

Health and Safety Requirements for Fuel Handling

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1.0 Personal Protective Equipment (PPE) and first aid response procedures

Table 1 below summarises the minimum PPE required and first aid responses when dealing with personnel exposure to fuel; diesel or petrol (in liquid/ vapor form).

Body parts affected	Potential health effects	Personal Protective Equipment required	First Aid measures
Lungs	Respiratory irritation, dizziness, nausea and loss of consciousness or death in extreme exposure of large quantities of fumes and/ or over an extended period.	None <i>Where exposure is identified as a significant risk – wear FFP2/3 masks (temporary use) or a suitable cartridge respirator (contact Senior Occupational Safety Officer for any planned confined space* entry or work required).</i>	Remove personnel from further exposure (if breathing has stopped first aider to provide Cardiopulmonary resuscitation (CPR) or assist ventilation with mechanical device). Seek immediate medical attention. Personnel to Report incident in Home myCority
Skin	Irritation/ Irritant contact dermatitis. May cause dermatitis skin cancer under conditions of poor personal hygiene, prolonged repeat contact and exposure to sunlight.	Wear clean laundered clothing. <i>(In absence of work suit/ overalls) – avoid synthetic clothing material.</i>	Remove contaminated clothing, cleanse exposed skin with soap and water or commercial hand cleaners. Personnel to Report incident in Home myCority https://unhcr.my.cority.com/
Eyes	Irritant	None <i>Safety glasses/ goggles where exposure to face is a possibility (otherwise keep face away from direct splash or facing fumes in direction of wind)</i>	Flush eyes with clean running water for not less than 15minutes. Get medical assistance. Personnel to Report incident in Home myCority
Ingestion	Poisoning occurs when fuel is swallowed and may enter lungs and cause lung damage.	None <i>Avoiding use of mouth to create pipe suction force for dispensing into secondary containers or vehicles.</i>	Seek immediate medical attention. Do not induce vomiting. Personnel to Report incident in Home myCority

2.0 Fuel handling procedures (including dispensing from secondary containers)

1. Fuel dispensing shall be done in designated places only.
2. Heads of Offices must ensure that personnel involved in the handling of fuel are inducted/ trained on the Occupational Health and Safety risks associated with improper handling (see table 1 on risks and precautionary measures). Such training shall also include the prevention of fire incidents through the following: keeping product form high energy ignition sources, sparks, open flames, cigarette smoking zones.
3. Where electrical equipment and fittings are used for handling processes, they shall comply with [UNHCR Guidance on Electrical Safety](#). This includes dispensing pumps (*which need to be operated and maintained as per Original Equipment Manufacturer (OEM) requirements*) and facility installations.
4. All machinery (include mobile vehicles, pumps, and generators) must shut down before refueling can occur.
5. Offloading of fuels shall take place in ventilated areas and refueling must be away from potential high energy ignition sources. *In general, personnel are required to avoid refueling activities from storage tanks during thunderstorms.*
6. A Fit for purpose and serviced fire extinguisher shall be appropriately placed within reach by personnel handling fuel at all times.
7. PPE shall be worn while handling fuel storage when deemed necessary based on a risk assessment and examples include, wearing goggles, respirators, FFP2/3 masks, safety gloves, protective clothing and footwear is essential in handling fuel storages.

3.0 Storage requirements for fuel in fixed tanks and portable containers

UNHCR offices store/ hold bulk fuel and mainly large quantities of diesel in holding tanks and containers placed above or below ground.

Note: Holding tanks above ground can be made from reinforced plastic composite material or made of steel. Holding tanks below ground are made from steel.

The following minimum requirements are required for operations to comply to and maintain safe diesel storage facilities:

- Heads of Offices must ensure that a safe location is identified for diesel storage facilities and the location must be as far as reasonably possible from personnel, waterways, and infrastructure (based on security and fire risk assessment of location).
- Diesel holding receptacles below ground must be installed and integrity checks conducted by experts as per host country regulations.
- Diesel holding receptacles stored above ground shall be placed on top of a concrete surface or suitable impermeable lining material to prevent ground contamination. Bulk storage facilities holding 500litres or more are recommended to be within a bund wall to allow for controlled containment in the event of a spillage.
- It is recommended that any above ground storage facility be covered from harsh weather elements. In this case suitable shade such as netting or non-flammable roofing material can be used. Access to the top of overhead tanks e.g., to use the dip stick shall be minimized where applicable. External

reading gauges are recommended. The risk of fall shall be minimized by use of a fixed ladder or handrails. The area shall be cleaned to avoid slips from fuel spillages.

- To facilitate the dissipation of electrical and static charge, protection of storage tanks must comply with host country regulatory requirements, which may include installation of appropriate grounding vessel system.
- Portable containers holding quantities less than or equal to 100 litres per container shall be considered as temporary diesel carriers or holders. The conditions for placement on concrete or impervious lined ground surface as well as covering from weather elements must apply. The storage of diesel in portable containers must be in well-ventilated area, away from waterways and infrastructure, and with a fire extinguisher located in proximity.
- Signages and labels will be used these include:
 - Information signs - Label fuel type kept and the storage capacity of the holding tank and switch off sign for dispenser.
 - Warning signs – no smoking and no open flames

4.0 Maintenance requirements at fuel storage areas

Large quantities of fuel (mainly diesel) stored, pose a significant fire risk potentially causing harm for UNHCR personnel and facilities. To proactively manage risks the following measures must be applied at a minimum:

- Heads of Offices to implement measures for conducting daily inspections to identify any fuel loss of containment and ensure remedial measures such as cleaning spills and contaminated soil are taken,
- Heads of offices to ensure that electrical works at diesel storage facility are done by a competent person as per host country regulations and comply to UNHCR Guide on Electrical Safety,
- Management of contractors engaged shall follow the [Guidance on OHS requirements for contractors](#)

Prohibition notice to all offices having diesel storage areas in their locations.

- *No hot work or spark generating work shall be done without consultation with the Senior Occupational Safety Officer.*
- *No entry into a confined space* (empty tank being prepared for diesel storage or previously containing any organic solvent) shall be done without consultation with the Senior Occupational Safety Officer.*
- *Confined Spaces where diesel can be stored - can include unventilated rooms, storage containers, dug out bunkers/ tunnels and tanks (usually with one restricted entrance and no means of egress). These are oxygen depleted or enriched spaces, possible toxic and or flammable atmosphere i.e., gas fumes, vapour produced from diesel stored and any hot work or chemical reactions.*

5.0 Accidental environmental spillage measures.

Staff shall ensure all leaking containers are not used. All spillages to be immediately cleaned and contained on-site. Spills must not be allowed to drain into waterways, stormwater or sewerage infrastructure. Heads of Offices shall ensure residue spilled onto the ground surface handled as suggested below.

The following measures shall apply where applicable, in the event of a spillage:

- Eliminate sources of ignition. Warn building occupants of fire and explosion hazard and warn them to stay clear.
- Personnel attending the spillage should be in appropriate protective (PPE) clothing.
- Stop and contain the spill using appropriate dry and absorbent material and bunding. These materials are commonly found in spill kits, and it is recommended that spill kits are pre-purchased, popularized to personnel, and stored in easily accessible locations.
- Recovered spillage should be treated as hazardous waste and disposed of accordingly.
- Where evidence of ground contamination is evident, soil from sand buckets can be used to soak liquid diesel and prevent runoff.
- Operations are required to report spill/ releases to UNHCR Greening and Sustainability Team for further assistance and report to relevant environmental management authorities in line with host country regulations when contaminations have occurred.
- Procedures in place for personnel to report incidents in Occupational Safety myCority: [How should safety incident reporting be done? \(unhcr.org\)](#)

6.0 Fire prevention and control requirements

Heads of Offices must include fuel (diesel/ petrol) storage and handling areas as part of the Security Management Manual and document recommended Fire Safety Risk Assessment and inspections.

1. Appropriate fire extinguishing media based on risk assessment shall be installed. The extinguishing media that can be put in place can include Aqueous Film Forming Foam (AFFF) and dry chemical powder. The fire **extinguishers** shall be placed under a scheduled service by experts and monthly inspections conducted by security personnel in operations.

Note: Avoid use of water as an agent to fight diesel fires - water has high density than diesel and occupies space below burning diesel liquid and carries it to other structures in proximity and causing more harm or damage.

2. Operations shall implement preventative measures on exposures to open flames and uncontrolled electrical discharge at diesel storage and dispensing areas as an efficient way of preventing an easily preventable fire from breaking out. This can be done by;
 - Due to different flashpoint and autoignition temperatures, different fuel types, i.e., diesel, petrol, and JET-A-1 should not be stored in the same area.
 - Ensuring that personnel are inducted on hazards associated with open flames from smoking and electrical discharge from portable battery powered electrical devices i.e. cell phones near storage areas.
 - Ensuring that personnel do not wear synthetic clothing which can generate static electricity.
 - Personnel to participate in regular evacuation drills on response procedures in case of a spillage or fire outbreak.