

MATERIAL SAFETY DATA SHEET

Mix Gas (Nitrogen, Carbon Dioxide and Hydrogen)

PRODUCT AND COMPANY IDENTIFICATION

Product name	Mix Gas (compressed)
Chemicals	75% Nitrogen, 20% Carbon Dioxide and 5% Hydrogen
Impurities	Contains no other impurities which will influence the classification of the product
Company identification	CryoExpress Singapore Pte Ltd 1 Bukit Batok Crescent #05-15 WCEGA Plaza Singapore 658064
Telephone number	(65) 6561 5282

HAZARDS IDENTIFICATION

Hazards identification	Might cause asphyxiation if released in confined area.
Inhalation	Nitrogen is a simple asphyxiant. Symptoms of exposure include dizziness, headache, loss of consciousness, and under some circumstances, death.
Skin / Eye contact	No adverse effects anticipated.
Ingestion	Ingestion is unlikely to happen.

FIRST AID MEASURES

Inhalation	High concentration causes asphyxiation. Symptoms include loss of mobility and consciousness. Low concentration causes increased respiration and headache. Immediately remove victim to fresh air area.
Skin/Eye contact	No adverse effects anticipated.
Ingestion	Ingestion is unlikely to happen.

FIRE FIGHTING MEASURES

Specific hazards	Hydrogen concentrations less than or equal to 5.7% in Nitrogen are considered non-flammable.
Hazardous combustion products	None.
Suitable extinguishing media	All known extinguishers could be used.

ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate all personnel from affected area. Wear protective clothing and self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.
Environmental precautions	Stop flow if atmosphere is proved to be unsafe. Do not enter any place (e.g. basements, workpits) where its accumulation could be dangerous.
Clean up methods	Ventilate area.

HANDLING AND STORAGE

Handling and storage	Compressed gas. Keep at temperatures below 52°C/125°F.
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EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit value (PEL-OSHA) None.

Personal protection Ensure adequate ventilation. In case of leakage, use self-contained breathing apparatus.

PHYSICAL AND CHEMICAL PROPERTIES

Chemical Name	Boiling Point	Melting Point	Molecular Weight	Evaporation Rate	Water Solubility	Vapor Pressure	Vapor Density (Air=1)	Gas Density Kg/m ³ @20°C
Hydrogen	-252.8 °C	-259.2 °C	1.00	-	0.019 (vol/vol @ 20°C and 1 atm)	Above critical temperature	0.07	0.083
Chemical Name	Boiling Point	Melting Point	Molecular Weight	Evaporation Rate	Water Solubility	Vapor Pressure	Vapor Density (Air=1)	Gas Density Kg/m ³ @20°C
Carbon Dioxide	56 °C	-56 °C	44.00	-	0.145g/ml @ 25°C	838psig(5778 kPa) @ 21.1°C	1.522	1.839
Chemical Name	Boiling Point	Melting Point	Molecular Weight	Evaporation Rate	Water Solubility	Vapor Pressure	Vapor Density (Air=1)	Gas Density Kg/m ³ @20°C
Nitrogen	-196 °C	-210 °C	28.01	-	0.023 (vol/vol@ 20°C and 1 atm)	Above critical temperature		

Odour and appearance Colourless, odourless gas

STABILITY AND REACTIVITY

Stability and reactivity Stable under normal conditions.

TOXICOLOGICAL INFORMATION

General No known toxicological effects from this product.

ECOLOGICAL INFORMATION

General No known toxicological effects from this product.

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.

TRANSPORT INFORMATION

Proper shipping name	Compressed Gas, N.O.S. (Nitrogen, Carbon Dioxide, Hydrogen)
UN Nr	1956
Hazard class	2.2
Shipping label	Label 2: Non flammable gas.
Other transport information	Avoid transport on vehicles where load space is not separated from driver's compartment. Ensure vehicle driver is aware of the potential hazards and knows what to do in event of an accident or an emergency.

OTHER INFORMATION

Ensure all national/local regulations are observed.

Details given in this document are believed to be correct at the time of going to press. 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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