

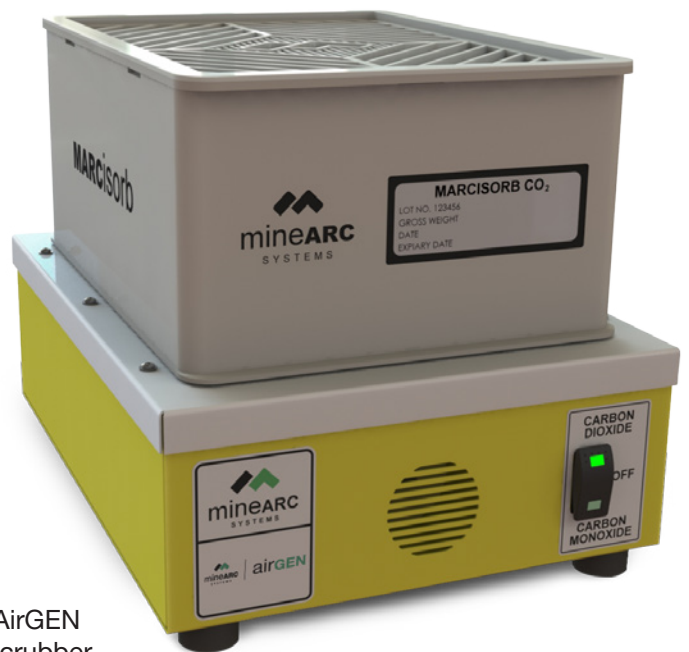


MineARC® AirGEN CO / CO₂ Scrubber

The MineARC AirGEN CO/CO₂ scrubber can be used in multiple industries to create safe, breathable air for personnel sheltering in an enclosed space from an external hazard.



airGEN



MineARC AirGEN
CO / CO₂ Scrubber

Emergency refuge chambers and auxiliary mining products



Company Profile

MineARC Systems is the global leader in the manufacture and supply of emergency refuge chambers used in the underground mining, tunnelling, and chemical processing industries.



MineARC Systems also supplies a wide range of auxiliary mining products; from general mining, to industrial hygiene and mine safety.

With over 15 years experience in the industry, our dedication to ongoing research and development has kept us at the forefront of mining equipment technology.

MineARC has offices and manufacturing facilities in Australia, South Africa, Chile, China and the United States, as well as a strong distribution network worldwide.

MineARC manufactures and supplies refuge chambers and auxiliary mining products to operations in over 40 countries world-wide.

MineARC's AirGEN CO/CO₂ Scrubber can be used in multiple industries to create safe, breathable spaces for personnel sheltering in an enclosed space from an external hazard.

www.minearc.com



ISO 9001 Quality Rating



European CE Certified to Machinery Norms



Australian C-Tick Standards:
AS4100-1998, AS3570.1-18,
AS2208, AS3000, AS1716-15



United States
National Electrical Code (NEC)
2011



Features Summary

The MineARC AirGEN is a standalone air regenerative system that ‘scrubs’ the air inside enclosed spaces – removing harmful gases such as CO (carbon monoxide), CO₂ (carbon dioxide) vital to any sealed environment that contains human life for an extended period of time. CO and CO₂ can become lethal in high concentrations.

This valuable, life saving device has been designed to be retrofitted into refuge chambers, safe havens, and survival shelters.

Construction

- Powder coated steel construction
- 3” (76.2mm) blower with corrosion resistant motor
- Simple single switch operation
- Easy fitment of chemical cartridges
- Green LED light to indicate operation
- Rubber mounting feet



Dimensions				
Dimensions with chemical cartridge installed:	Length	Height	Width	Weight
	18" / 457mm	13.5" / 343mm	13.75" / 349mm	44lbs. / 22kg

**Note CO/CO₂ cartridges are sold separately*

Chemical Cartridges

- Pre-packaged scrubber chemical cartridges – no direct chemical handling
- Built of high grade polypropylene plastics that do not contain additives likely to give rise to highly toxic fumes
- Sealed into a barrier film bag with pressure relief valve
- Long shelf life
- Material Safety Data Sheets supplied



Features Summary

Carbon Dioxide

Carbon dioxide (CO₂) is a colorless, odorless gas that is produced during human respiration. A typical person will produce between 0.85 to 1.1 cubic feet of CO₂ per hour (24-30L).

CO₂ is a simple asphyxiate and causes adverse health effects at elevated concentrations. The Mine Health & Safety Administration (MSHA) stipulates a permissible exposure limit of 1% and a ceiling limit of 2.5% for miners trapped in a coal mine. Similarly, the Occupational Safety and Health Administration (OSHA) have set a permissible exposure limit of 0.5% over an 8-hour work day, with a ceiling exposure limit of 3% for a 10 minute period. The symptoms of CO₂ exposure are listed below.

CO ₂ Concentrations	Symptoms
0.03%	Normal concentration in air
0.5%	Lung ventilation increases by 5%
1%	Symptoms may begin to occur
2-3%	Symptoms of simple asphyxia occur
5-10%	Prolonged exposure could result in unconsciousness and death
>10%	Unconsciousness in less than 1 minute, leading to death



Operating Instructions

- Instructions are mounted directly on the unit for easy access
- Includes directions for CO₂ and CO cartridges
- Provides approximate change out periods for CO₂ cartridge for various occupancies
- Includes recommended oxygen regulator settings for various occupancies

Optional Features



Battery Backup & Charger

- 30 hour battery backup system (longer durations can be attained with multiple scrubber units)
- UL/CSA listed 12 Volt battery charger
- 120 Volt AC with retractable power cord
- LCD battery monitoring display
- Recessed handles for ease of handling
- Mounts directly to AirGEN Scrubber
- Additional height: 10" (254mm)
- Additional weight: 30lbs (13.6kg)

Gas Monitoring



Digital

- Honeywell Impact Pro Multi-Gas Detector
- Provides real-time gas monitoring of O₂, CO, and CO₂ (infrared)
- Can be powered through existing 12 or 24 Volt supply – or alternatively with addition of integrated battery backup & charger system (shown above)
- Charging cradle conveniently mounts to scrubber unit



Manual

- Gastec Manual Gas Detector
- Reliable and easy to use
- Utilizes pre-filled chemical tubes that react to air being drawn through the hand-held pump device
- Tests levels of CO, CO₂ and O₂ (recommended once hourly)
- Includes 36 Hour supply of sampling tubes

Optional Features

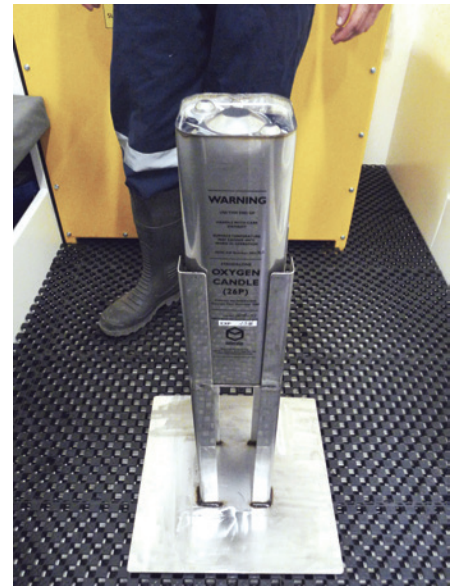
Oxygen Supply

The MineARC AirGEN is designed to be used in conjunction with an oxygen supply. MineARC Systems offers both oxygen candles and compressed oxygen cylinders.

Oxygen Candle

- 687 gallons (2,600L) of oxygen produced within 60-70 minutes of ignition
- Military approved – supplied with Safety Data Sheet for additional information
- Includes igniter match, stainless steel stand, and Kevlar™ gloves
- Ideal for small occupancy and/or short duration sheltering

**Note Units must be shipped Hazmat.*



Oxygen Regulator

- Medical grade oxygen regulator with flow selection from 1-30 persons
- CGA-540 valve connection required
- Supplied with rubber gloves for regulator handling
- 303ft³ (8,500L) compressed oxygen cylinders



Used in multiple Industries

Chemical Processing

In the event of a toxic chemical release, fire, explosion or other hazardous emergency, personnel need a secure 'go-to' area. Safe havens and control rooms should be fitted with a scrubber system to prevent the buildup of toxic levels of CO and CO₂ produced by the sheltering occupants. The MineARC AirGEN allows extended entrapment while awaiting rescue, or for the external hazard to dissipate.



Survival Shelters

Fires, floods, hurricanes, and tornados are all reason to escape to a survival shelter, keeping family and friends safe. The MineARC AirGEN is compact in size, stores for extended periods, and is easy to operate. The addition of a scrubbing system permits a shelter that is ventilated from the outside to be converted to a fully isolated environment, protected from external hazards.



Bomb Shelters

An underground bomb shelter should have the capability of shutting down all outside sources of air for an extended period following a nuclear attack. During the first hours of a nuclear attack, smoke, carbon monoxide, and radiation particles could overcome the ventilation system which is reliant on air from outside.

In a sealed environment carbon dioxide will buildup very quickly and at a concentration of 3% asphyxiation can occur rapidly. The MineARC AirGEN controls the buildup of carbon dioxide, maintaining safe levels for occupants, while toxic gases outside the shelter dissipate.



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Emergency refuge chambers and auxiliary mining products