SECTION: 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier : Air

CAS No. : 132259-10-0

Chemical name : Air, mixture of nitrogen and oxygen (mixture of 20% - 22.0% oxygen, balance nitrogen) or Air compressed from the atmosphere)

Synonyms : Compressed Air, Synthetic Air, Zero Air, Instrument Air

REACH Registration Number : Listed in Annex IV/V REACH, exempted from registration.

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

Use of the substance/mixture : General Industrial and Professional use. Perform risk assessment prior to use.

Restriction on Use : Not for consumer use

Details of the supplier of the safety data sheet

Physical address : Air Products South Africa (Pty) Ltd.
Silver Stream Business Park, 1st Floor, Building 3,
10 Muswell Road South
Bryanston, 2191

Telephone : +27 (0)11 570 5000 (Head Office)
+27 (0)11 977 6444 (Customer Care Cylinders)
0800 023 298 (Engineering / Bulk Services)

Emergency telephone number (24h) : 0800 650 315

SECTION: 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

Label elements

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.

Other hazards

High pressure gas.

SECTION: 3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures : Not applicable

Substances

Components	EINECS/ELINCS Number	CAS Number	Concentration (V)
Air	Not Available	132259-10-0	100%

OR

Components	EINECS/ELINCS Number	CAS Number	Concentration (V)
Oxygen	231-956-9	7782-44-7	20% - 22%
Nitrogen	231-783-9	7727-37-9	Balance

Components	Classification (CLP)	REACH Reg. #
Oxygen	Ox. Gas 1; H270 Press. Gas (comp.) H280	*1
Nitrogen	Press. Gas (Comp.); H280	*1

*1: Listed in Annex IV/V REACH, exempted from registration.

*2: Registration not required: Substance manufactured or imported.

*3: Registration not required: substance manufactured or imported < 1 t/y for non-intermediate uses

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

SECTION: 4. FIRST AID MEASURES

Description of first aid measures

Eye contact : In effects case of direct contact with eyes, seek medical advice.

Skin contact : Adverse effects not considered from this product.

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

Inhalation : Adverse not considered from this product

Most important symptoms and effects, both acute and delayed

Symptoms : No data available

Indication of any immediate medical attention and special treatment needed

Treatment : If exposed or concerned: Get medical attention/advice.

SECTION: 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media : The product itself does not burn.
Use extinguishing media appropriate for surrounding fire.

Extinguishing media which must not be used for safety reasons : Do not use water jet to extinguish.

Special hazards arising from the substance or mixture

Can support combustion. Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Move away from container and cool with water from a protected position. If possible, stop flow of product. Keep adjacent cylinders and surroundings cool by spraying with large amounts of water until the fire burns itself out.

Advice for fire-fighters : Standard protective clothing and equipment (self-contained breathing apparatus) for fire fighters.
Standard EN 469 – Protective clothing for fire-fighters.
Standard EN 659 – Protective gloves for fire-fighters.

SECTION: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe area. Ventilate the area.

Environmental precautions : Prevent further leakage or spillage if safe to do so.

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

Additional advice : If possible, stop flow of product. If leak is from cylinder or cylinder valve, call the Air Products emergency telephone number. If the leak is in the user's system, close the cylinder valve, safely vent the pressure, before attempting repairs.

Reference to other sections : For more information refer to sections 8 and 13.

SECTION: 7. HANDLING AND STORAGE

Precautions for safe handling

Cylinders should be stored up right with valve protection guard in place and firmly secured to prevent falling or being knocked over. Use equipment rated for cylinder pressure. Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C. 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. Do not remove valve guards. 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., spanner/wrench, screwdriver, pry bar, etc.) into valve 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. 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 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. 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. Prolonged periods of cold temperature below -30°C 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. 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.

SECTION: 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

DNEL: Derived no effect level (Workers) : None available.
PNEC: predicted no effect concentration : None available.

Exposure controls

Personal protective equipment

Hand protection	:	Wear work gloves when handling gas cylinders. Standard EN 388- Protective gloves against mechanical risk. The breakthrough time of the selected glove(s) must be greater than the intended use period.
Eye/face protection	:	Safety glasses recommended when handling cylinders. Standard EN 166-Personal eye-protection.
Skin and body protection	:	Safety shoes are recommended when handling cylinders. Standard EN ISO 20345- Personal protective equipment-Safety footwear.
Special instructions for protection and hygiene	:	Ensure adequate ventilation, especially in confined areas.

SECTION: 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	:	Compressed gas.
Colour	:	Colourless gas
Odour	:	No odour warning properties.
Molecular Weight	:	28.96 g/mol
Relative vapour density	:	1 (air = 1)
Vapour pressure	:	Not applicable.
Density	:	0.0013 g/cm^3 at 21 °C
Relative density	:	Not applicable.
Specific Volume	:	0.7710 m^3/kg at 21 °C
Boiling point/range	:	-194.3 °C
Critical temperature	:	-141 °C
Melting point/range	:	-216 °C
Water solubility	:	Not known but considered to have low solubility.
Partition coefficient n-octanol/water [log Kow]	:	Not applicable
pH	:	Not applicable
Viscosity	:	No reliable data available
Particle characteristics	:	Not applicable for gases and gas mixtures
Upper and Lower explosion/ flammability limits	:	No data available
Flash point	:	Not applicable
Auto-ignition temperature	:	Not known.
Decomposition temperature	:	Not applicable

Other information

Explosive properties	:	Not applicable
Oxidizing properties	:	Not applicable
Odour threshold	:	Odour threshold is subjective and inadequate to warn of overexposure.
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Refer to production classification section 2.

SECTION: 10. STABILITY AND REACTIVITY

Reactivity : No reactivity hazard other than the effects described in sub sections below.

Chemical Stability : Stable under normal conditions.

Possibility of hazardous reactions : No data available

Conditions to avoid : No data available.

Incompatible materials : No data available

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION: 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Likely routes of exposure

Effects on Eye : In case of direct contact with the eyes, seek medical advice.

Effects on Skin : Adverse effects not expected from this product.

Inhalation effects : No adverse effect.

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

Symptoms : No data available

Acute toxicity

Acute oral toxicity : No data available on the product itself

Acute inhalation toxicity : No data available on the product itself

Acute dermal toxicity : No data available on the product itself

Skin corrosion/irritation : No data available

Serious eye damage / irritation : No data available

Sensitization : No data available

Chronic toxicity or effects from long term exposure

Carcinogenicity : No data available

Reproductive toxicity : No data available on the product itself

Germ cell mutagenicity : No data available on the product itself

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

Specific target organ systemic toxicity (repeated exposure) : No data available

Aspiration hazard : No data available

Information on other hazards

The substance/mixture has no endocrine disrupting properties.

SECTION: 12. ECOLOGICAL INFORMATION

Toxicity

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

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

Persistence and degradability

No data available

Bioaccumulative potential : Refer to section 9 “Partition Coefficient (n-octanol/water)”

Mobility in soil : Because of its high volatility, product is unlikely to cause ground pollution.

Endocrine disrupting properties

The substance/mixture has no endocrine disrupting properties.

Other adverse effects

No ecological damage caused by this product.

Effect on the ozone layer : No known effects from this product

Ozone Depleting Potential : None

Effect on the global warming : No known effects from this product

Global Warming Potential : None

SECTION: 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.

SECTION: 14. TRANSPORT INFORMATION

UN number or ID number

UN/ID No. : UN1002

UN proper shipping name

Transport by road/rail (ADR/RID) : AIR, COMPRESSED
Transport by air (ICAO-TI / IATA-DGR): Air, compressed
Transport by sea (IMDG) : AIR, COMPRESSED

Transport hazard class(es)

Label(s) : 2.2

Transport by road/rail (ADR/RID)

Class or Division : 2
ADR/RID/ADN Haz ID no. : 20
Tunnel Code : (E)

Transport by air (ICAO-TI / IATA-DGR)

Class or Division : 2.2

Transport by sea (IMDG)

Class or Division : 2.2

Packing group

Transport by road/rail (ADR/RID) : Not applicable.
Transport by air (ICAO-TI / IATA-DGR): Not applicable.
Transport by sea (IMDG) : Not applicable.

Environmental hazards

Transport by road/rail (ADR/RID)

Marine Pollutant : No

Transport by air (ICAO-TI / IATA-DGR)

Marine Pollutant : No

Transport by sea (IMDG)

Marine Pollutant : No
Segregation Group : None

Special precautions for user

Transport by air (ICAO-TI / IATA-DGR)

Passenger and Cargo Aircraft : Transport allowed.
Cargo Aircraft only : Transport allowed.

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. Ensure 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 and the 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.

SECTION: 15. REGULATORY INFORMATION

OHS Act	:	Occupational Health and Safety Act 85 of 1993 (and Regulations)
SANS 11014	:	Safety data sheet for chemical products- Content and order of sections
SANS 10234	:	Globally Harmonized System of classification and labelling of chemicals (GHS)
SANS 10265	:	The classification and labelling of dangerous substances and preparations for sale and handling.
SANS 10019	:	Transportable containers for compressed, dissolved and liquefied gases – Basic design, manufacture, use and maintenance.
SANS 1518	:	Transport of dangerous goods – Design, construction, testing, approval and maintenance of road vehicles and portable tanks
SANS 10228	:	The identification and classification of dangerous goods for transport
SANS 10229-1&2	:	Transport of dangerous goods – Packaging and large packaging for road and rail transport Part 1: Packaging / Part 2: Large Packaging
SANS 10263-2	:	The warehousing of dangerous goods Part 2: The storage and handling of gas cylinders.

NB: Refer to latest edition.

SECTION: 16. OTHER INFORMATION

Ensure all national/local regulations are observed.

Hazard Statements

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

Indication of Method

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

Abbreviations and acronyms

ATE – Acute Toxicity Estimate

CLP – Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

EINECS – European Inventory of Existing Commercial Chemical Substances

ELINCS – European List of Notified Chemical Substances

CAS# - Chemical Abstract Service number

PPE – Personal Protective Clothing

Kow – octanol-water partition coefficient

LC50- Lethal Concentration to 50% of a test population

LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose)

OEL – Occupational Exposure Limit

PBT – Persistent Bioaccummulative and Toxic

vPvB - Very Persistent and Very Bioaccummulative

STOT – Specific Target Organ Toxicity

EN – European Standard

UN – United Nations

ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road

IATA – International Air Transport Association

IMDG – International Maritime Dangerous Goods

RID – Regulations concerning the International Carriage of Dangerous Goods by Rail

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

Note: This SDS is valid for five years from the date of publishing and will be reviewed once every five years as per Section 14A of the Hazards Chemical Agents Regulations.

(Reference www.airproducts.com:- Air Products S.A./N.V. Belgium Air MSDS Number 300000000000 / Version 2. / Revision Date 17.04.2023)