European Bank
for Reconstruction and Development

# BN15
# Hazardous materials management

## EBRD briefing note

November 2026

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## Introduction

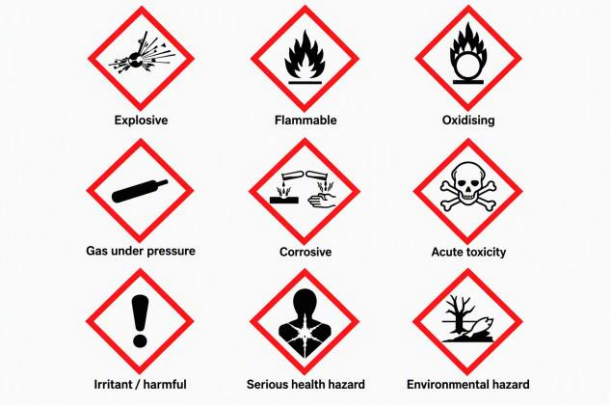
Hazardous materials are present in almost every workplace: fuels, solvents, paints, adhesives, acids and alkalis, cleaning products, pesticides, compressed gases and process chemicals, as well as hazardous substances generated by work itself, such as welding fume, silica dust, wood dust and exhaust emissions. Used and managed well, these materials are essential to the work. Managed badly, they can cause acute harm – burns, poisoning, asphyxiation, fire and explosion – and long-term disease, including occupational cancers, respiratory disease and organ damage that may appear only years after exposure. They can also cause serious harm to the public and the environment through spills, emissions and contaminated waste.

EBRD Environmental and Social Requirement 4 (ESR 4): Health, safety and security requires clients to identify hazards, assess risks and apply the hierarchy of controls to protect workers and affected communities, including from hazardous substances and materials. Related requirements on pollution prevention and resource efficiency address emissions, waste and the management of hazardous materials in the wider environment. This note sets out good international practice for the **use**, **storage** and **transport** of hazardous materials, and the central role of the **safety data sheet**. It is consistent with the EU frameworks on chemical agents and on classification, labelling and packaging (CLP/GHS), and with the ILO Chemicals Convention (No. 170) and Recommendation (No. 177).

## Classification and communication of hazards

The Globally Harmonized System (GHS), implemented in the EU through the CLP Regulation, provides a common language for chemical hazards. Suppliers must classify hazardous products, label them with standard **pictograms** (Figure 1), **signal words** ("Danger" or "Warning") and **hazard and precautionary statements** (H- and P-statements), and supply a **safety data sheet**. Workers and employers rely on this information to recognise hazards and to select the right controls.

**Figure 1. GHS hazard pictograms used on labels and safety data sheets**




Hazardous materials fall into broad groups that shape how they must be handled:

- **flammables** (fire and explosion)
- **oxidisers** (intensify fire)
- **corrosives** (destroy skin, eyes and metals)
- **acutely toxic substances** (poisoning)
- **CMR substances** (carcinogenic, mutagenic or toxic to reproduction)
- **respiratory and skin sensitisers** (asthma and dermatitis)
- **gases under pressure**
- **substances hazardous to the environment**.

Many products carry several hazards at once.

## Material safety data sheets (MSDS)

The material safety data sheet is the single most important source of information for managing a hazardous material safely. Suppliers must provide an MSDS, in the language of the country of use, for every hazardous product, and it must be kept up to date.

An MSDS is a starting point, not a risk assessment. It describes the intrinsic hazards and generic precautions; the employer must still assess how the material is used in their own workplace and decide on the controls needed. Good practice is to obtain the MSDS **before** a substance is brought on site, use it to inform the risk assessment, keep a current MSDS readily accessible to workers and emergency responders for every hazardous material held, and maintain an **inventory** of hazardous materials cross-referenced to their MSDSs. MSDSs should be reviewed when a new version is issued and at least whenever the risk assessment is reviewed.

MSDSs follow a standard 16-section format (Table 1), so that the same information is always found in the same place.

**Table 1. The 16 sections of a material safety data sheet (EU REACH format)**

| Sections 1-8 | Sections 9-16 |
|---|---|
| 1. Identification of the substance and supplier | 9. Physical and chemical properties |
| 2. Hazards identification | 10. Stability and reactivity |
| 3. Composition/information on ingredients | 11. Toxicological information |
| 4. First-aid measures | 12. Ecological information |
| 5. Firefighting measures | 13. Disposal considerations |
| 6. Accidental release measures | 14. Transport information |
| 7. Handling and storage | 15. Regulatory information |
| 8. Exposure controls/personal protection | 16. Other information (incl. revision date) |

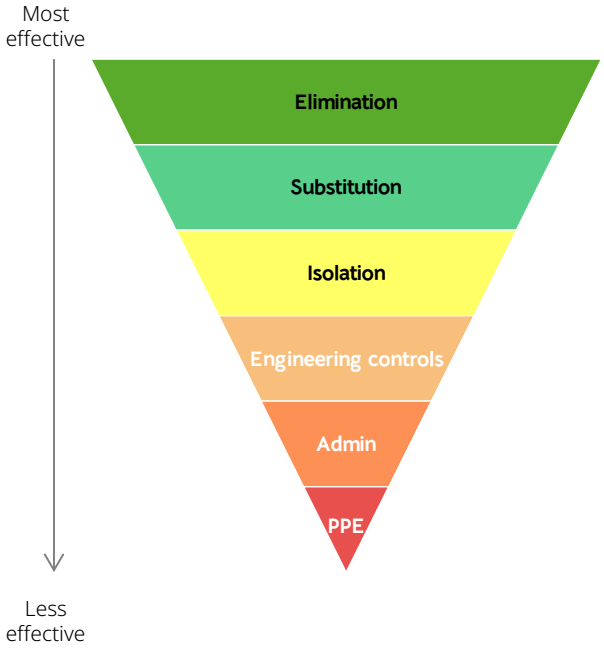
## Risk assessment

Before a hazardous material is used, a risk assessment must consider: the hazards (from the label and MSDS); who could be exposed and how (inhalation, skin and eye contact, ingestion, injection); the tasks and quantities involved; the route and duration of exposure; and any workers at greater risk, such as young workers and new or expectant mothers, and include those indirectly involved – for example, visitors, maintenance contractors, cleaners. Exposure should be determined according to occupational exposure limits, where these exist. The assessment must also consider fire, explosion, reaction between incompatible materials, and consequences for the public and environment.

## Safe use and handling

Controls must follow the hierarchy of controls (Figure 2), starting at the top and never relying on personal protective equipment (PPE) alone.

**Figure 2. Controlling exposure to hazardous substances: work from the top down**




- **Eliminate** the material or the task where possible – the most effective control of all.
- **Substitute** a hazardous material with a less hazardous one, or a safer form (for example, a paste or pellet instead of a dust, a water-based instead of a solvent-based product).
- Apply **engineering controls**, such as enclosure, local exhaust ventilation (LEV) and general ventilation to capture or remove the substance at source.
- **Administrative controls** – safe systems of work, permits, limiting quantities and the number of people exposed, good hygiene (no eating, drinking or smoking in work areas; washing before breaks) and training.
- Provide suitable **PPE** – gloves, eye protection, respiratory protection, protective clothing – selected in line with the MSDS, correctly fitted (respirators face-fit tested), maintained and

replaced. PPE is the last line of defence, not the first.

Provide first-aid and spill-response equipment appropriate to the materials, including eyewash and, where corrosives are handled, emergency showers. Where exposure to certain substances cannot be excluded, health surveillance may be required. Empty containers and contaminated materials remain hazardous and must be managed as hazardous waste through authorised routes.

Never decant a hazardous material into an unlabelled container or a food or drink container. Unlabelled decanting is a recurring cause of serious poisoning and chemical burns.

## Safe storage

Poor storage is a common cause of fires, spills and dangerous reactions. Storage should be based on the MSDS (section 7) and the following principles.

- Store the **minimum quantity** necessary, keeping bulk stock away from the work area.
- Provide a **dedicated, secure store** – ventilated, of suitable fire resistance, protected from extremes of temperature and direct sunlight, and secured against unauthorised access, theft and children.
- Provide **secondary containment (bunding)** for liquids – typically capable of holding 110 per cent of the largest container, or 25 per cent of the total volume of all containers stored within it, whichever is greater – to capture and retain spills and leaks.
- **Segregate incompatible materials**: keep flammables away from oxidisers and ignition sources; keep acids apart from alkalis and from cyanides and sulphides; keep water-reactive substances dry. The MSDS identifies incompatibilities.
- Store containers closed, upright, on suitable shelving with heavier items low down, and never in walkways or escape routes.
- Label the store and its contents clearly, display the relevant hazard signs, and keep an up-to-date inventory and MSDSs accessible nearby.
- Provide appropriate **fire protection**, spill kits and drainage that prevents contaminated run-off from reaching watercourses or drains.
- Store gas cylinders upright, secured against falling, with valve protection fitted, in ventilated areas away from heat, and segregate flammable gases from oxygen and toxic gases. Regulators should be subject to routine checks.

## Safe transport

The carriage of dangerous goods by road, rail, sea and air is tightly regulated (for example, the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) in the EBRD's regions, and equivalent modal rules). These requirements apply above threshold quantities and cover classification, packaging, marking, labelling, documentation, vehicle placarding, driver training and emergency information.

- Confirm whether a movement is subject to dangerous-goods rules and comply with the applicable modal regulations; where required, appoint a **dangerous goods safety adviser**.
- Use **approved, compatible packaging** in good condition, correctly closed, with secondary containment, where appropriate, and correctly marked and labelled.
- Carry the required **transport documentation** and emergency information (including relevant MSDSs or transport emergency information) with the load.
- Ensure loads are **secured** and **segregated** so incompatible materials cannot mix in an accident; keep quantities within limits; and keep foodstuffs separate.
- Ensure drivers and handlers are **trained** and, where required, certificated, and understand what to do in a spill, fire or accident.
- Plan for **on-site movements** too: even below regulatory thresholds, apply the same principles of compatible containers, securing, labelling and spill response. Ensure drivers are suitably segregated from contact or inhalation in the event of damage or spills in transit.

The safety data sheet underpins all three activities: section 7 governs handling and storage, section 8 governs exposure control and PPE, section 14 governs transport, and sections 4-6 govern emergencies. Obtain it first and keep it accessible.

## Emergency preparedness

Plan for foreseeable emergencies: spills, leaks, fires, gas releases and exposure incidents. Provide the right spill kits, firefighting media (matched to the materials), first-aid provision and, where needed, gas detection. Workers must know how to raise the alarm, evacuate and give first aid using the MSDS. Emergency information must be available to responders and, for larger inventories, shared with the local emergency services. Report and investigate incidents and near misses, and feed the findings back into the risk assessment.

## Summary

Before hazardous materials are used, stored or transported, confirm whether:

- there is a control in place to identify all hazardous materials brought on site
- there is an inventory of hazardous materials, each with a current MSDS accessible to workers
- a risk assessment has been completed using the label and MSDS, before the material was brought on site
- exposure controls have been selected using the hierarchy of controls, with PPE as a last resort
- materials are labelled correctly, and never decanted into unlabelled or food containers
- the store is dedicated, ventilated, bunded, secure and segregated by compatibility
- transport movements are assessed against dangerous-goods rules, with approved packaging, documentation and trained drivers
- spill, fire and first-aid arrangements are in place and matched to the materials
- hazardous waste, including empty containers, is disposed of through authorised routes
- workers are trained and health surveillance is provided, where required
- MSDSs are readily available in case of emergency
- there are arrangements in place for regular inspections, cleaning and maintenance – for instance, in connection with LEV and PPE.

# References

EBRD (2024), Environmental and Social Policy, London. Available at: https://www.ebrd.com/home/news-and-events/publications/institutional-documents/environmental-and-social-policy-2024.html.

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United Nations (2023), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and Recommendations on the Transport of Dangerous Goods – Model Regulations, Geneva. Available at: https://unece.org/sites/default/files/2023-07/GHS%20Rev10e.pdf.

See also:

- BN12: Workplace risk assessment
- BN14: Protecting the public
- BN16: Battery-powered tools

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# Annex A: Hazardous material risk assessment

Complete with a competent person and involve the workers. Mark each item Yes, No or N/A. Every "No" is a gap: record the action, owner and target date. This checklist supports, but does not replace, the full risk assessment.

## Assessment details

| | |
|---|---|
| Project/client | Site/location |
| Material(s)/activity assessed | Date of assessment |
| Assessor (name, position) | Workers consulted |

## 1. Information, inventory and classification

| No. | Assessment item | Yes | No | N/A | Action required/notes |
|---|---|---|---|---|---|
| 1 | An up-to-date inventory of all hazardous materials on site is maintained. | ☐ | ☐ | ☐ | |
| 2 | A current safety data sheet (MSDS) is held for every hazardous material and is readily accessible to workers and emergency responders. | ☐ | ☐ | ☐ | |
| 3 | MSDSs were obtained before materials were brought on site and are in a language workers understand. | ☐ | ☐ | ☐ | |
| 4 | All containers are correctly labelled with GHS/CLP pictograms, signal words and hazard statements. | ☐ | ☐ | ☐ | |
| 5 | The quantity of each material held is kept to the minimum necessary. | ☐ | ☐ | ☐ | |

## 2. Risk assessment and exposure control

| No. | Assessment item | Yes | No | N/A | Action required/notes |
|---|---|---|---|---|---|
| 6 | A risk assessment has been completed using the appropriate labels and MSDS, covering routes of exposure and who could be harmed, including those indirectly involved: visitors, maintenance contractors, cleaners. | ☐ | ☐ | ☐ | |
| 7 | Workers at greater risk (young workers, new and expectant mothers, those with relevant health conditions) have been considered. | ☐ | ☐ | ☐ | |
| 8 | Exposure has been determined according to occupational exposure limits, where these exist. | ☐ | ☐ | ☐ | |
| 9 | Controls follow the hierarchy: elimination and substitution considered before engineering controls, administrative controls and PPE. | ☐ | ☐ | ☐ | |
| 10 | Engineering controls (enclosure, local exhaust ventilation, general ventilation) are provided and maintained, where needed. | ☐ | ☐ | ☐ | |
| 11 | Good hygiene is enforced: no eating, drinking or smoking in work areas; washing facilities provided and used. | ☐ | ☐ | ☐ | |
| 12 | PPE is selected against the MSDS, correctly fitted (respirators face-fit tested), maintained and replaced. | ☐ | ☐ | ☐ | |

| No. | Assessment item | Yes | No | N/A | Action required/notes |
|---|---|---|---|---|---|
| 13 | Materials are never decanted into unlabelled, food or drink containers. | ☐ | ☐ | ☐ | |
| 14 | Health surveillance is provided where required by the risk assessment or law. | ☐ | ☐ | ☐ | |

## 3. Storage

| No. | Assessment item | Yes | No | N/A | Action required/notes |
|---|---|---|---|---|---|
| 15 | Materials are kept in a dedicated, ventilated, suitably fire-resistant store, protected from temperature extremes and sunlight. | ☐ | ☐ | ☐ | |
| 16 | The store is secure against unauthorised access, theft and children. | ☐ | ☐ | ☐ | |
| 17 | Secondary containment (bunding) is provided for liquids (typically 110 per cent of the largest container or 25 per cent of total volume of all containers stored within it). | ☐ | ☐ | ☐ | |
| 18 | Incompatible materials are segregated (flammables from oxidisers and ignition sources; acids from alkalis; water-reactive kept dry), per the MSDS. | ☐ | ☐ | ☐ | |
| 19 | Containers are stored closed and upright, on suitable shelving, clear of walkways and escape routes. | ☐ | ☐ | ☐ | |
| 20 | Gas cylinders are stored upright, secured, with valve protection and ventilated, and flammable gases are segregated from oxygen and toxic gases. | ☐ | ☐ | ☐ | |
| 21 | The store is signed and inventoried, and drainage prevents contaminated run-off reaching drains or watercourses. | ☐ | ☐ | ☐ | |

## 4. Transport (on and off site)

| No. | Assessment item | Yes | No | N/A | Action required/notes |
|---|---|---|---|---|---|
| 22 | It has been determined whether movements are subject to dangerous-goods rules (e.g. ADR), and those rules are complied with. | ☐ | ☐ | ☐ | |
| 23 | A dangerous goods safety adviser is appointed, where required. | ☐ | ☐ | ☐ | |
| 24 | Approved, compatible packaging in good condition is used, correctly closed, marked and labelled. | ☐ | ☐ | ☐ | |
| 25 | Required transport documentation and emergency information accompany the load. | ☐ | ☐ | ☐ | |
| 26 | Loads are secured and incompatible materials segregated; quantities kept within limits; foodstuffs kept separate. | ☐ | ☐ | ☐ | |
| 27 | Drivers and handlers are trained and, where required, certificated, and know what to do in a spill, fire or accident. | ☐ | ☐ | ☐ | |

## 5. Emergency preparedness and waste

| No. | Assessment item | Yes | No | N/A | Action required/notes |
|---|---|---|---|---|---|
| 28 | Spill kits, firefighting media matched to the materials, first aid and (where needed) gas detection are provided and maintained. | ☐ | ☐ | ☐ | |
| 29 | Eyewash and, where corrosives are handled, emergency showers are provided and accessible. | ☐ | ☐ | ☐ | |
| 30 | Workers know how to raise the alarm, evacuate and give first aid using the MSDS. | ☐ | ☐ | ☐ | |
| 31 | Emergency information is available to responders and, for larger inventories, shared with local emergency services. | ☐ | ☐ | ☐ | |
| 32 | Hazardous waste, including empty and contaminated containers, is stored and disposed of through authorised routes. | ☐ | ☐ | ☐ | |
| 33 | Incidents and near misses are reported, investigated and fed back into the risk assessment. | ☐ | ☐ | ☐ | |

## Assessment sign-off

| | |
|---|---|
| Assessment completed by (name) | Position |
| Signature | Date |
| Reviewed/approved by (name) | Position |
| Signature | Date |
| Number of actions raised | Next review date |

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