their site-specific fire risk assessment.

### **C5.2 HAZARDOUS MATERIAL DISPENSING AREAS**

Hazardous material dispensing areas will be properly maintained. Drums/containers must not be leaking. Drip pans/absorbent materials will be placed under containers as necessary to collect drips or spills. Container contents will be clearly marked. Dispensing areas will be located away from catch basins and storm drains. Hazardous material MSDSs will be reviewed to identify any manufacturer's recommended special storage and handling practices. If such practices are more protective, they should be implemented for that specific hazardous material if feasible.

### **C5.3 HAZARDOUS MATERIAL SHIPMENT**

Installations will ensure that for each hazardous material shipment transported on Italian public roads:

- C5.3.1 The shipment is accompanied throughout by shipping papers that clearly describe the quantity and identity of the material and which include an MSDS.
- C5.3.2 All Italian drivers must be ADR certified (by a training center authorized by the Italian Motorizzazione Civile); U.S. military drivers must also be ADR trained. See C5.10. All drivers must be briefed on the hazardous material included in the

shipment, including health risks of exposure and the physical hazards of the material (including potential for fire, explosion, and reactivity).

- C5.3.3 All drivers will be trained on spill control and emergency notification procedures. Notification procedures are provided in Chapter 18.
- C5.3.4 For any hazardous material categorized on the basis of Appendix A, the shipping papers and briefing for the driver include identification of the material as "Ignitable," "Corrosive," "Reactive," or "Toxic".
- C5.3.5 The vehicles are subjected to a walk-around inspection by supervisory personnel before and after the material is loaded.
- C5.3.6 Packages are labeled in accordance with Joint Service Publications (see C5.1), C5.7, and Table 5.2. The Joint Service Publications incorporate requirements for UN standard packaging.
- C5.3.7 If a commercial transporter is used, contracting officials will ensure that the transporter has the applicable licenses or permits for operation.

#### **C5.4 MASTER LISTING OF STORAGE LOCATIONS & INVENTORY OF MATERIAL**

Each installation will maintain a master listing of all storage locations for hazardous material and an inventory of all hazardous materials contained therein (see C18.2). The master listing and inventory will be provided to the Italian Base Commander, who may transmit the information to the local fire department in accordance with any mutual assistance agreements (see Chapter 1 for the procedure).

#### **C5.5 MATERIAL SAFETY DATA SHEETS**

Each material safety data sheet (MSDS) shall be in English and Italian if Italian workers are present in the workplace, and shall contain at least the following information. If a translated MSDS is not available, bilingual training will be provided on the content of the MSDS.

- C5.5.1 The identity used on the label:
  - C5.5.1.1 If the hazardous chemical is a single substance, its chemical and common name, and its Chemical Abstract Service (CAS) Number
  - C5.5.1.2 If the hazardous chemical is a mixture which has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients which contribute to these known hazards, and the common name(s) of the mixture itself

- C5.5.1.3 If the hazardous chemical is a mixture which has not been tested as a whole:
- The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise 1% or greater of the composition, except that chemicals identified as carcinogens shall be listed if the concentrations are 0.1% or greater
  - The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit, or could present a health hazard to employees
  - The chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture
- C5.5.2 Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point)
- C5.5.3 The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity
- C5.5.4 The health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical
- C5.5.5 The primary route(s) of entry (inhalation, skin absorption, ingestion, etc.)
- C5.5.6 The appropriate occupational exposure limit recommended by the chemical manufacturer, importer, or employer preparing the MSDS, where available
- C5.5.7 Whether the hazardous chemical has been found to be a potential carcinogen
- C5.5.8 Any generally applicable precautions for safe handling and use which are known to the chemical manufacturer, importer, or employer preparing the MSDS, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks
- C5.5.9 Any generally applicable control measures which are known to the chemical manufacturer, importer, or employer preparing the MSDS, such as appropriate engineering controls, work practices, or personal protective equipment
- C5.5.10 Emergency and first aid procedures
- C5.5.11 The date of preparation of the MSDS or the last change to it

- C5.5.12 The name, address, and telephone number of the chemical manufacturer, importer, employer, or other responsible party preparing or distributing the MSDS, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary

## **C5.6 MSDS FILE**

Each work center will maintain a file of MSDSs for each hazardous material procured, stored, or used at the work center. MSDSs that are not contained in the HMIS and those MSDSs prepared for locally-purchased items should be incorporated into HMIS. A file of MSDS information not contained in HMIS should be maintained on site.

## **C5.7 HAZARDOUS CHEMICAL WARNING LABELS**

All hazardous materials on DoD installations will have a Hazardous Chemical Warning Label in accordance with DoDI 6050.5-H and have MSDS information either available or in HMIS in accordance with DoD Directive 6050.1 and other Component instructions. These requirements apply throughout the life-cycle of these materials.

All hazardous materials labels must be in English and Italian if Italian workers are present in the workplace and must follow the requirements in Table 5.2. If a translated label is not available, bilingual training will be provided on the content of the label.

## **C5.8 REDUCTION OF THE USE OF HAZARDOUS MATERIAL**

DoD installations will reduce the use of hazardous materials where practical through resource recovery, recycling, source reduction, acquisition, or other minimization strategies in accordance with Service guidance on improved hazardous material management processes and techniques.

## **C5.9 EXCESS HAZARDOUS MATERIAL**

All excess hazardous material will be processed through the Defense Reutilization and Marketing Service (DRMS) in accordance with the procedures in DoD 4160.21-M. DRMS will only donate, transfer, or sell hazardous material to environmentally responsible parties. Prior to doing so, DRMS should evaluate whether there are restrictions on the marketing or distribution of that material within Italy. Materials that are transferred to a third party should be labeled in accordance with C5.7. This paragraph is not intended to prohibit the transfer of usable hazardous material between DoD activities participating in a regional or local pharmacy or exchange program.

## **C5.10 PERSONNEL TRAINING**

All personnel who use, handle, or store hazardous materials will be trained in accordance with DoDI 6050.5 (DoD Hazard Communication Program) and other Component instructions. The

training will be documented and the training records will be retained in accordance with applicable instructions. At a minimum, the training will include the following subjects:

- Hazards to which the personnel are potentially exposed
- Precautions for safe use of the hazardous material
- Personal protective equipment and control devices
- Exposure symptoms and emergency first aid treatment
- The use of MSDSs
- Labeling of hazardous materials in accordance with C5.7 and DoDI 6050.5-H
- Waste disposal instructions

All U.S. military personnel who transport hazardous material by vehicle will also be trained in accordance with ADR. Italian employees who transport hazardous material by vehicle must be ADR trained and certified (by a training center authorized by the Italian Motorizzazione Civile). Italian employees who transport hazardous material by tank trucks must receive specific ADR training for tank truck transportation.

Italian employees who use, handle, or store hazardous materials must receive training on general health and safety issues as well as on the specific hazards associated with the worker's specific tasks/duties. The training must be conducted at the time of first employment, when the worker is transferred or receives different duties, and when new technologies, tools, or materials are introduced. The training must be periodically repeated according to the evolution of the risks or when new risks are identified. The training should include information on:

- Health and safety hazards associated with the general activities conducted at the work place
- Preventive and protective measures and activities adopted
- Specific hazards to which the worker is exposed on the basis of his/her job/tasks
- Italian health and safety regulations and organization norms on health and safety
- Hazards related to the handling and use of the hazardous materials, according to the data contained in the MSDSs
- First aid procedures, fire fighting, and site evacuation
- Responsibilities of the site physician and the site manager for health and safety

Italian employees who may potentially be exposed to lead, asbestos, and noise must receive additional periodic training in the following topics (at a minimum):

- Exposure risks and engineering controls on exposure
- Methods of risk evaluation, exposure limit values, and emergency measures
- Information concerning medical surveillance and its significance
- Training in use of personal protective equipment

## **C5.11 PREVENTION OF UNAUTHORIZED ENTRY**

The installation must prevent the unauthorized entry of persons or livestock into the hazardous materials storage area.

**C5.12 ADDITIONAL REQUIREMENTS FOR BATTERIES**

Batteries with the following heavy metal content (other than button-type batteries) must follow the criteria listed below:

- Greater than 25 mg of mercury (Hg)
- Greater than 0.025% by weight of cadmium (Cd)
- Greater than 0.4% by weight of lead (Pb)
- Manganese alkaline batteries with up to 0.025% by weight of mercury (Hg)

The marketing of manganese alkaline batteries containing more than 0.025% by weight of mercury is prohibited, except for prolonged-use batteries operating at temperature lower than 0°C or above 50°C or equipped with special shock protection. For such batteries, the mercury limit is 0.05% by weight.

Batteries and accumulators must bear a visible, readable, and non-erasable seal indicating:

- One symbol indicating the separate collection (acceptable symbols are provided in Figure 5-1). The symbol must occupy at least 3% of the area of the longer side of the battery, and have maximum dimensions of 5 x 5 cm. If the battery is so small that the symbol area is less than 0.5 x 0.5 cm, the separate collection symbol can be printed on the packaging.
- The presence of heavy metals, using their respective chemical symbols (i.e., Hg for mercury, Cd for cadmium, Pb for lead).

The seal must be affixed by the manufacturer or its representative in Italy or by the importer to the Italian territory.

The marketing of equipment containing batteries that cannot be easily removed is prohibited. The equipment must have instructions indicating how to remove the batteries. Portable appliances where the replacement of batteries by unqualified personnel could present safety hazards must be accompanied by instructions informing the user of the presence of the battery and how to safely remove the battery for disposal (as a dangerous waste).

These requirements do not apply to lithium batteries, or batteries used for scientific and professional equipment and medical devices designed to maintain vital functions.

**C5.13 SAFETY EQUIPMENT FOR TANK TRUCKS & HAZARDOUS MATERIAL TRUCKS**

Tank trucks and vehicles transporting hazardous materials should be equipped with the following safety equipment:

- At least one wheel block of dimensions appropriate to the vehicle weight and wheel diameter

- Two warning signs (e.g., reflecting cones or triangles or orange blinking lights) independent from the vehicle electrical system
- A fluorescent jacket or vest for each member of the truck team
- A portable flashlight for each member of the truck team
- Appropriate respirator masks or emergency gas mask in case of transportation of gases or hazardous materials for each member of the truck team
- A fire extinguisher
- A spill response kit appropriate for the hazardous material being transported

### **ADMINISTRATIVE ITEMS**

1. The master listing of hazardous material storage areas and the inventory of hazardous materials will be provided to the Italian Base Commander, who may transmit the information to the local fire department in accordance with any mutual assistance agreements (see Chapter 1).

**Table 5.1 Typical Hazardous Materials Characteristics**

1. The item is a health or physical hazard. Health hazards include carcinogens, corrosive materials, irritants, mutagenics, noxious materials, sensitizers, toxic materials, very toxic materials, materials that are toxic for reproductive activities, materials which damage the skin, eyes, or internal organs, and materials that are hazardous to the environment. Physical hazards include combustible liquids, comburent materials (oxidizing agents), compressed gases, explosives, flammable materials, easily flammable materials, extremely flammable materials, organic peroxides, oxidizers, pyrophoric materials, unstable (reactive) materials, and water-reactive materials.
2. The item and/or its disposal is regulated by the host nation because of its hazardous nature.
3. The item contains asbestos, mercury, or polychlorinated biphenyls.
4. The item has a flashpoint below 93°C (200°F) closed cup, or is subject to spontaneous heating or is subject to polymerization with release of large amounts of energy when handled, stored, and shipped without adequate control.
5. The item is a flammable solid or is an oxidizer or is a strong oxidizing or reducing agent with a standard reduction potential of greater than 1.0 volt or less than -1.0 volt.
6. In the course of normal operations, accidents, leaks, or spills, the item may produce dusts, gases, fumes, vapors, mists, or smokes with one or more of the above characteristics.
7. The item has special characteristics that, in the opinion of the manufacturer or the DoD Components, could cause harm to personnel if used or stored improperly.

**Table 5.2  
Labeling Requirements for Hazardous Materials in the Workplace**

Hazardous materials must be labeled in English and Italian, if Italian workers are present in the workplace (see C5.7). The Italian text cannot be smaller than the text of any other language, and must have the following information:

- Name of the material
- Full name, address, and telephone number of the marketer in the EU
- Hazard symbol and specification (printed in black on a yellow-orange background); the color of the product label must be such that the hazard symbol is clearly visible
- The risk (R-) phrases specific for the use and handling of that material (if the quantity exceeds 125 mm)
- The safety (S-) phrases specific for the use and handling of that material (if the quantity exceeds 125 mm)
- The European Inventory of Existing Commercial Substances (EINECS) number, if available
- The EINECS label, if required

The label must be securely placed on one or more sides of the package, to guarantee horizontal reading when the package is stored in its normal position. The dimensions of labels must be:

Container Capacity	Minimum Dimensions for Labels (mm)
≤ to 3 liters	52 x 74
> 3 liters and ≤ to 50 liters	74 x 105
> 50 liter and ≤ 500 liters	105 x 148
> 500 liters	148 x 210

During use within the workplace, hazardous material containers must bear the original manufacturer's label or the Hazardous Chemical Warning Label. If the manufacturer's label does not include the information required by the Hazardous Chemical Warning Label, the container should be labeled in accordance with DoDI 6050.5-H.

**Figure 5.1 Symbol for Separate Collection of Batteries**

