



The Occupational Safety and Health Act (OSHA) Hazard Communication standard 29 CFR 1910.1200 requires that chemical manufacturers, importers, and distributors of hazardous materials provide Safety Data Sheets (SDS) to distributors and customers. Notification is also required if a SDS has been updated due to a significant change in health hazard information.

| Date      | Invoice # | Part #        | Description         | SDS#       |
|-----------|-----------|---------------|---------------------|------------|
| 9/25/2024 | 11231405  | G01 SP101-150 | SHIELDPRO 101 - 150 | 1000000033 |

You will find the appropriate SDS information for the above product(s) by visiting **[www.arc3gases.com/sds](http://www.arc3gases.com/sds)**. Click the MSDS Online icon on the right side of the screen. Enter the 10-digit SDS# provided above into the search box. Select the PDF icon to the left. You may print or save as needed.

You may also request printed copies by calling 1-866-215-9366 or you may call your local Arc3 Gases branch.

If you are not the person in your organization responsible for this information, please forward the notice to the individual(s) responsible for your employee's safety and health.

**ARC3 GASES**  
Director of Regulatory Compliance  
PO Box 1708  
Dunn, NC 28335



SDS# 1000000033

## Safety Data Sheet

Compressed Gas, N.O.S. (Argon, Carbon Dioxide)

[www.arc3gases.com](http://www.arc3gases.com)

### Section 1: Product and Company Identification

#### Arc3 Gases

Arc3 Gases - North  
1700 Chamberlayne Ave.  
Richmond, VA 23222  
phone: (804) 388-0302  
fax: (804) 788-8904

Arc3 Gases - South  
1660 US Highway 301 South  
P.O. Box 1708  
Dunn, NC 28335  
phone: (910) 892-4016  
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Emergency contact: INFOTRAC 1-800-535-5053

Product Code: Compressed Gas, N.O.S. (Argon, Carbon Dioxide)

Part Number: SDS# 1000000033

**Synonyms:** Argon Balance, Carbon Dioxide 2-50%, ShieldPro 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111

**Recommended Use:** Not Known

**Usage Restrictions:** Not Known

### 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 #     | Concentration |
|----------------|-----------|---------------|
| Argon          | 7440-37-1 | Balance       |
| Carbon Dioxide | 124-38-9  | 2-50%         |

|                | Chemical Substance  | Chemical Family  | Trade Names                                                                       |
|----------------|---------------------|------------------|-----------------------------------------------------------------------------------|
| Argon          | ARGON, COMPRESSED   | non-metallic     | ARGON; UN 1006; AR                                                                |
| Carbon Dioxide | CARBON DIOXIDE, GAS | oxides of carbon | CARBONIC ACID GAS; CARBONIC ANHYDRIDE; CARBON DIOXIDE; CARBON OXIDE; UN 1013; CO2 |

### Section 4: First Aid Measures

|                | Skin Contact                                                                                                                                                                                                                         | Eye Contact                                                                                                                     | Ingestion                        | Inhalation                                                                                                                                                                                                               | Note to Physicians               |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Argon          | Not applicable route of exposure                                                                                                                                                                                                     | Flush eyes with plenty of water.                                                                                                | Not applicable route of exposure | 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. |
| Carbon Dioxide | If frostbite or freezing occur, 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. | Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention. | Do not induce vomiting.          | 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                                                                                                                |
|----------------|------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Argon          | Non-flammable gas            | Not applicable         | <ul style="list-style-type: none"> <li>N/A</li> <li>N/A</li> </ul>                                                                        |
| Carbon Dioxide | Non-flammable                | Non-flammable          | <ul style="list-style-type: none"> <li>Any appropriate escape-type, self-contained breathing apparatus.</li> <li>Non-flammable</li> </ul> |

### Section 6: Accidental Release Measures

|       | Personal Precautions                                                                                     | Environmental Precautions | Methods for Containment                      |
|-------|----------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------|
| Argon | Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. | None known.               | Stop leak if possible without personal risk. |



|                       | Personal Precautions                                                                                                                      | Environmental Precautions                                                                                                            | Methods for Containment                      |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>Carbon Dioxide</b> | Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material. | Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers. | Stop leak if possible without personal risk. |

|                       | Methods for Cleanup                              | Other Information |
|-----------------------|--------------------------------------------------|-------------------|
| <b>Argon</b>          | Leaks may be detected by a soapy-water solution. |                   |
| <b>Carbon Dioxide</b> | Stop leak, evacuate, remove source of ignition.  | None              |

## Section 7: Handling and Storage

|                       | Handling                                                                                                                                                                           | Storage                                                                   |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Argon</b>          | Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances. | Avoid using in confined spaces.                                           |
| <b>Carbon Dioxide</b> | Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.                                                                            | Store and handle in accordance with all current regulations and standards |

## Section 8: Exposure Controls/Personal Protection

|                       | Exposure Guidelines                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Argon</b>          | ARGON, COMPRESSED: ARGON: ACGIH (simple asphyxiant)                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Carbon Dioxide</b> | CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m <sup>3</sup> ) OSHA TWA 10000 ppm (18000 mg/m <sup>3</sup> ) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 30000 ppm (54000 mg/m <sup>3</sup> ) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m <sup>3</sup> ) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m <sup>3</sup> ) NIOSH recommended STEL |

### Engineering Controls

Handle only in fully enclosed systems.

|                       | Eye Protection                                                                                                                                                                                                                                 | Skin Protection                                                                                                          | Respiratory Protection                                           |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| <b>Argon</b>          | Eye protection not required, but recommended.                                                                                                                                                                                                  | Protective clothing is not required.                                                                                     | N/A                                                              |
| <b>Carbon Dioxide</b> | For the gas: Eye protection not required, but recommended. For the liquid: 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. | For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing. | Any appropriate escape-type, self-contained breathing apparatus. |

### 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      |
|-----------------------|----------------|------------|-----------|----------------------|---------------|----------|------------|
| <b>Argon</b>          | Gas            | Colorless  | Colorless | N/A                  | Gas           | Odorless | Tasteless  |
| <b>Carbon Dioxide</b> | Gas            | Colorless  | Colorless | N/A                  | Gas           | Odorless | Acid taste |

|              | Flash Point   | Flammability | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|--------------|---------------|--------------|-----------------------|--------------------------|------------------------|------------------------|
| <b>Argon</b> | Not flammable |              |                       | Nonflammable             | Nonflammable           | Nonflammable           |



|                | Flash Point   | Flammability  | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|----------------|---------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| Carbon Dioxide | Not flammable | Not available | N/A                   | Nonflammable             | Nonflammable           | Nonflammable           |

|                | Boiling Point   | Freezing Point            | Vapor Pressure    | Vapor Density | Specific Gravity | Water Solubility | pH                                                           | Odor Threshold | Evaporation Rate | Viscosity        |
|----------------|-----------------|---------------------------|-------------------|---------------|------------------|------------------|--------------------------------------------------------------|----------------|------------------|------------------|
| Argon          | -303 F (-186 C) | -308 F (-189 C)           | 500 mmHg @ -190 C | 1.38 (Air=1)  | Not applicable   | 3.36% @ 20 C     | Not applicable                                               | Not available  | Not applicable   | 0.0225 cP @ 25 C |
| Carbon Dioxide | Not available   | -71 F (-57 C) @ 4000 mmHg | 43700 mmHg @ 21 C | 1.5 (Air=1)   | 1.522 @ 21 C     | Soluble          | 3.7 (saturated aqueous solution) @ 101.3 kPa (carbonic acid) | Not available  | Not applicable   | 0.01657 cP @ 0 C |

|                | Molecular Weight | Molecular Formula | Density         | Weight per Gallon | Volatility by Volume | Volatility     | Solvent Solubility                                        |
|----------------|------------------|-------------------|-----------------|-------------------|----------------------|----------------|-----------------------------------------------------------|
| Argon          | 39.948           | AR                | 1.784 g/L @ 0 C | Not available     | 100%                 | Not applicable | Soluble: Organic solvents                                 |
| Carbon Dioxide | 44.01            | C-O2              | 0.114           | Not available     | Not applicable       | Not applicable | Soluble: Alcohol, acetone, hydrocarbons, organic solvents |

## Section 10: Stability and Reactivity

|                | Stability                                   | Conditions to Avoid                         | Incompatible Materials                                                                                 |
|----------------|---------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Argon          | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | No data available.                                                                                     |
| Carbon Dioxide | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases |

|                | Hazardous Decomposition Products | Possibility of Hazardous Reactions |
|----------------|----------------------------------|------------------------------------|
| Argon          | No data available.               | Will not polymerize.               |
| Carbon Dioxide | Carbon monoxide                  | Will not polymerize.               |

## Section 11: Toxicology Information

### Acute Effects

|                | Oral LD50       | Dermal LD50     | Inhalation                                                                                                                                                                                               |
|----------------|-----------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Argon          | Not established | Not established | Nausea, vomiting, difficulty breathing, irregular heartbeat, headache, dizziness, disorientation, mood swings, tingling sensation, loss of coordination, suffocation, convulsions, unconsciousness, coma |
| Carbon Dioxide | Not established | Not established | Ringling in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, suffocation, convulsions, coma                                              |

|                | Eye Irritation                                | Skin Irritation                               | Sensitization        |
|----------------|-----------------------------------------------|-----------------------------------------------|----------------------|
| Argon          | No information on significant adverse effects | No information on significant adverse effects | Difficulty breathing |
| Carbon Dioxide | Irritation, frostbite, blurred vision         | Liquid: blisters, frostbite                   | Difficulty breathing |

### Chronic Effects

|       | Carcinogenicity | Mutagenicity    | Reproductive Effects | Developmental Effects |
|-------|-----------------|-----------------|----------------------|-----------------------|
| Argon | Not established | Not established | Not established      | No data               |



|                | Carcinogenicity | Mutagenicity    | Reproductive Effects | Developmental Effects |
|----------------|-----------------|-----------------|----------------------|-----------------------|
| Carbon Dioxide | Not available   | Not established | Available.           | No data               |

## Section 12: Ecological Information

### Fate and Transport

|                | Eco toxicity                                                                                                                                                                                                           | Persistence / Degradability                                                   | Bioaccumulation / Accumulation                             | Mobility in Environment  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------|
| Argon          | Fish toxicity: Not available<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available                                                | Not available                                                                 | Not available                                              | Not available            |
| Carbon Dioxide | Fish toxicity: 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta)<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available | Relatively non-persistent in the environment. Moderately volatile from water. | Accumulates very little in the bodies of living organisms. | Leaches through the soil |

## Section 13: Disposal Considerations

|                |                                                        |
|----------------|--------------------------------------------------------|
| Argon          | Dispose in accordance with all applicable regulations. |
| Carbon Dioxide | Dispose in accordance with all applicable regulations. |

## Section 14: Transportation Information

### U.S. DOT 49 CFR 172.101

#### DOT Information For This Mixture

|                    |                                                |
|--------------------|------------------------------------------------|
| Shipping Name      | Compressed gas, n.o.s. (Argon, Carbon Dioxide) |
| UN Number          | UN1956                                         |
| Hazard Class       | 2.2                                            |
| Hazard Information | Non-Flammable Gas                              |

#### Individual Component Information

|                | 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 |
|----------------|----------------------|-----------|--------------------------|----------------|-----------------------|----------------------------------------------------|------------------------------------------|---------------------------------|
| Argon          | Argon, compressed    | UN1006    | 2.2                      | Not applicable | 2.2                   | 75 kg or L                                         | 150 kg                                   | N/A                             |
| Carbon Dioxide | Carbon dioxide       | UN1013    | 2.2                      | Not applicable | 2.2                   | 75 kg or L                                         | 150kg                                    | None                            |

#### Canadian Transportation of Dangerous Goods

|                | Shipping Name     | UN Number | Class | Packing Group / Risk Group |
|----------------|-------------------|-----------|-------|----------------------------|
| Argon          | Argon, compressed | UN1006    | 2.2   | Not applicable             |
| Carbon Dioxide | Carbon dioxide    | UN1013    | 2.2   | Not applicable             |

## Section 15: Regulatory Information

### U.S. Regulations

|                | CERCLA Sections | SARA 355.30    | SARA 355.40    |
|----------------|-----------------|----------------|----------------|
| Argon          | Not regulated.  | Not regulated. | Not regulated. |
| Carbon Dioxide | Not regulated.  | Not regulated. | Not regulated. |

### SARA 370.21

|                | Acute | Chronic | Fire | Reactive | Sudden Release |
|----------------|-------|---------|------|----------|----------------|
| Argon          | Yes   | No      | No   | No       | Yes            |
| Carbon Dioxide | Yes   | No      | No   | No       | Yes            |

### SARA 372.65

|                |                |
|----------------|----------------|
| Argon          | Not regulated. |
| Carbon Dioxide | Not regulated. |

### OSHA Process Safety

|                |                |
|----------------|----------------|
| Argon          | Not regulated. |
| Carbon Dioxide | Not regulated. |

### State Regulations

|                | CA Proposition 65 |
|----------------|-------------------|
| Argon          | Not regulated.    |
| Carbon Dioxide | Not regulated.    |

### Canadian Regulations

|                | WHMIS Classification |
|----------------|----------------------|
| Argon          | A                    |
| Carbon Dioxide | A                    |

### National Inventory Status

|                | US Inventory (TSCA)  | TSCA 12b Export Notification | Canada Inventory (DSL/NDSL) |
|----------------|----------------------|------------------------------|-----------------------------|
| Argon          | Listed on inventory. | Not listed.                  | Listed on inventory.        |
| Carbon Dioxide | Listed on inventory. | Not listed.                  | Listed on inventory.        |

## Section 16: Other Information

|                | NFPA Rating                  |
|----------------|------------------------------|
| Argon          | HEALTH=0 FIRE=0 REACTIVITY=0 |
| Carbon Dioxide | HEALTH=2 FIRE=0 REACTIVITY=0 |

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