DRY ICE: SAFETY DATA SHEET & RISK ASSESSMENT

What is Dry Ice?

Dry Ice is frozen carbon dioxide. Unlike most solids, it does not melt into a liquid, but instead changes directly into a gas. This process is called sublimation. The temperature of dry ice is around -109° F! It melts very quickly so we will only unpack the dry ice as we prepare for the first dance.

Dry Ice – Company Safety Rules:

1) Dry ice can cause serious injury if not used carefully! We will not allow clients, children, guests or venue staff to handle the dry ice. The Dry Ice must only be handled by Equinox-Storm personnel.

2) The Dry Ice will not be stored in an airtight container. As the dry ice melts from a solid directly into a gas, the gas will build up in the container until it bursts. The Dry Ice will be stored in a styrofoam box with a loose fitting lid.

3) Never place dry ice in an unventilated room or car. If you are travelling with dry ice in the car, open a window. Same rule applies if you are in a small room, open a window. You do not want too much carbon dioxide gas to build up around you.

4) Do not touch dry ice with your skin as the temperature of dry ice is so cold, it can cause severe frostbite. If you suspect you have frostbite seek medical help immediately. You will notice the special effects technician using the following safety equipment.

1. The Safety Goggles should be worn when unpacking the Dry Ice and loading the Dry Ice into the Peasouper basket.
2. The Protective Gloves should be worn when unpacking the Dry Ice and loading the Dry Ice into the Peasouper basket.
3. The Dry Ice should only be transferred from the packaging to the Peasouper basket using the metal scoop.

5) Never eat or swallow dry ice! Again, the temperature of dry ice is very, very cold. If you swallow dry ice, seek medical help immediately. We will not place dry ice directly on countertops or any venue surface. The cold temperature could cause the surface to crack.

6) Never lay down in, or allow anybody to lay down in the dry ice cloud. The clouds are made of carbon dioxide gas. People could suffocate if they breathe in too much gas at once. Please ensure that your children are supervised. Leave the area immediately if you start to

pant or have difficulty catching your breath. This is a sign that you have breathed in too much carbon dioxide gas.

7) Please stand clear of the special effects technician when the dry ice is being loaded into the Peasouper machine at the start of the first dance. The Peasouper machine will contain boiling water.

8) Never cut corners when using Dry Ice! Always use the safety equipment supplied.

Disposing of Dry Ice:

To dispose of dry ice, place in a well ventilated container and take it outside where small children and pets cannot reach it. Simply let it sublimate away! The Peasouper machine should be allowed to run out of Fog. This will ensure that all of the Dry Ice has melted and there will not be any need for disposal. The Peasouper should be allowed to cool down for the duration of the event and then the warm water should be carefully disposed of outside of the venue.

1. IDENTIFICATION OF THE

SUBSTANCE AND OF THE COMPANY

Product Name: Dry Ice (Solid Carbon

Dioxide)

Chemical Formula: CO2

Company Identification: Equinox-Storm

Emergency Phone Nos: 01933 312880, 07767 811110

2. COMPOSITION/INFORMATION ON

INGREDIENTS

Substance / Preparation: Substance

Components / Impurities: Contains no

other components or impurities, which will

influence the classification of the product.

CAS Nr: 00124-38-9

EEC Nr (from EINECS): 2046969

3. HAZARDS IDENTIFICATION

Hazards Identification: Solid. Contact with

product may cause cold burns or frostbite. In high concentrations sublimed vapour may cause asphyxiation.

4. FIRST AID MEASURES

Inhalation of Sublimed Vapour: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO_2 caused increased respiration and headache. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Skin / eye contact with Dry Ice: Immediately flush eyes thoroughly with water for at least 15 minutes. In case of frostbite spray with tempid water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

5. FIRE FIGHTING MEASURES

Specific Hazards: Non flammable

Hazardous combustion products: None

Suitable Extinguishing Media: All known

extinguishants can be used

Specific Methods: Water on Dry Ice (Solid

Carbon Dioxide) increases sublimation.

Higher risk of asphyxiation.

Special Protective Equipment for Fire

Fighters: In confined space use selfcontained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate area. Use

protective clothing. Wear self-contained

breathing apparatus when entering are

unless atmosphere is proved safe. Ensure

adequate air ventilation.

Environmental Precautions: Try to stop

release. Prevent from entering sewers,

basements and workpits, or any place

where its accumulation can be dangerous.

Clean Up Methods: Ventilate area.

7. HANDLING AND STORAGE

Handling and Storage: Use only properly

specified equipment which is suitable for

this product. Contact your supplier if in

doubt. Refer to supplier’s container

handling instructions. Keep container in a

well ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit: UK: STEL; 15000ppm;

LTEL: 5000ppm

Personal Protection: Ensure adequate ventilation. Protect eyes, face and skin from contact with product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight:44

Melting Point: -56.6oC

Boiling Point:-78.5(s)oC

Critical temperature: 30oC

Relative Density, gas: 1.52 (air = 1)

Relative Density, liquid: 1.03 (water = 1)

Relative Density, solid: 1.87 (water = 1)

Vapour Pressure 20oC: 57.3 bar

Solubility mg/l Water: 2000mg/l

Appearance/Colour: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10. STABILITY AND REACTIVITY

Stability and Reactivity: Stable at atmospheric pressure and –78oC. At normal temperatures product sublimes into Carbon Dioxide gas. Contact with solid can cause embrittlement of structural

materials.

11. TOXICOLOGICAL INFORMATION

General: Low concentration of sublimed vapour cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness.

12. ECOLOGICAL INFORMATION

General: When discharged in large quantities may contribute to the greenhouse effect. Can cause frost damage to vegetation.

13. DISPOSAL CONSIDERATIONS

General: Do not discharge into any place where its accumulation could be dangerous. Discharge to atmosphere in large quantities should be avoided. Contact supplier if guidance is required.

14. TRANSPORT INFORMATION

UN Nr: 1845

Class/Div: 9

ADR/RID Item Nr: Not specified

ADR/RID Hazard Nr: Not specified

Teamcard Nr: Not specified

Groupcard Nr: Not specified

Labelling ADR: No Label Required

Other Transport Information: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured and:

- adequate ventilation
- compliance with applicable regulations

Contact with product may cause cold burns or frostbite.

15. REGULATORY INFORMATION

Number in Annex 1 of Dir 67/548:Not included in Annex 1

EC Classification: Proposed by the industry. Not classified as dangerous substance.

Labelling of containers

- Symbols: Labels: Not Specified
- Risk Phrases: Ras Asphyxiant in high concentrations.

RFb May cause frostbite.

- Safety Phrases: S9 Keep container in well ventilated place.

S23 Do not breathe the gas.

S36A Use suitable protective equipment.

16. OTHER INFORMATION

Ensure all national/local regulations are observed. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product on any new process or experiment, a through material compatibility and safety study should be carried out. Details given in this document are believed to be correct at the time of going to print. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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