



Suggestions for inclusion in Risk Assessment for dry ice

1 = low 5 = high

Ref 11/10/18

Activity	Hazard	Action	Harm	Likelihood	Risk Rating	Risk Acceptable
Choice of cold agent: liquid Nitrogen or dry ice.	Swallowing cold agent leading to internal injuries. Liquid N2 (LIN) is -196C Dry ice is -79C. LIN boils very rapidly on heating leading to massive volume expansion.	Do not use LIN in drinks or food. Dry ice is much safer as it is warmer and turns to a gas slowly. Supply dry ice in pellet form so that dosing also provides a measure of control. As dry ice is a solid it can be caged in safety equipment like that sold by chillistick so that there is no chance of swallowing dry ice when used correctly.	5	0	0	Yes
Dry ice supply	Non-food grade dry ice can be contaminated leading to potential injuries and poisoning.	Only use food grade dry ice and obtain written statement from supplier that only food grade dry ice is being used.	4	0	0	Yes
Before Use	General	Prepare a hazard and COSHH assessment and any other documentation that is required by law and good practice – seek advice from your licensing officer. These notes are intended as a guidance - conditions and uses specific to your venue must be taken into account here.				
Delivery of dry ice	Broken container leading to potential risk of frostbite from prolonged contact with naked skin.	Only trained operators to open dry ice package. Dry ice packages sent to venue will be marked appropriately to alert Goods-In staff. If box is damaged beyond use, i.e. it is no longer a safe container then do not use product and contact chillistick for replacement. Only use thick wall delivery boxes – at least 30mm. Provide pair of “gardening” or “utility” gloves for operator to use in the event of a damaged container.	3	1	1	Yes
Storing Dry Ice	Uncontrolled access to dry ice container	Always keep dry ice container in the same pre-agreed location. Ensure access is limited to trained staff. Please complete form similar to that suggested at end of this document.	3	1	1	Yes

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Removing dry ice from storage container	Frostbite from prolonged exposure	Always use lightweight gloves (supplied with ice) to load Chillistick products. Chillistick free issue gloves are intended for the handling of one to two pellets at a time and provide compromise between insulation and dexterity. Never touch dry ice with bare hands. If using Ice Pour decant dry ice from poly box using appropriately sized scoop, available from Chillistick Ltd.	3	1	1	Yes
Creating CO ₂ gas from smoke machines	Asphyxiation due to high concentration of CO ₂ .	Check venue has adequate working air conditioning or has other good ventilation. Ensure fog creation takes place so that no more than 20kg of dry ice are sublimed over a period of one hour in a typical bar. Short term CO ₂ gas exposure limit is 27,400 mg/m ³ (15 minutes) long term exposure limit = 9,150 mg/m ³ (8 hours). In case of doubt contact Chillistick before use.	4	1	1	Yes
Generating CO ₂ gas as a result of using chillistick products.	Asphyxiation due to high concentration of CO ₂	Due to small amounts of dry ice being used this is not considered an issue - more CO ₂ is likely to be released from serving carbonated drinks over an evening. Check venue has adequate ventilation, and please see comments above.	4	0-1	1	Yes
Using damaged ChilliStick stirrer or IceBreaker shot glass.	Ice leaves safety container and could be swallowed	Only trained operators to open dry ice package. Dry ice packages sent to venue will be marked appropriately to alert Goods-In staff. If box is damaged beyond use, i.e. it is no longer a safe container then do not use product and contact Chillistick for replacement. Only use thick wall delivery boxes – at least 30mm. Provide pair of “gardening” or “utility” gloves for operator to use in the event of a damaged container.	4	1	1	Yes
Accidental spillage of dry ice	Someone picks up dry ice with bare hands - risk of frostbite.	Each shift has one named person responsible for dry ice; see form at end of this document. Use Ice Pour or similar storage device to avoid possibility of breaks and spills. Provide gardening and utility type gloves for staff. These are <u>NOT</u> the blue ones issued for loading Chillistick hardware.	3	1	1	Yes
Putting ice in drinks 'naked' or placing in airtight containers.	Risk of frostbite, explosion.	Never put dry ice in drinks other than inside an approved safety device such as the Chillistick, IceCage, IceBreaker etc. Never 'play' with dry ice, or place in sealed containers. Please note that the Ice Pour is designed so that it cannot be sealed.	4	1	1	Yes

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Members of public handling dry ice	Risk of frostbite.	The devices provided contains the dry ice in a reasonably secure manner and would require concerted effort to reach. Ice cage and other chillistick products are designed to create maximum impact in a small time, and so the dry ice is dissipated within 60 - 120 seconds. Keep dry ice container at back of bar so public cannot access.	2-3	2-3	0-1	0-1
Transporting dry ice	Risk of asphyxiation	Where possible store dry ice in a separate compartment isolated from the driver. If this is not possible, always ensure that fresh air vents are open and that the window is also partially open. Always store dry ice in well-insulated box.	4	1	1	Yes
Disposal	General	Any unwanted dry ice will sublime naturally, leave in a secure well ventilated space.	1	1	1	Yes
Creating fog effect using dry ice	Staff or customers touch dry ice with no protection potentially leading to frostbite if contact is prolonged	Use safety devices which separate customers and users from the dry ice. The IceCage, Chillistick, IceBreaker and FogMaker are all designed to provide a barrier. As an example the IceCage is filled by pouring a small amount of dry ice pellets via a funnel loader through a one-way safety valve into the IceCage. This process does not require any touching of the dry ice. When the loader is removed the valve springs shut and the ice can only leave the IceCage by evaporation (sublimation). The system is designed so that the outside of the IceCage will not cool substantially due to the insulation provided by the polycarbonate and heat transfer from the surroundings. It is recommended that the IceCage is used immediately after it has been filled. IF a large quantity of IceCages are being used it may be efficient to pre-load and store the Cages in the dry ice box prior to use. In this unusual case the IceCage surface will be substantially chilled and staff/users who will be handling the IceCage should be issued with gardening/utility gloves to prevent any risk of frostbite.	4	1	1	Yes

Shift – day / time	Person responsible for dry ice	I have read and understand all relevant safety notes including this hazard assessment. Signed: