EXPRO National Manual for Projects Management

Volume 11, Chapter 4

Project Control of Hazardous Materials Procedure

Document No. EPM-KSH-PR-000007 Rev 003

Document Submittal History:

Revision:	Date:	Reason For Issue
000	20/09/2017	For Use
001	03/12/2017	For Use
002	19/11/2018	For Use
003	09/08/2021	For Use

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1.0 PURPOSE

The purpose of this procedure is to describe the primary elements of a hazard communication program that will allow for the adequate protection of workers from the potential dangers associated with hazardous materials in the workplace and provide guidelines for administering an onsite hazardous materials control program.

2.0 SCOPE

The scope of this procedure applies to all works performed under all Government Construction Contracts executed throughout the Kingdom of Saudi Arabia.

3.0 DEFINITIONS

Definitions	Description
Hazardous Material	Materials harmful to human health and/or the environment that is solid, semi-solid, liquid, or gas and may include hazardous wastes.
Hazardous Material Inventory	A log of hazardous materials stored and in use onsite, including type, quantity, location, and safety data sheet (SDS) documentation.
IBC	Intermediate Bulk Container
OSHA	Occupational Health and Safety Administration
Safety Data Sheet (SDS)	A document that states the material's hazardous constituents, chemical and physical properties, health hazards, permissible exposure levels, first-aid procedures, emergency procedures, and the recommended handling and use requirements. The manufacturer must provide an SDS for all hazardous materials.
Entity	Entity - includes Government Ministry, EPMO, Engineering Management Company or any other agency authorized by the Government Ministry to work on its behalf.

4.0 REFERENCES

- OSHA 29CFR 1910 Subpart H Hazardous Materials.
- OSHA 29CFR 1910 Subpart I Personal Protective Equipment.
- OSHA 29CFR 1910 Subpart J General Environmental Controls.
- OSHA 29CFR 1910 Subpart Z Toxic and Hazardous Substances.
- OSHA 29CFR 1910.1200 Hazard Communication
- EPM-KSS-PR-000003 - Project Personal Protective Equipment Procedure
- EPM-KSS-PR-000004 - Project Fire Protection and Prevention Procedure.
- EPM-KSS-PR-000006 - Project Barricades and Signs Procedure
- EPM-KSE-PR-000001 - Project Pollution Control Procedure
- EPM-KSE-PR-000002 - Project Waste Management Procedure
- EPM-KSH-PR-000004 - Project Respiratory Protective Equipment Procedure.

5.0 RESPONSIBILITIES

Each Project shall define responsibilities through its governing policies, plans, procedures and the organization structure respectively. The following proposed responsibilities demonstrate expectations based on the industry's standard practices:

5.1 Project Manager

The Project Manager is responsible for ensuring the resources and arrangements are available for the implementation and management of this procedure.

5.2 Construction Manager, Site Manager or Designee

- Responsible for the overall program.

- Responsible for chemicals and hazardous materials brought on or into the project/facility including those brought on/in by lower tier contractors under their supervision.
- Ensures that the number of chemicals stored are kept to a minimum.
- Ensures that necessary approvals are processed prior to allowing chemicals to be brought on site, consult with his environmental/waste management department to authorize purchase and disposal of chemical substances.

5.3 HSE Representative or Designee

- Maintain a chemical inventory list on their respective sites.
- Maintain records of Safety Data Sheets (SDS) for the chemicals in the inventory list.
- Assist and advise the Construction Manager on hazardous material control standards and regulations.
- Ensure that the necessary emergency kits are available and in a good condition.

5.4 Supervisors

- Ensures that all hazardous chemicals are properly labelled, stored, and disposed of in accordance with the SDS.
- Ensure that his employees are trained in the safe use of hazardous chemicals for routine and non-routine tasks.

5.5 Employees

- Expected to handle chemicals and chemical substances in the proper manner at all times.
- Report any problems/issues/concerns regarding chemicals and/or chemical substances to their supervisor.
- Participate in their employer's hazardous material training program and sign on the training log indicating they have received the required training.

5.6 Waste Manager

- Advises Construction Manager or designee on approving chemical substances for purchase.
- Provides technical assistance on disposal of chemicals in accordance with the Saudi National Regulations.

6.0 RISK ASSESSMENT

An integral aspect of the work planning process is the performance of a proper risk assessment. Risk Assessments must be conducted at the Planning Stage to identify the hazard risks and determine control measures.

The Risk Assessments that shall be conducted at the Planning Stage are as follows:

- Project Risk Assessment.
- Work Method Statements (WMS)
- Job Hazard Analysis (JHA).
- Safety Task Analysis and Risk Reduction Talk (STARRT).

Responsible Contractors shall conduct a health risk assessment for their specific chemicals aligned with their scope of work, and the information developed in the assessment shall be included in Job Hazard Analyses for their work.
The purpose of the assessment is to enable decisions to be made about appropriate chemical selection, control measures, induction and training, monitoring and health surveillance as may be required by the local regulations requirements. Risk assessments and mitigations shall be completed prior to any personnel exposure.

Responsible contractors must complete a suitable and sufficient assessment of any work involving potential exposure to any hazardous substance. Assessments must also include an environmental component that includes but is not limited to:

- Hazardous substances when working on or near water.
- Restricting or substitution of hazardous substances to reduce environmental impact.

The chemical assessment process includes:

- Substitution with a non-hazardous or less hazardous chemicals when available.
- Identification of hazardous substances.
- Review of information about chemicals.
- Identification of physical and health risks from potential exposure to chemical substances.

Communication of hazards and mitigations to protect Project personnel will be accomplished using SDSs, labels, JHA, and STARRT processes Hazardous substance risk assessments will be conducted by the Responsible HSE personnel, supported by their employees who will be using the product. Responsible Contractors will keep risk assessments up-to-date and readily available for audit purposes. Responsible Contractors will indicate on Hazardous Substances Chemical Register (see Table in Section 7.2 for example) Assessment status and applicability.

7.0 PROCESS

7.1 Hazardous Material Control and Communication

Projects must develop specific plans that include a Hazardous Material Control and Communication procedure based on this requirement. The procedure shall describe project/facility-specific actions to be undertaken to manage hazardous materials properly, prevent incidents, and reduce waste generation onsite.

A standard Hazardous Material Control and Communication procedure shall cover the following elements:

- Materials selection.
- Procurement.
- Transportation.
- Storage and dispensing process to users.
- Training and handling.
- Disposal.
- Record keeping.
- Audits and assessment.

7.2 Chemical Registers

Responsible Contractors must develop and maintain a register (inventory) listing all Chemicals which are used, stored, or are under their control in the workplace utilising an electronic system. The Contractor will prescribe the format in which the register is to be maintained. The register and associated SDSs will be initially submitted to Contractor prior to mobilization for review and approval and kept up-to-date monthly. The register will be updated as new chemicals are introduced to the workplace and the use or production of existing chemical is discontinued, and be readily available for audit by Contractor. Responsible personnel will use their respective registers as a source of information and as a tool to manage substances used on the Project.

All chemical registers shall be compiled within a Project Chemical Register that the Contractor HSE Supervisor or designee shall maintain. The intent of this document is to have one up-to-date register for all chemicals on-site and shall be updated on a periodic basis, as needed, or when chemicals are either received or removed from site.

The minimum information which will be included in the register is a list of all chemicals used at the workplace and the SDS for all chemicals as required by the Local regulations/standards.

Personnel with potential for exposure to chemicals, employee representatives, Contractor, emergency services and relevant public authorities will have ready access to the register. The register can either be centrally located or kept in the workplace to which it pertains. The location of the chemical register will be communicated to Contractor and Project personnel.

The Chemical Register will be comprised of the following.

- A list of all the chemicals used (including storage location)
- The SDSs for all those chemicals
- Notation against each chemical as to whether a risk assessment has been completed (all chemicals determined as hazardous or dangerous must have a risk assessment completed). Chemicals are determined as hazardous or dangerous as indicated on the SDS sheets.

Hazardous Substance Chemical Register (Example)

Hazardous Substance Chemical Register				
Company: ABC Project			**Date**: 01-July-2017	
Worksite: Riyadh			**Contact**: J. Chem	
Issue Date:			**Company**:	
(**Date and record of assessment outcome and assessor is required where risk is not significant OR reference to assessment report where risk is significant. *Assessment is optional for substances not classified as hazardous.)***				
Name of Substance	**Supplier**	**Hazardous**	**Date of Determination**	**Assessment**
Bright Wash	Hunter Supplies	N	7/2008	Not required
Ethylene oxide	BDH Chemicals	Y	9/2006	Assessed 01-Oct-2007, Risk significant but controlled, see report RA1.
Super Clean whiteboard cleaner	AAA Chemicals	Y	1/2006	Assessed 06-Nov-2008, Risk not significant due to small quantities held and used and method of application minimizing skin contact – assessed by J. Chem.
Sulphuric acid 98%	BDH Chemicals	Y	12/2007	Assessed 15-Nov-2007, Risk significant and actions taken, see report RA2.
Morning Fresh	Woolworths	N	2/2008	Not required
Sodium bicarbonate	BDH Chemicals	N	6/2007	Not required
Xylene	Merck	Y	1/2009	Assessed 15-Jan-2009, Risk not significant due to small quantities used and controls in place (fume hood, fume hood maintenance program, PPE, PPE maintenance and replacement program, staff training) – assessed by J. Chem.

The Contractor HSE Supervisor or designee will audit the Responsible Entity's annual physical inventory of all chemicals on-site. Substances no longer stored or used on-site will be moved from the register to a redundant file.

7.3 Hazard Communication Program

Workplaces where employees might be exposed to hazardous materials must have a written plan that cover the following:

- Implemented methods to communicate to the employees the hazards they might be exposed to during the course of executing their work.
- How to identify a hazardous material.
- Understanding the hazards associated with each material.

- Knowing the locations of hazardous material on the work site.
- Emergency Response.
- Personal Protective Equipment Requirements.

7.4 Storage of Hazardous Material

Hazardous materials must be stored in a manner that adequately protects both human health and the environment from unintended exposure to the primary hazards associated with the materials. These primary hazards may include explosion, fire, reactivity, toxicity or any combination of these hazards.

Criteria for the location of suitable storage areas include but not limited to:

- Located away from high traffic areas on site and reasonably protected from the potential for vehicle/equipment damage by guardrails, fences, or other structural controls.
- Provided with a means to control access to the materials so that only authorized (e.g., trained) personnel may remove and use the materials.
- Located away from fence line locations immediately adjacent to environmentally sensitive resources (e.g., wetlands, streams, archaeological sites)
- Provided with adequate secondary containment in the form of an impermeable surface surround by curbing or equivalent means to minimize the release of accidentally spilled product to the environment.
- Provided with a means of segregating combustible and flammable materials form oxidizing agents and other sources of ignition.

7.5 Safety Data Sheets (SDS)

The purpose of SDS is to provide the information needed to allow the safe handling of chemicals used at work. The SDS for a chemical substance describes its identity, relevant health hazard information, precautions for use and safe handling information.

Manufacturers/suppliers and importers shall produce SDS for all chemicals that they supply.

Assigned Sub-contractor and other delegates shall provide to Contractor, prior to mobilization, a Chemical Register and an SDS for each chemical listed on the register utilizing the Contractor electronic system. Contractor shall review and approve the use of each chemical. Materials and substances that are not approved will not be allowed on-site. When new chemicals are to be brought to site, Responsible Entity shall submit the SDS for approval prior to having the chemical sent to the site.

Contractor will keep copies of SDS on-site for all chemicals that have been approved.

Contractor and Responsible sub-tiers, shall make sure that all employees have ready access to SDS. Employers will require employees to read SDS for those chemicals to which they may be exposed during their work, be trained in its use and participate in its risk assessment.

Hard copies of SDS will be maintained in the areas or warehouse where chemicals are stored, and individual SDS shall be available in the work areas where the specific products are used.

Access to SDS may be provided in several ways including:

- Centrally located paper copy collections of SDS
- Computerized SDS databases

Regardless of the method for SDS storage, Contractor will verify:

- Current SDS are available
- Any storage or retrieval equipment is kept in good working order
- Personnel are trained on how to access the information
- Where information is displayed electronically, there shall be means of obtaining a paper copy of that information.

Copies of the SDSs will be reviewed during JHA or STARRT Card reviews as applicable.

7.5.1 Communication Standard of Safety Data Sheets (SDS)

It is important that all personnel who are using hazardous chemicals have access to relevant information that can assist them in the Risk Management Process. Having access to SDSs helps in that process.

The Hazard Communication Standard OSHA 29CFR 1910.1200 requires that the chemical manufacturer, distributor, or importer provide SDSs for each hazardous chemical to downstream users to communicate information on these hazards. The information contained in the SDS is largely required to be presented in a consistent user-friendly, 16-section format. This provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDSs.

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The information contained in the SDS must be in English (although it may be in other languages as well).

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., firefighting). This information should be helpful to those that need to get the information quickly. Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

The SDS must also contain Sections 12 through 15, to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

A description of all 16 sections of the SDS, along with their contents, is presented below:

- Section 1 – Identification.
- Section 2 – Hazard(s) Identification.
- Section 3 – Composition/Information on Ingredients.
- Section 4 – First Aid Measures.
- Section 5 – Fire-Fighting Measures.
- Section 6 – Accidental Release Measures.
- Section 7 – Handling and Storage.
- Section 8 – Exposure Controls/Personal Protection.
- Section 9 – Physical and Chemical Properties.
- Section 10 – Stability and Reactivity.
- Section 11 – Toxicological Information.
- Section 12 – Ecological Information. (non-mandatory)
- Section 13 – Disposal Considerations. (non-mandatory)
- Section 14 – Transport Information. (non-mandatory)
- Section 15 – Regulatory Information. (non-mandatory)
- Section 16 – Other Information.

7.6 Labelling

All containers of chemicals supplied to, used in or handled in the workplace shall be appropriately labelled to allow the chemical to be used safely.

Where a chemical is decanted at work, the container into which the chemical is decanted will be labelled with the product name and the risk and safety phrases.

Where labelling is required but the container into which the chemical is decanted is very small, the label may be attached to supporting apparatus. Alternatively, a tag may be used to enable the required information to be provided.

If Contractor or Responsible Entity finds a container that does not have a label or is improperly labelled, action will be taken to correctly label the container

If the contents of the container are not known, this will be clearly marked on the container, for example, “Caution: Do Not Use: Unknown Substance.” Such a container will be stored in isolation until its contents can be identified and, if hazardous, the container is appropriately labelled. If the contents cannot be identified, they should be disposed of in an acceptable manner.

7.7 Placarding

Placarding is required on every bulk dangerous goods storage container, at the entrance to any building in which the dangerous goods are stored in bulk and on or adjacent to every place outside a building where the dangerous goods are stored in bulk but not in a container.

Intermediate Bulk Containers (IBCs) containing dangerous goods are termed placardable units since they are a receptacle with a capacity greater than 500kg (L) and therefore need to be placarded with emergency information panels. Once an IBC has been emptied of all dangerous goods and cleaned per manufacturer/supplier’s recommendations, placarding can be removed.

7.8 Signage

Signs are to be placed in appropriate locations to provide information to those entering the area or who use the substances and for emergency response.

7.9 Disposal of Waste Products

More information for disposal of waste products can be found in EPM-KSE-PR-000002 Project Waste Management Procedure. In summary, disposal should be done through licensed subcontractor, records of receipts should be maintained.

Disposal forms should cover the following elements:

- The quantity to be disposed.
- The type of container the product is currently in.
- Conditions of the product.

8.0 RECORDS

The following records are to be retained on-site for the duration of the project. The following records shall be kept on file by the Contractor (unless noted) and made available for audit and inspection:

- Applicable training records (Contractor and Responsible Entity as applicable)
- Chemical requests (Forms and electronic record)
- SDSs (Contractor and Responsible Entity)
- Chemical Register (Contractor and Responsible Entity as applicable)
- Risk Assessments (Contractor and Responsible Entity)
- Personnel or area monitoring results (Contractor and Responsible Entity as applicable)
- The results of health surveillance programs, if medical confidentiality is maintained (Contractor and Responsible Entity as applicable).

9.0 ATTACHMENTS

N/A