Safety Data Sheet (SDS)

GENERIC EU MSDS – NO COUNTRY SPECIFIC DATA – NO OEL DATA
According to Regulation (EC) No 1907/2006 (REACH)

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name: Dry Ice

Product SKU: N/A

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture: N/A

1.3 Details of the supplier of the safety data sheet

Company Name: Empire Genomics Corp.

Address: 3370 Walden Avenue, Suite 114

Depew NY 14043 USA

Telephone: +1 716 856 3873

Fax: +1 716 431 3440

Email: info@empiregenomics.com

Internet: www.empiregenomics.com

1.4 Emergency telephone number

Telephone: +1 716 856 3873

9AM – 5PM (EST)

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008

Hazard categories:

Not applicable.

Hazard Statements:

Not applicable.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008

Hazard pictograms: Not applicable

Signal Word: Not applicable.

Hazardous ingredients: Not applicable.

Hazard statements: Not applicable.

Precautionary statements: Not applicable.

2.3 Other hazards

Refrigerated solidified gas. Contact with skin may cause cold burns or frostbite.

3. Composition/information on ingredients

3.1 Substance

Hazardous components

Name	CAS #	EC #	%	Classification
Carbon dioxide, solid (Dry Ice)	124-38-9	204-696-9	100	Not classified

3.2 Mixture

Not applicable.

4. Composition/information on ingredients

4.1 Description of first aid measures

After inhalation

Move to fresh air. If breathing is difficult, administer oxygen. Consult a physician. If not breathing, begin CPR and seek medical attention. Keep person warm and at rest.

After contact with eyes

Immediately flush eyes with warm water for at least 15 minutes. Hold the eyelids open and away from eyeballs to ensure that all surfaces are flushed thoroughly. Consult a physician, preferably an ophthalmologist immediately.

After contact with skin

Immediately warm frostbite area with warm water not to exceed 40°C. In case of massive exposure, remove contaminated clothing while showering in warm water. Consult a physician.

After ingestion

May cause severe burns. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

After inhalation: May cause asphyxiation.

Symptoms may include loss of mobility/consciousness.

Low concentrations of CO_2 cause increased respiration and headache.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Not applicable.

5.2 Special hazards arising from the substance or mixture

Not applicable.

5.3 Advice for firefighters

Not flammable. Use media appropriate for surrounding fire.

6. Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

General measures

Wear respirator and cryogenic gloves.

6.2 Environmental precautions

Not applicable.

6.3 Methods and material for containment and cleaning up

Do not walk on spill site.

Evacuate all personnel from danger area.

Test for sufficient oxygen, especially in confined spaces, before allowing re-entry.

6.4 Reference to other sections

Safe handling: See Section 7

Personal protection equipment: See Section 8

Disposal: See Section 13

7. Handling and storage

7.1 Precautions for safe handling

Should be handled by appropriately trained laboratory personnel only.

Wear gloves when handling.

Avoid contact with skin and eyes, avoid inhalation or ingestion.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: Do not store in tight containers or confined spaces.

7.3 Specific end use(s)

No additional information available.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits (EH40)

CAS No.	Substance	ppm	mg/m³	Category	Origin
124-38-9	Carbon dioxide, solid (Dry Ice)	5000	9100	TWA (8h)	AGW
124-38-9	Carbon dioxide, solid (Dry Ice)	10000	18200	STEL (15 min)	AGW
124-38-9	Carbon dioxide, solid (Dry Ice)	5000	9150	TWA (8h)	VLA
124-38-9	Carbon dioxide, solid (Dry Ice)	5000	9150	TWA (8h)	WEL
124-38-9	Carbon dioxide, solid (Dry Ice)	15000	27400	STEL (15 min)	WEL
124-38-9	Carbon dioxide, solid (Dry Ice)	5000	9000	TWA (8h)	TLV
124-38-9	Carbon dioxide, solid (Dry Ice)	5000	9000	TWA (8h)	OEL

8.2 Exposure controls

Appropriate engineering controls: Mechanical exhaust required. Use with proper ventilation.

Protective and hygiene measures: Wear appropriate personal protective clothing, goggles, gloves.

Eye/face protection: Avoid contact with eyes.

Hand protection: Wear loose fitting cryogenic gloves.

Skin protection: Avoid contact with clothing.

Respiratory protection: Niosh/msha-approved respirator.

Environmental exposure controls: Not applicable.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: Solid

Color: White/opaque

Odor: Odorless

pH: Not applicable

Relative evaporation rate: No data available

Melting point: -56.61°C

Freezing point: No data available

Boiling point:	-78.5°C
Flash point:	Not applicable
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Product is not self-igniting
Vapor pressure:	No data available
Relative vapor density at 20°C:	No data available
Relative density:	No data available
Solubility:	Soluble
Viscosity:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Explosive limits:	Product is not explosive

9.2 Other information

Critical temperature:	31°C

10. Stability and Reactivity

10.1 Reactivity

This product is non-reactive under normal conditions of use, storage, and transport.

10.2 Chemical stability

This product is stable under recommended conditions of use, storage, and transport.

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

None.

10.5 Incompatible materials

Alkali metals, alkaline earth metals, metal acetylides, chromium, titanium above 550°C, uranium above 750°C.

10.6 Hazardous decomposition products

In the presence of an electrical discharge, carbon dioxide is decomposed to form carbon monoxide and oxygen.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity:	Carbon dioxide is an asphyxiant.

It initially stimulates respiration and then causes respiratory depression.

High concentrations result in narcosis.

Symptoms in humans are as follows:

Effects	CO_2 Concentration
Breathing rate increases slightly.	1%
Breathing rate increases to 50% above normal level.	2%
Prolonged exposure can cause headache, tiredness.	2%
Breathing rate increase to twice normal rate and becomes labored. Weak narcotic effect.	3%
Impaired hearing, headache, increased blood pressure and pulse rate.	3%
Breathing rate increases to approximately four times normal rate, symptoms of intoxication 4-5% become evident, and slight choking may be felt.	4-5%
Characteristic sharp odor noticeable. Very labored breathing, headache, visual impairment, 5-10% and ringing in the ears. Judgement may be impaired, followed within minutes by loss of consciousness.	5-10%
Unconsciousness occurs more rapidly above the 10% level. Prolonged exposure to high 50-100% concentrations may eventually result in death from asphyxiation.	50-100%

Irritation and corrosivity: Not classified.

Sensitizing effects: Not classified.

Germ cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

STOT- single exposure: Not classified.

STOT- repeated exposure: Not classified.

Aspiration hazard: Not classified.

12. Ecological information

12.1 Toxicity

Fish toxicity: This product has not been tested.

Daphnia toxicity: This product has not been tested.

Algae toxicity: This product has not been tested.

Bacteria toxicity: This product has not been tested.

12.2 Persistence and degradability

This product has not been tested.

12.3 Bioaccumulative potential

This product has not been tested.

12.4 Mobility in soil

This product has not been tested.

12.5 Results of PBT and vPvB assessment

This product has not been tested.

12.6 Other adverse effects

No additional information available.

13. Disposal considerations

13.1 Waste treatment methods

Disposal recommendations: Dispose in accordance with local, regional, and national environmental regulations.

Contaminated packaging: For disposal of contaminated packaging, please refer to applicable local Regulations.

14. Transport information

In accordance with ADR/RID/IMDG/IATA/ADN

ADR	RID	IMDG	IATA	ADN
14.1 UN Number				
Not applicable	Not applicable	UN1845	UN1845	Not applicable
14.2 UN proper shipping name				
Not applicable	Not applicable	CARBON DIOXIDE, SOLID (DRY ICE)	Carbon dioxide, solid	Not applicable
14.3 Transport hazard class(es)				
Not applicable	Not applicable	9	9	Not applicable
14.4 Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5 Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

14.6 Special precautions for user

Transport in closed containers that are upright and secure.

Ensure transport is aware of the potential hazards and knows what to do in the event of an emergency or spillage.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

15. Regulatory information

15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

Not applicable.

National regulatory information

Not applicable.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out.

16. Other information

Abbreviations and Acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)

CAS: Chemical Abstracts Service

EC: Effect Concentration

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

IATA: International Air Transport Association

IMDG: International Maritime Code for Dangerous Goods

LC: Lethal Concentration

PBT: persistent, bioaccumulative, toxic

REACH: Registration, Evaluation and Authorization of Chemicals

RID: Regulations concerning the international carriage of dangerous goods by rail

STOT: Specific target organ toxicity

vPvB: very persistent, very bioaccumulative

UN: United Nations

The information contained herein is believed to be correct at time of issue but may not be all-inclusive and should be used as a guide only. Further, it is recommended that the product be handled and used by appropriately trained personnel only. Empire Genomics Corp. shall not be held liable for any damage resulting from handling or from contact with the product.