



Safety Data Sheet

Nitrogen, Refrigerated Liquid

www.arc3gases.com

Section 1: Product and Company Identification

Arc3 Gases

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Emergency contact: INFOTRAC 1-800-535-5053

Product Code: Nitrogen, Refrigerated Liquid
Part Number: SDS# 1000000018

Section 2: Hazards Identification



Warning

Hazard Classification:

Gases Under Pressure

Hazard Statements:

Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:

Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #

7727-37-9

| Chemical Substance | Chemical Family | Trade Names |
|----------------------------|-----------------|---|
| NITROGEN, CRYOGENIC LIQUID | non-metallic | NITROGEN, REFRIGERATED LIQUID; NITROGEN, REFRIGERATED LIQUID, CRYOGENIC LIQUID; NITROGEN; NITROGEN (LIQUID); LIQUID NITROGEN; UN 1977 |

Section 4: First Aid Measures

| Skin Contact | Eye Contact | Ingestion | Inhalation | Note to Physicians |
|--|---|--|--|----------------------------------|
| Immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention. | Flush eyes with plenty of water. Get medical attention. | If a large amount is swallowed, get medical attention. | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. | For inhalation, consider oxygen. |

Section 5: Fire Fighting Measures

| Suitable Extinguishing Media | Products of Combustion | Protection of Firefighters |
|--|------------------------|--|
| Non-flammable. Use suitable extinguishing media for surrounding fire. Cylinders may rupture or explode if exposed to heat. | Non-flammable | <ul style="list-style-type: none">Respiratory protection may be needed for frequent or heavy exposure. |

Section 6: Accidental Release Measures

| Personal Precautions | Environmental Precautions | Methods for Containment |
|--|---|--|
| Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. | No significant effects from contamination expected. | Stop leak if possible without personal risk. |

| Methods for Cleanup | Other Information |
|---------------------|-------------------|
| N/A | N/A |

Section 7: Handling and Storage

| Handling | Storage |
|---|---|
| Keep separated from incompatible substances. Store and use with adequate ventilation. Store away from heat and flame. Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. | Protect containers from physical damage; do not drag, roll, slide or drop. Always use personal protective equipment including, cold insulating clothing, and splash resistant goggles. Close the container valve after each use; keep closed even when empty. Always use hand truck to transport cylinders. |

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines

| |
|----------------------------|
| Exposure Guidelines |
| ACGIH (simple asphyxiant) |

Engineering Controls

Handle only in fully enclosed systems.

| Eye Protection | Skin Protection | Respiratory Protection |
|---|--|--|
| Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. | Wear appropriate protective, cold insulating clothing. | Respiratory protection may be needed for frequent or heavy exposure. |

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

| Physical State | Appearance | Color | Change in Appearance | Physical Form | Odor | Taste |
|----------------|------------|-----------|----------------------|---------------|----------|-----------|
| Gas | Clear | Colorless | N/A | Liquefied gas | Odorless | Tasteless |

| Flash Point | Flammability | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|---------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| Not flammable | Not available | Not available | Nonflammable | Nonflammable | Nonflammable |

| Boiling Point | Freezing Point | Vapor Pressure | Vapor Density | Specific Gravity | Water Solubility | pH | Odor Threshold | Evaporation Rate | Viscosity |
|-----------------|-----------------|-------------------|---------------|------------------|------------------|----------------|----------------|------------------|-------------------|
| -321 F (-196 C) | -346 F (-210 C) | 760 mmHg @ -196 C | 0.967 (Air=1) | Not applicable | 1.6% @ 20 C | Not applicable | Not available | Not applicable | 0.01787 cP @ 27 C |

| Molecular Weight | Molecular Formula | Density | Weight per Gallon | Volatility by Volume | Volatility | Solvent Solubility |
|------------------|-------------------|------------|-------------------|----------------------|------------|--|
| 28.0134 | N ₂ | 1.2506 g/L | Not available | 100% | 1 | Soluble: Soluble: liquid ammonia Slightly Soluble: alcohol |

Section 10: Stability and Reactivity

| Stability | Conditions to Avoid | Incompatible Materials |
|---|---|-----------------------------|
| Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Metals, oxidizing materials |

| Hazardous Decomposition Products | Possibility of Hazardous Reactions |
|----------------------------------|------------------------------------|
| Oxides of nitrogen | Will not polymerize. |

Section 11: Toxicology Information

Acute Effects

| Oral LD50 | Dermal LD50 | Inhalation |
|---------------|---------------|--|
| Not available | Not available | Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma |

| Eye Irritation | Skin Irritation | Sensitization |
|---------------------------|---------------------|----------------------|
| Frostbite, blurred vision | Blisters, frostbite | Difficulty breathing |

Chronic Effects

| Carcinogenicity | Mutagenicity | Reproductive Effects | Developmental Effects |
|-----------------|---------------|----------------------|-----------------------|
| Not hazardous | Not available | Not available | No data |

Section 12: Ecological Information

Fate and Transport

| Eco toxicity | Persistence / Degradability | Bioaccumulation / Accumulation | Mobility in Environment |
|---|-----------------------------|--------------------------------|-------------------------|
| Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available | Not available | Not available | Not available |

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

| Proper Shipping Name | ID Number | Hazard Class or Division | Packing Group | Labeling Requirements | Passenger Aircraft or Railcar Quantity Limitations | Cargo Aircraft Only Quantity Limitations | Additional Shipping Description |
|-------------------------------|-----------|--------------------------|----------------|-----------------------|--|--|---------------------------------|
| Nitrogen, refrigerated liquid | UN1977 | 2.2 | Not applicable | 2.2 | 75 kg or L | 150 kg | N/A |

Canadian Transportation of Dangerous Goods

| Shipping Name | UN Number | Class | Packing Group / Risk Group |
|-------------------------------|-----------|-------|----------------------------|
| Nitrogen, refrigerated liquid | UN1977 | 2.2 | Not applicable |

Section 15: Regulatory Information

U.S. Regulations

| CERCLA Sections | SARA 355.30 | SARA 355.40 |
|-----------------|----------------|----------------|
| Not regulated. | Not regulated. | Not regulated. |

SARA 370.21

| Acute | Chronic | Fire | Reactive | Sudden Release |
|-------|---------|------|----------|----------------|
| Yes | No | No | No | Yes |

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

| CA Proposition 65 |
|-------------------|
| Not regulated. |

Canadian Regulations

| WHMIS Classification |
|----------------------|
| Not determined. |

National Inventory Status

| US Inventory (TSCA) | TSCA 12b Export Notification | Canada Inventory (DSL/NDL) |
|----------------------|------------------------------|----------------------------|
| Listed on inventory. | Not listed. | Not determined. |

Section 16: Other Information

NFPA Rating

HEALTH=3 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard