

SECTION 1: Identification

1.1 Product Identifier

| | | |
|----------------------|---|----------------|
| Trade name | Oxygen and Nitrogen Compressed Gas Mixtures | |
| MSDS No. | 0015 | |
| Chemical description | Oxygen | Nitrogen |
| | CAS No. 7782-44-7 | 7727-37-9 |
| | EC No. 231-956-9 | 231-783-9 |
| Chemical formula | O ₂ | N ₂ |
| Synonyms | Air, High Purity Air, Alphagaz Air | |

1.2 Relevant identified uses and uses advised against

Special atmospheres for food

1.3 Details of the supplier

Name Air Liquide New Zealand Limited
 Address 19 Maurice Road, Penrose
 Auckland 1061,
 New Zealand
 Phone Phone: (09) 622 3880

1.4 Emergency telephone number

0800 156 516

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Hazardous Substances [Classification] Regulations 2001

HSNO classification(s) 5.1.2A - Oxidising substances that are gases
 Compressed Gases - Contains gas under pressure; may explode if heated

Physical Hazards

2.2 Label Elements

Hazard pictograms



Signal word Danger
 Hazard statements H280 - Contains gas under pressure; may explode if heated

Precautionary statements

- Prevention P103 - Read label before use
Response P370 + P376 - In case of fire: Stop leak if safe to do so
Storage P403 - Store in a well ventilated place.
Disposal None allocated

2.3 Other Hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1 Substance/Mixtures

| Name | Chemical Formula | Percent (%) | Product Identifier |
|-----------------------|------------------|-------------|--------------------|
| Oxygen (Compressed) | O ₂ | 21 | (Cas No) 7782-44-7 |
| | | | (EC No) 231-956-9 |
| Nitrogen (Compressed) | N ₂ | 79 | (Cas No) 7727-37-9 |
| | | | (EC No) 231-783-9 |

SECTION 4: First-aid measures

4.1 Description of first-aid measures

| | |
|--------------|--|
| Inhalation | Remove victim to uncontaminated area. |
| Skin contact | Adverse effects not expected from this product. |
| Eye contact | Adverse effects not expected from this product. |
| Ingestion | Ingestion is not considered a potential route of exposure. |

4.2 Most important symptoms and effects, both acute and delayed

Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

| | |
|--------------------------------|-------------------------------------|
| Suitable extinguishing media | Water spray or fog. |
| Unsuitable extinguishing media | Do not use water jet to extinguish. |

5.2 Specific hazards arising for the substance or mixture

| | |
|------------------|---|
| Specific hazards | Exposure to fire may cause containers to rupture/explode. Supports combustion. |
|------------------|---|

Hazardous combustion products

5.3 Advice for firefighters

| | |
|---|---|
| Specific methods | Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Move containers away from the fire area if this can be done without risk. |
| Special protective equipment for firefighters | Standard protective clothing and equipment (Self Contained Breathing Apparatus) for firefighters. Do not enter fire area without proper personal protective equipment, including respiratory protection. |
| Hazchem code | 2S 2 Fine Water Spray Use fog or fine spray S Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Dilute spill and run-off. Use breathing apparatus |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Try to stop release.
Evacuate area.
Monitor concentration of released product.
Eliminate ignition sources.
Ensure adequate air ventilation.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Act in accordance with local emergency plan.
Stay upwind.

6.2 Environmental precautions

Try to stop release.

6.3 Methods and material for containment and cleaning up

Ventilate area

6.4 References to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

| | |
|-------------------------------------|---|
| Safe use of the product | The substance must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consult supplier for specific recommendations. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Use only oxygen approved lubricants and oxygen approved sealings. Use only with equipment cleaned for oxygen service and rated for cylinder pressure. Do not breathe gas. Avoid release of product into atmosphere. |
| Safe handling of the gas receptacle | Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. 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. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Suck back of water into the container must be prevented. Open valve slowly to avoid pressure shock. |

7.2 Conditions for safe storage, including any incompatibilities

| | |
|---------|--|
| General | Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. |
|---------|--|

Store containers in location free from fire risk and away from sources of heat and ignition.
Keep away from combustible materials.

Approved handlers Approved handlers and locations certificates are required if more than 200m³ is stored on site

7.3 Specific use(s)

None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| | |
|--|-------------------|
| OEL (Occupational Exposure Limits) | No data available |
| DNEL (Derived-No Effect Level) | No data available |
| PNEC (Predicted No-Effect Concentration) | No data available |

8.2 Appropriate engineering controls

Provide adequate general and local exhaust ventilation.
Systems under pressure should be regularly checked for leakages.
Avoid oxygen rich (>23.5%) atmospheres.
Gas detectors should be used when oxidising gases may be released.
Consider work permit system e.g. for maintenance activities.

8.3 Individual protection measures

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered:
Wear suitable hand, body and head protection. Wear goggles with suitable filter lenses when use is cutting/welding.
PPE compliant to the recommended EN/ISO standards should be selected.



Eye/face protection

Wear safety glasses with side shields.

Skin protection

Wear working gloves when handling gas containers.
Consider the use of flame resistant safety clothing.
Wear safety shoes while handling containers.

Respiratory protection

None necessary.

Thermal hazards

None necessary.

8.4 Environmental exposure controls

None necessary.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

Appearance

| | |
|----------------------------------|---|
| Physical state 20°C/101.3kPa | Gas |
| Colour | Colourless |
| Odour | No odour warning properties |
| Odour threshold | Odour threshold is subjective and inadequate to warn of overexposure. |
| pH value | Not applicable |
| <u>Molar mass [g/mol]</u> | 32 g/mol |
| Melting point [°C] | -219 °C |
| Boiling point [°C] | -183 °C |
| Flash point [°C] | Not applicable for gases and gas mixtures. |
| <u>Critical temperature [°C]</u> | -118 °C |
| Evaporation rate (ether=1) | Not applicable for gases and gas mixtures. |

| | |
|---|------------------------------------|
| Flammability range | Non flammable |
| Vapour pressure [20°C] | Not applicable |
| Vapour pressure [50°C] | Not applicable |
| Relative density, gas (air=1) | 1.1 |
| Relative density, liquid (water=1) | 1.1 |
| Solubility in water [mg/l] | 39 mg/l |
| Partition coefficient n-octanol/water [log Kow] | Not applicable for inorganic gases |
| Autoignition temperature | Not applicable |
| Decomposition temperature | Not applicable |
| Viscosity [20°C] | Not applicable |
| <u>Explosive properties</u> | Not applicable |
| <u>Oxidising properties</u> | Oxidiser |
| <u>Coefficient of oxygen equivalency (Ci)</u> | 1 |

9.2 Other information

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: Stability and reactivity

10.1 Reactivity

No reactivity hazard other than the effects described in subsections below.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Violently oxidises organic material.

10.4 Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5 Incompatible materials

May react violently with reducing agents.

May react violently with combustible materials.

Keep equipment free from oil and grease.

Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (> 30 bar) oxygen lines in case of combustion.

For additional information on compatibility refer to ISO 11114.

10.6 Hazardous decomposition products

None

SECTION 11: Toxicological information

11.1 Information on toxicological effects

| | |
|--|---|
| Acute toxicity | No known toxicological effects from this product. |
| Skin corrosion/irritation | No known effects from this product. |
| Serious eye damage/irritation | No known effects from this product. |
| Respiratory/skin sensitisation | No known effects from this product. |
| Germ cell mutagenicity | No known effects from this product. |
| Carcinogenicity | No known effects from this product. |
| Toxic for reproduction: Fertility | No known effects from this product. |
| Toxic for reproduction: Unborn child | No known effects from this product. |
| Specific target organ toxicity - Single exposure | No known effects from this product. |
| Specific target organ toxicity - Repeated exposure | No known effects from this product. |

Aspiration hazard

Not applicable for gases and gas mixtures.

SECTION 12: Ecological information

12.1 Toxicity

No ecological damage caused by this product.

12.2 Persistence and degradability

No ecological damage caused by this product.

12.3 Bioaccumulative potential

No ecological damage caused by this product.

12.4 Mobility in soil

No ecological damage caused by this product.

12.5 Other adverse effects

Effect on ozone layer None.

Effect on global warming None.

SECTION 13: Disposal consideration

13.1 Waste treatment methods

Cylinders should be returned to the manufacturer or supplier for disposal of contents

Vent to atmosphere in a well ventilated place. Do not discharge into any place where its accumulation could be dangerous

13.2 Additional information

None.

SECTION 14: Transport information



2.2 Non-flammable, non-toxic gases

14.1 Land transport

Land Transport Rule: Dangerous Goods 2005: NZS 5433:2012

| | |
|----------------------------|-----------------|
| UN Number | 1002 |
| UN proper shipping name | AIR, COMPRESSED |
| Transport hazard class(es) | 2.2 |
| Packing group | Not applicable |
| Environmental hazards | None |

14.2 Transport by sea

IMDG - International Maritime Dangerous Goods

| | |
|----------------------------|--------------------------|
| UN Number | 1002 |
| UN proper shipping name | AIR, COMPRESSED |
| Transport hazard class(es) | 2.2 |
| Packing group | Not applicable |
| Environmental hazards | None |
| Emergency Schedule (EmS) | Fire F-C Spillage S-W |

14.3 Transport by air

ICAO - International Civil Aviation Organisation/IATA - International Air Transport Association

| | |
|----------------------------|-----------------|
| UN Number | 1002 |
| UN proper shipping name | AIR, COMPRESSED |
| Transport hazard class(es) | 2.2 |
| Packing group | Not applicable |
| Environmental hazards | None |

14.4 Special precautions for user

| | |
|-------------------------------|--|
| Hazchem code | 2T |
| Special transport 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. Before transporting product containers: Ensure there is adequate ventilation. Ensure that containers are firmly secured. Ensure cylinder valve is closed and not leaking. Ensure valve outlet cap nut or plug (where provided) is correctly fitted. Ensure valve protection device (where provided) is correctly fitted. |

SECTION 15: Regulatory information

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

HSNO approval code -
Listed on the New Zealand Inventory of Chemicals (NZIoC)

15.2 Chemical safety assessment

A chemical safety assessment does not need to be carried out for this product.

SECTION 16: Other information

16.1 Indication of changes

Update to reflect GHS requirements
Date of first issue April 2019
Revised date July 2019
Superseeds Version 10
Version 11

16.2 Training advice

Ensure operators understand the hazard of oxygen enrichment.

16.3 Full text of H-statements

H280 Contains gas under pressure; may explode if heated

16.4 Cylinder features

Colour AS4484-2004 Black/ Green Grey PMS 415C AS4484-2004 Light Green PMS 361C
Valve outlet AS 2473 Type 10 Scandina Cap / White

16.5 Disclaimer of liability

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Safety Data Sheet

AIR
(Compressed Gas Mixtures)

Date of Issue 23/07/2019
Version 11.
SDS Ref # 0015

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