

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

Product identifier: 20% CO2/Argon mix

Relevant identified uses of the substance or mixture and uses advised against

Use of the: General Industrial

Substance/Mixture

Restrictions on Use: No data available.

Details of the supplier of the safety data sheet: Adams Gas, 2 Bath Road, Margate, Kent, CT9 1SL

Email Address: info@adamsgas.co.uk

Telephone: 01843 220168

Emergency telephone number (24h): 01843 220596

2. HAZARDS IDENTIFICATION

Classification according to Regulation 1272/2008 (CLP)

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

Label Elements according to Regulation 1272/2008 (CLP)

Hazard pictograms/symbols

Signal Word: Warning

Hazard Statements:

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

Precautionary Statements:

Storage: P403: Store in a well-ventilated place.

Classification (Directive)

Not a hazardous substance or preparation according to EC-directives 67/548/EEC or 1999/45/EC.

No EC labelling required.

Other hazards

High pressure gas. Can cause rapid suffocation.

Self contained breathing apparatus (SCBA) may be required.

Environmental Effects

Not harmful.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture
Components EINECS / ELINCS
Number
CAS Number Concentration
(Volume)
Oxygen 231-956-9 7782-44-7 2 %
Carbon dioxide 204-696-9 124-38-9 5 %
Argon 231-147-0 7440-37-1 93 %

Components Classification
(Directive)
Classification
(CLP)
REACH Reg.#
Oxygen 0
R 8
Ox.Gas 1
Press.Gas
Carbon dioxide Press. Gas
Argon Press. Gas

If REACH registration numbers do not appear the substance is either exempt from registration, does not meet the minimum volume threshold for registration, or the registration date has not yet come due. Refer to section 16 for full text of each relevant R-phrase and H-phrases.

Concentration is nominal. For the exact product composition, please refer to Air Products technical specifications.

4. FIRST AID MEASURES

Description of first aid measures

General advice: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact: Not applicable.

Skin contact: Not applicable.

Ingestion: Ingestion is not considered a potential route of exposure.

Inhalation: Remove to fresh air. If breathing has stopped or is laboured, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. In case of shortness of breath, give oxygen.

Most important symptoms and effects, both acute and delayed

Symptoms: Shivering fit. Sweating. Blurred vision. Headache. Increased pulse rate. Shortness of breath. Rapid respiration. Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness.

Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: All known extinguishing media can be used.
Extinguishing media which must not be used for safety reasons.

: No data available.

Special hazards arising: Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Product is non-flammable and does not support combustion. Move away from the substance or from container and cool with water from a protected position. Keep containers Mixture and surroundings cool with water spray.

Advice for fire-fighters: Wear self contained breathing apparatus for fire fighting if necessary.

Further information: No data available.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
: Gas/ vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level. Evacuate personnel to safe areas. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Monitor oxygen level. Ventilate the area.

Environmental precautions

: Do not discharge into any place where its accumulation could be dangerous.

Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up: Ventilate the area.

Additional advice: If possible, stop flow of product. Increase ventilation to the release area and monitor oxygen level. If leak is from cylinder or cylinder valve, call the Adams Gas telephone number. If the leak is in the user's system, close the cylinder valve and safely vent the pressure before attempting repairs.

6. HANDLING AND STORAGE

Precautions for safe handling

Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed Gases / cryogenic liquids. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has

been secured against either a wall or bench or placed in a container stand and is ready for use. Use an adjustable strap wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use.

Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close valve after each use and when empty. Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment. Do not subject containers to abnormal mechanical shocks which may cause damage to their valve or safety devices. Never attempt to lift a cylinder by its valve protection cap or guard. Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Do not smoke while handling product or cylinders. Never re-compress a gas or a gas mixture without first consulting the supplier. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. When returning cylinder install valve outlet cap or plug leak tight. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 50°C (122°F). Prolonged periods of cold temperature below -30°C (-20°F) should be avoided.

Conditions for safe storage, including any incompatibilities

Full containers should be stored so that oldest stock is used first. Containers should be stored in a purpose built compound which should be well ventilated, preferably in the open air. Stored containers should be periodically

checked for general condition and leakage. Observe all regulations and local requirements regarding storage of containers. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Full and empty cylinders should be segregated. Do not allow storage temperature to exceed 50°C (122°F). Return empty containers in a timely manner.

Technical measures/Precautions

Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations. Keep away from combustible material.

Specific end use(s)

Refer to section 1 or the extended SDS if applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure limit(s)

Carbon dioxide Time Weighted Average (TWA): EH40 WEL 5,000ppm 9,150 mg/m³

Carbon dioxide Short Term Exposure Limit (STEL): EH40 WEL 15,000ppm 27,400 mg/m³

Carbon dioxide Time Weighted Average (TWA): EU ELV 5,000ppm 9,000 mg/m³

If applicable, refer to the extended section of the SDS for further information on CSA.

Exposure controls

Engineering measures

Provide natural or mechanical ventilation to prevent oxygen deficient atmospheres below 19.5% oxygen.

Personal protective equipment

Respiratory protection: Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere. Air purifying respirators will not provide protection. Users of breathing apparatus must be trained.

Hand protection: Sturdy work gloves are recommended for handling cylinders. The breakthrough time of the selected glove(s) must be greater than the intended use period.

Eye protection: Safety glasses recommended when handling cylinders.

Skin and body protection: Safety shoes are recommended when handling cylinders.

Special instructions for protection and hygiene: Ensure adequate ventilation, especially in confined areas.

Remarks: Simple asphyxiant.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance: Compressed gas. Colourless gas

Odour: None.

Odour threshold: No data available.

pH: Not applicable.

Melting point/range: No data available.

Boiling point/range: -194 °F (-125.5 °C)

Flash point: Not applicable.

Evaporation rate: Not applicable.

Flammability (solid, gas): No data available.

Upper/lower: No data available.

explosion/flammability limit

Vapour pressure: No data available.

Water solubility: Not known, but considered to have low solubility.

Relative vapour density: 1.38 (air = 1) Heavier than air.

Relative density: No data available.

Partition coefficient: Not applicable.
(n-octanol/water)

Auto-ignition temperature: No data available.

Decomposition temperature: No data available.

Viscosity: Not applicable.

Explosive properties: No data available.

Oxidizing properties: No data available.

Molecular Weight: 39.88 g/mol

Density: 0.0017 g/cm³ (0.106 lb/ft³) Note: (as vapour)

Specific Volume: 0.5993 m³/kg (9.60 ft³/lb)

10. STABILITY AND REACTIVITY

Reactivity: Refer to possibility of hazardous reactions and/or incompatible materials
Sections

Chemical Stability: Stable under normal conditions.

Possibility of hazardous: No data available.

Reactions

Conditions to avoid: No data available.

Incompatible materials: No data available.

Hazardous decomposition: None.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Likely routes of exposure

Effects on Eye: No adverse effect.

Effects on Skin: No adverse effect.

Inhalation Effects: In high concentrations may cause asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.

Ingestion Effects: Ingestion is not considered a potential route of exposure.

Symptoms: Exposure to oxygen deficient atmosphere may cause the following

symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness. Shivering fit. Sweating. Blurred vision. Headache. Increased pulse rate. Shortness of breath. Rapid respiration.
Acute toxicity

Acute Oral Toxicity: No data is available on the product itself

Inhalation: No data is available on the product itself.

Acute Dermal Toxicity: No data is available on the product itself.

Skin corrosion/irritation: No data available.

Serious eye damage/eye: No data available.

Irritation

Sensitization: No data available.

Chronic toxicity or effects from long term exposures

Carcinogenicity: No data available.

Reproductive toxicity: No data is available on the product itself.

Germ cell mutagen city: No data is available on the product itself.

Specific target organ systemic: No data available.

Toxicity (single exposure)
Specific target organ systemic: No data available.

Toxicity (repeated exposure)
Aspiration hazard: No data available.

12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No data is available on the product itself.

Toxicity to fish -Components

Carbon dioxide LC50 (1 h): 240 mg/l Species: Rainbow trout (Oncorhynchus mykiss).

Carbon dioxide LC50 (96 h): 35 mg/l Species: Rainbow trout (Oncorhynchus mykiss).

Toxicity to other: No data is available on the product itself.
Organisms

Persistence and degradability

No data available.

Bio-accumulative potential

No data is available on the product itself.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

If applicable, refer to the extended section of the SDS for further information on CSA.

Other adverse effects

No known ecological damage caused by this product.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods: Contact supplier if guidance is required. Return unused product in original cylinder to supplier.

Contaminated packaging: Return cylinder to supplier.

14. TRANSPORT INFORMATION

ADR

UN/ID No.: UN1956

Proper shipping name: COMPRESSED GAS, N.O.S., (Argon, Carbon dioxide)

Class or Division: 2

Tunnel Code: (E)

Label(s): 2.2

ADR/RID Hazard ID no. : 20

IATA

UN/ID No.: UN1956

Proper shipping name: Compressed gas, n.o.s., (Argon, Carbon dioxide)

Class or Division: 2.2

Label(s): 2.2

IMDG

UN/ID No.: UN1956

Proper shipping name: COMPRESSED GAS, N.O.S., (Argon, Carbon dioxide)

Class or Division: 2.2

Label(s): 2.2

RID

UN/ID No.: UN1956

Proper shipping name: COMPRESSED GAS, N.O.S., (Argon, Carbon dioxide)

Class or Division: 2

Label(s): 2.2

Further 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 the event of an accident or an emergency. Compliance with applicable regulations. Before transporting product containers ensure that they are firmly secured and: Cylinder valve is closed and not leaking. Valve outlet cap nut or plug (where provided) is correctly fitted. Valve protection device (where provided) is correctly fitted. The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact an Air Products customer service representative.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Country Regulatory list Notification

USA TSCA Included on Inventory.

EU EINECS Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.

Canada DSL Included on Inventory.

Australia AICS Included on Inventory.

Japan ENCS Included on Inventory.

South Korea ECL Included on Inventory.

China SEPA Included on Inventory.

Philippines PICCS Included on Inventory.

Chemical Safety Assessment

Refer to extended SDS for CSA information

This product is either exempt from REACH, does not meet the minimum volume threshold for a CSA, or the CSA has not yet been completed.

16. OTHER INFORMATION

Ensure all national/local regulations are observed.

R-phrase(s)-Components

R 8 Contact with combustible material may cause fire.

Hazard Statements:

H270 May cause or intensify fire; oxidiser.

H280 Contains gas under pressure; may explode if heated.

Prepared by: Adams Gas

For additional information, please visit our Product Stewardship web site at <http://www.adamsgas.co.uk>

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

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