



WORKPLACE SAFETY AND HEALTH NOTICE (WSHN)

TOPIC RISKS ASSOCIATED WITH FILLING PORTABLE JERRY CANS AND EXTERNAL CONTAINERS WITH LIQUID FUEL AT PETROL SERVICE STATIONS		Reference Number 2022/WSHN/03	
Approved by: Director of Compliance and International Affairs Division	Issue date: 08 November 2022	Expiry date: None	Revision No: 0

The Safety, Health and Environment National Authority (SHENA) would like to remind all principals, employers, occupiers, self-employed persons and persons at work to be aware of the risks associated with filling portable jerry cans and external containers such as 200L steel drums with liquid fuel at petrol service stations and to take the necessary safety precautions to avoid fires from occurring at these workplaces, which can cause serious injuries, and create fire and/or explosions. Many of the fire incidents that occurred at petrol service stations involved people filling up portable jerry cans and external containers.

In a recent incident reported to SHENA on 29th April 2022, a fire spontaneously ignited at a petrol service station in the Brunei-Muara district when a petrol service station worker was filling Gasoline (RON88) into a portable jerry can at the back of a pick-up truck. There were no serious injuries sustained. The fire incident was caused by the buildup of static electricity created during the filling of the fuel into the container. The spark created from the static electricity caused an ignition that led to a flash fire. The jerry can was found not grounded during the filling. Hence, the static electricity created could not disperse safely.

SAFE STEPS FOR FILLING PORTABLE JERRY CANS AND EXTERNAL CONTAINERS

SHENA in collaboration with Brunei Shell Marketing (BSM) strongly urges motorists to avoid the risk of fire by placing portable jerry cans on the ground when filling them. When handling flammable liquids, caution is required to ensure the liquid does not cause a reaction that can result in ignition.

It is very important to remove the jerry can from the vehicle prior to filling it with liquid fuel and place it on the ground about 1.5 metres from the vehicle. The vehicle's engine must be switched off before the filling starts and remained off until the filling is completed, and the container is properly sealed. When filling an external container, the use of a bonding clip is required during the filling process.

Vapours from liquid fuel can also be ignited by static electricity from other sources. Ignition of flammable vapours can easily occur if the container is held off the ground during the filling process, or by a reaction involving electric devices or equipment within the vicinity of the vehicle.

When filling a portable jerry can or external container at a petrol service station, it is important to adhere to the following safe practice:

- Always place the portable jerry can on the ground to earth it during refilling and keeping it away from ignition sources.
- Never fill the portable jerry can inside the vehicle, within a trailer or boot, or on a truck bed. The jerry can or containers will not be able to be firmly grounded and the process of flowing liquid fuel into the containers will create static electricity which could lead to creation of sparks by the fuel dispenser nozzle and ignition of the fuel vapours.
- Always keep external containers earthed by connecting a 'bonding' clip and wire to the container and pump during filling and keep it away from any ignition sources.
- Before filling the jerry can or external containers, always touch the metal surface of your vehicle to discharge any static electricity on your body. Keep the fuel dispenser nozzle in contact with the containers and fill slowly to minimise the build-up of static electricity.
- Only fill the jerry can or external container up to 95% maximum capacity to allow room for expansion and allow for safe manual handling.
- Always conduct the fuel filling process under the supervision and ensure hands are on the nozzle; never use the nozzle trigger lock for filling the jerry can or external container.
- Use ONLY APPROVED jerry cans and external containers that meet UN/UL standards and ensure they are in good condition.
- Ensure the container is properly sealed after filling.
- Avoid leaving jerry cans in the vehicles exposed to direct sunlight and for a prolonged period.
- Transport external containers upright, away from heat sources and in a well-ventilated space as the fuel fumes are flammable. It is also advised to carry the container in the back of a pickup vehicle, in a trailer or on a roof rack where the area is well secured and well away from ignition sources or potential impact zones.

5 QUICK REFERENCES ON SAFE PRACTICE

1. Place the jerry can grounded before filling to provide a path that dissipates static charge to the ground.
2. Always connect the 'bonding' clip to the drum and pump during filling to provide a path that dissipates static charge to the ground.
3. Fuel dispenser nozzle always in contact with the jerry can or external container inlet during filling.
4. Place the dispenser nozzle into the metal funnel ensuring the funnel tip touches the base of the external container to dissipate static charge buildup from the flow of fuel liquid.
5. Before filling, always observe the safety notices and signages displayed at petrol service stations on portable container fueling rules.

BSM has also published a Site Safety Card which includes an illustration and instructions on safely filling in the jerry can as in **Figure 1** below.



CONCLUSION

The severity of the fire incident occurring on 29th April 2022 together with the key findings from the incident has led SHENA to highlight the need to increase safety awareness, knowledge and competency level in managing refueling activities involving filling liquid fuels into portable jerry cans and external containers at petrol service stations in Brunei Darussalam. Conducting of risk assessment on the related activities is mandated which will allow petrol service stations to put the necessary controls in place.

All principals, employers, occupiers, self-employed persons and persons at work are hereby reminded to adhere to the Workplace Safety and Health Order, 2009 and its regulations at all times. The Law ensures that those creating the risks must reduce those risks to persons (employees and public), assets and the environment, to As Low As is Reasonably Practicable (ALARP).

Should there be any questions concerning this Workplace Safety and Health Notice please contact SHENA at +673 238 2000 or email info@shena.gov.bn SHENA would like to thank all stakeholders for their cooperation in ensuring Brunei Darussalam is a safe place to work and live.

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