**DRY ICE (Solid Carbon Dioxide) SUPPLY NOTE**

**University of Glasgow**

The University of Glasgow is willing to supply modest quantities of dry ice to schools as part of the Elementary cloud chambers project, supported by IOP and SSERC, at no charge to schools.

This supply must happen under the safety regulations distributed by SSERC (*Solid CO2 'Dry Ice' Safe Handling document. For use when collecting dry ice from Universities on behalf of a School*). The University is keen that no person’s safety be put at risk, and cannot accept any responsibility for what is done with the dry ice once it is given to a person for use in schools. The person collecting the dry ice must provide a signed copy of the SSERC form. If the dry ice is to be transported in a vehicle the company insuring the vehicle should be informed.

Those wishing to obtain dry ice should in the first instance contact Dr Aidan Robson in the School of Physics and Astronomy at the University of Glasgow, aidan.robson@glasgow.ac.uk . He will provide information on how to collect the dry ice from the University.

The person must also pick up a copy of the Material Safety Data Sheet.



**Solid CO2 'Dry Ice' Safe Handling document.**

**(For use when collecting dry ice from Universities on behalf of a School)**

**This document is to be read, signed and given to the University or Organisation from which you are collecting the Dry Ice. You should also take a copy of your risk assessment. Universities may request that you have notified your car insurance company and request evidence of this to be shown on collection.**

**This document is NOT a replacement for a Risk Assessment. It is the responsibility of the teacher/STEM ambassador to write a risk assessment; a generic version is available from the SSERC website and should be adapted to suit the needs of your lesson/event.**

There are two main hazards when dealing with dry ice (solid carbon dioxide):

1. It is very cold and can cause burns
2. It can release large amounts of carbon dioxide gas leading to the possibility of asphyxiation

**Transport**

If possible, put the container of dry ice in a separate compartment from the driver or passengers, eg in the boot of a saloon car. Make sure the container is well insulated, but **NOT** sealed. Ensure that there is adequate ventilation in the car, ie forced air from outside using fan (not recycled air), and/or an open window. If the dry ice is in the same compartment as the driver or passengers, the windows must be open to allow good ventilation.

Dry Ice UN1845 label should be attached to container with a quantity. (label at bottom of document to tear off and attach)

The container should be well-secured to prevent it falling over, which could lead to spillage and result in possible burns and increased production of asphyxiating gas.

Dry ice should **only** be collected and transported in a suitable container. Such a container should be:

Sturdy

**NOT** made of metal [unless a specially designed Dewar flask]

Well-insulated

With a lid but **NOT** sealed.

Large enough to comfortable hold the amount of dry ice being collected/transported.

**Storage**

If you are storing dry ice, it needs to be stored somewhere that is secure, out of direct sunlight and away from sources of heat.

**Do not** store it in a working freezer or refrigerator.

A chemical store might be a suitable location, or in a ducted (not recirculatory) fume cupboard in a secure prep room or classroom.

**Handling**

Avoid direct contact with the skin as dry ice can cause severe burns. Leather gloves not rubber to provide thermal protection, and eye protection should be worn.

Do **NOT** place the solid in a closed, airtight, container as pressure can build up and cause an explosion.

Be very careful if wearing metal jewellery (including watches) when handling dry ice. If metal objects come into contact with the dry ice they can become extremely cold very rapidly, leading to burns.

**Disposal of Solid CO2**

Solid CO2 will sublime into large quantities of CO2 gas. Therefore, to dispose of excess it should be left to sublime in a non recirculatory (ducted) fume cupboard. Alternatively you could leave to sublime outdoors although consideration will have to made to the security of the location in your risk assessment.

**First Aid**

In case of accident, first assess the situation and do not put yourself in danger. Ventilate the room by opening door(s) and windows. Then assess casualty.

Eyes – For solid in the eyes irrigate with water for at least 10 minutes and seek medical attention.

Mouth – wash out mouth thoroughly with water

Lungs – Move the patient away from the area of exposure. Rest and keep warm. Obtain medical attention.

Skin – Treat as a serious burn. Do **not** remove clothing on exposed area until the area is thawed. Place under running cold-water tap. If the skin is burned, place the affected area in a water bath at 42 – 45C. NEVER use dry heat or hot water to treat burns. Cover burn with dry lint-free dressing or cling-film. If the affected area is greater than the size of a 10 pence piece the casualty should be taken to hospital.

**I have read and understand the above safe handling information and have created my own Risk Assessment. I fully accept that it is my responsibility to handle the Dry Ice in a safe manner that will not endanger me or others. The organisation I am collecting this from will not be responsible for how I handle the dry ice nor my safety once collected. I understand I may be refused supply, should they believe these guidelines have not been adhered to.**

**Name of University – University of Glasgow**

**School where dry Ice will be used –**

**Name of person collecting –**

**Signature –**

**Date –**

 UN1845 Solid Carbon Dioxide (CO2),

Quantity - kg