

FACT SHEET

Nov 2011

Fire and Safety Issues

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- Material Safety Data Sheets (MSDS) must be (centrally) available in all areas where alcohol-based hand hygiene products will be provided.
- All alcohol-based hand hygiene products are flammable with flash-points ranging from 21°C to 24°C, depending on the type and concentration of alcohol present.
 - Generally the product would only ignite if there is an external ignition source (eg., a flame or spark)
 - Auto-ignition is the lowest temperature at which a substance will spontaneously ignite in a normal atmosphere, without an external source of ignition. The auto-ignition point of ethanol is 363°C; given this it is safe to leave an alcohol based hand hygiene product in cars when used in the community setting
 - Such products have a Packing Group II (PG II) classification as per Australian Standard AS 1940-2004 – The Storage and Handling of Flammable and Combustible Liquids.
- Alcohol-based hand hygiene products should be stored away from high temperatures or flames in accordance with recommendations of the Queensland Health Occupational Health and Workplace Safety Unit (28 April 2010):
 - Alcohol-based hand hygiene products can be installed in patient rooms, procedure areas, staff areas (e.g. staff station) and corridors of healthcare facilities.
 - The maximum size of an individual alcohol-based hand hygiene product dispenser fluid capacity is not to exceed 1L.
 - The minimum size of an individual alcohol-based hand hygiene product dispenser fluid capacity shall not be less than 50mL. Pocket-sized carriage bottles of alcohol-based hand hygiene products are now available for use within Queensland Health including the Community setting.
 - Not more than a total of 20L of alcohol-based hand hygiene product shall be installed within a single smoke compartment, and the total quantity of all flammable liquids (including hand hygiene products) is not to exceed 10 litres per 50m² of floor space.
 - Corridors must have at least 180cm of clear width with alcohol-based hand hygiene dispensers spaced at least 150cm apart.

- Alcohol-based hand hygiene dispensers should not be installed in carpeted corridors unless the corridors are sprinkler protected.
- Dispensers must not project more than 15cm into corridor egress width.

In all locations, alcohol-based hand hygiene dispensers must not be located over, or directly adjacent to, ignition sources including electrical receptacles and switches such as power points, light switches, nurse call buttons, monitoring equipment and other electrically powered equipment or devices.

The introduction or use of mobile electrical equipment within the immediate location of alcohol-based hand hygiene dispensers should be avoided.

Alcohol-based hand hygiene dispensers should not be indiscriminately placed in locations which the public (and children) may access/use the product, without adequate staff supervision and training safe guards in place.

Instruction for use signage is required, however this alone is not considered adequate for public use.

Supplies of alcohol-based hand hygiene products must be stored in cabinets or areas approved for flammable material consistent with Australian Standard AS 1940-2004 – The Storage and Handling of Flammable and Combustible Liquids.

- When considering the requirements for minor storage, the total quantities of all flammable liquids (not just alcohol-based hand hygiene products) must be considered.
- Minor storage of all flammable liquids is not to exceed 10 litres per 50m² of floor space (AS 1940-2004, Section 2, Table 2.1).

Electric Beds

Hand hygiene dispensers must be located in a position that does not allow the liquids or gels to spill or leak into the mechanisms or electrics. There must be a sensible separation from heat sources and electric motors.

Other Safety-related Issues

Accidental ingestion and dermal absorption of alcohol-based preparations for hand hygiene have been reported. Whilst reliable investigations have demonstrated that the amount of alcohol absorbed through intact skin is negligible on the toxic level for human beings, alcohol toxicity does occur after ingestion.

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- Signs and symptoms of alcohol intoxication include headache, dizziness, lack of coordination, hypoglycaemia, abdominal pain, nausea, vomiting and haematemesis. Signs of severe toxicity include respiratory depression, hypotension and coma.
- In patient care areas where there is a risk of ingestion of the alcohol-based hand hygiene product (e.g. inpatient mental health or substance abuse treatment areas), local clinicians need to use discretion in their use of these products.
- Alcohol-based hand hygiene dispensers should not be placed above or at eye level (to avoid the risk of adverse events).
- No hand hygiene product should be decanted due to the risk of contamination.
- **Rub hands together after application of the alcohol-based hand hygiene product until all the alcohol has evaporated** before engaging in other activities, to reduce the (extremely low) risk of flash fire from static electricity generation.
- Avoid the use of alcohol-based hand hygiene products and 100% polyester gowns and drapes unless they have an antistatic carbon fibre or an antistatic finish.
- Containers should minimise evaporation due to the volatile nature of alcohols
- Paediatric/Children's wards:
 - Dispensers of alcohol-based hand rubs should be placed out of reach of children.
- Water flow will flush contaminating bacteria but will not remove biofilms hence the requirement for regular maintenance which will vary depending on the 'quality' of the water from the source and the distribution pipes.

Water for handwashing

Both too hot and too cold water can damage the skin of hands.

- Warm (27-35°C) running water is preferable for retaining skin integrity.

There are various statements published about the volume of water required for effective handwashing.

- A flow rate of 9 litres per minutes is required to adequately remove pathogens from the hands of HCWs. This equates to approximately 4.5 litres for a 30 second handwash.

Bacteriological quality of handwashing water:

- Aerators (if present) need to be regularly replaced to ensure adequate flow and removal of blockages which will promote growth of contaminating bacteria.