SAFETY DATA SHEET
PROINERT™ IG-541

According to Regulation EC Directive 2001/58 and US 29 CFR 1910.1200

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

ProInert™ IG-541

Use of the substance/mixture

Fire extinguishing agent

Company/undertaking identification

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SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Gases under pressure – compressed gas (H280)

Simple Asphyxiant

Label elements

Signal Word: WARNING

Hazard Statements

H280: Contains gas under pressure; may explode if heated.

Precautionary Statements

P410: Protect from sunlight.

P403: Store in a well-ventilated place.

Other Hazards

The gas mixture is heavier than air and can cause suffocation by reducing oxygen available for breathing.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

49-55% Nitrogen

37-43% Argon

8% Carbon Dioxide

SECTION 4: FIRST AID MEASURES

General advice

If unconscious, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.

Inhalation

May cause asphyxiation at high concentrations. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to an uncontaminated area, wearing self-contained breathing apparatus. Keep person warm and at rest. Seek medical assistance. Apply artificial respiration if breathing has stopped.

Skin contact

Compressed gas directed at the skin can cause frostbite, enter the body through small wounds or even penetrate the skin causing serious or fatal injuries. Seek medical attention immediately.

Eye contact

Immediately flush eyes with water for a minimum of 15 minutes. If redness, itching or a burning sensation develops, seek medical attention immediately.

Ingestion

Ingestion is not considered a potential route of exposure.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media

All known extinguishants can be used.

Specific methods

If possible, stop flow of product. Move container away or cool with water from a protected position.

Specific hazards during firefighting

- Pressure buildup
- Fire of intense heat may cause violent rupture of containers.
- No hazardous combustion products.

Advice for fire fighters

In confined spaces use self-contained breathing apparatus. Use personal protective equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where the mixture might collect. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

Provided it is safe to do so, try to stop release. Prevent from entering sewers, basements and work pits or any place where accumulation can be dangerous.

Methods for cleaning up

Ventilate area. This substance will vaporize into the atmosphere.

Disposal

Refer to section 13 for disposal instructions.

SECTION 7: HANDLING AND STORAGE

Handling

Substance is heavier than air and may spread along floors.

Compressed gas cylinders are heavy and contain considerable stored energy. Use suitable equipment and handle with appropriate caution. Contact supplier if in doubt.

Backflow of any contaminating substance into container must be prevented.

Storage

Do not drag, slide or roll containers. Never attempt to lift cylinder by its cap. Use a check valve in the discharge line to prevent hazardous back flow into the container.

Storage temperature

Keep containers in a dry, cool and well-ventilated place at a temperature not below -4°F (-20°C) and not exceeding 122°F (50°C).

Exposure of compressed gas containers beyond the allowable storage temperature will result in an increase in pressure, which may cause the container relief disc to burst or in extreme cases, the container to burst.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

No exposure limit specified, but atmosphere must have a minimum of 18% free oxygen.

Exposure controls

Ensure adequate ventilation, especially in confined areas.

Eye protection - wear safety glasses complying with EN 166 or ANSI Z87.1

Hand protection - Leather gloves that are resistant to low temperature complying with EN 374 or US OSHA 29 guidelines. The choice of the gloves also depends on other quality features other than material and is different from one manufacturer to another. Consideration must be given to specific local conditions such as the danger of cuts, abrasion and contact time with the substance.

Skin and body protection – Wear suitable protective equipment.

Protective measures – Self-contained breathing apparatus is required if a large release is experienced.

Respiratory protection – For rescue use self-contained breathing apparatus. The mixture is heavier than air and can cause suffocation by reducing the oxygen concentration available for breathing. Apparatus must comply with EN 137 and OSHA 29 CFR 1910.134.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Form:	Compressed, colorless gas
Odor:	None
Molecular weight:	34.0
Boiling point:	-320.8°F (-196°C)
Freezing/melting point:	Not applicable (permanent gas)
Specific gravity or density:	1.442 kg/m^3 @ 1 bar
Upper and lower flammable limits in air:	None
Critical temperature:	Not applicable

Relative density gas:	Heavier than air
Relative density liquid:	Not applicable
Vapor pressure @ 20°C:	Not applicable
Solubility in water:	17.1 ml/l at 0°C
Auto ignition temperature:	Not applicable
Flammability range:	Not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity and chemical stability

Stable under normal conditions

Possibility of hazardous reactions

No known hazardous reactions. Stable.

Conditions to avoid

Refer to Section 7.

Hazardous decomposition products

None

SECTION 11: TOXICOLOGICAL INFORMATION

General

Asphxiant in high concentrations. In pure PROINERT™ IG-541 atmosphere, there exists a danger of suffocation through the displacement of oxygen.

Acute toxicity

No acute toxicity

SECTION 12: ECOLOGICAL INFORMATION

No ecological damage is caused by this product. Nitrogen, Argon and Carbon dioxide are natural components of air with nitrogen constituting approximately 78%, Argon approximately 0.9% and Carbon dioxide 0.04% of the Earth's atmosphere.

SECTION 13: DISPOSAL CONSIDERATIONS

Discharge to atmosphere in a well-ventilated area. Consider noise and pressure hazards. Do not discharge into any place where its accumulation could be dangerous.

Return cylinder to supplier; otherwise, dispose of cylinder in accordance with local, regional, national and/or international regulations.

Contact Fike Corporation (or Fike approved supplier) if special guidance is required.

SECTION 14: TRANSPORT INFORMATION

UN No.:	1956
Class:	2.2
Proper shipping name:	Compress gas, N.O.S. (52% Nitrogen, 40% Argon, 8% Carbon dioxide)
ADR/RID Item No.1:	2.1a

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 an emergency.

Before transporting product containers ensure:

- Cylinder valve is closed and not leaking.
- Valve outlet cap is correctly fitted.
- Adequate ventilation.
- Compliance with applicable regulations.

SECTION 15: REGULATORY INFORMATION

United States
Nitrogen, argon and carbon dioxide are listed on the United States Toxic Substance Control Act (TSCA) Inventory.

Canada
Nitrogen, argon and carbon dioxide are listed on the Canadian Domestic Substance List (DSL).

Europe
Nitrogen, argon and carbon dioxide are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

SECTION 16: OTHER INFORMATION

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The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Before using this product in any new processes or experiment, a thorough material compatibility and safety study should be carried out.

For application in fire extinguishing systems, the PROINERT™ IG-541 quantity is mainly designed to create oxygen concentration between 10% and 15% and CO2 concentrations between 2% and 5% and no hazards are known for the healthy human during short exposure in this atmosphere. However, the combustion products from the fire itself could be highly toxic; therefore, people must always leave the room when it is flooded with IG-541.

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