

## 1. Identification of Substance & Company

### Product

|                      |  |
|----------------------|--|
| Product name         | Nonflammable Gas Mixture: Carbon Monoxide / Methane / Nitrogen / Nitrogen Dioxide / Oxygen |
| Product code         | 015465   |
| HSNO approval        | Not applicable – non hazardous compressed gas.   |
| Approval description | NA   |
| UN number            | 1956   |
| DG class             | 2.2  |
| Proper Shipping Name | COMPRESSED GAS, N.O.S. (nitrogen, nitrogen dioxide)  |
| Packaging group      | NA   |
| Hazchem code         | 2T   |
| Uses                 | Synthetic/Analytical chemistry   |

### Company Details

|           |  |
|-----------|--|
| Company   | Accurate Instruments NZ Ltd                            |
| Address   | P.O Box 25586<br>St Heliers<br>Auckland<br>New Zealand |
| Telephone | 0800 500 380   |
| Website   | www.accurate.kiwi                                      |

## 2. Hazard Identification

### Approval

This product is not considered hazardous under the Hazardous Substances and New Organisms Act (HSNO), according to the criteria in the Hazardous substances (Hazard Classification) Notice 2020. It is transported as a Dangerous Good – COMPRESSED GAS N.O.S. (contains nitrogen, nitrogen dioxide)

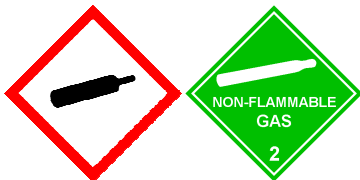
### GHS 7 Classes

### Hazard Statements

Compressed Gas

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

### SYMBOLS



### Other Classifications

OSHA-H01 - May displace oxygen and cause rapid suffocation

### Precautionary Statements

|            |  |
|------------|--|
| Prevention | P103 - Read label before use.  |
| Response   | No response statements   |
| Storage    | P410+P403 - Protect from sunlight. Store in a well-ventilated place. |
| Disposal   | No disposal statements   |

### 3. Composition / Information on Ingredients

| Component        | CAS/ Identification | Concentration  |
|------------------|---------------------|----------------|
| Nitrogen         | 7727-37-9           | 77.3-99.9996%  |
| Oxygen           | 7782-44-7           | 0.0001-19.5%   |
| Methane          | 74-82-8             | 0.0001-3%      |
| Carbon Monoxide  | 630-08-0            | 0.0001-0.0999% |
| Nitrogen Dioxide | 10102-44-0          | 0.0001-0.0999% |

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

### 4. First Aid

#### General Information

You should call the National Poisons Centre if you feel that you may have been harmed, burned or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service).

**Recommended first aid facilities** Ready access to running water is recommended. Accessible eyewash is recommended.

#### Exposure

|                     |  |
|---------------------|--|
| <b>Swallowed</b>    | The product is not considered toxic or harmful. Ingestion is unlikely as this is a gas. In case of persistent symptoms, contact the National Poisons Centre or a Doctor.   |
| <b>Eye contact</b>  | Contact with eyes may result in cold burns. Immediately wash eyes with plenty of water, holding eyelids apart for 15 mins. Contact a doctor.   |
| <b>Skin contact</b> | This product is non-irritating to skin, however contact may result in cold burns. Remove contaminated clothing and wash affected area with water. Do not apply direct heat to affected area. For large burns immerse in water. Contact a doctor.   |
| <b>Inhaled</b>      | Generally, inhalation of the gas is not considered harmful, however it is considered to be an asphyxiant. Remove victim from source of exposure without becoming a casualty by using correct PPE (see section 8). If coughing, dizziness or shortness of breath is experienced, remove the patient to fresh air immediately. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor. If breathing has stopped apply artificial respiration if trained. Contact a doctor immediately. |

#### Advice to Doctor

Treat symptomatically.

### 5. Firefighting Measures

|   |   |
|---|---|
| <b>Fire and explosion hazards:</b>        | This gas is not classed as flammable or oxidising. The cylinders may rupture in a fire. Do not attempt to handle a cylinder that has been heated.               |
| <b>Suitable extinguishing substances:</b> | Carbon dioxide, extinguishing powder or water jet. Fight larger fires with water jet or alcohol resistant foam.   |
| <b>Firefighting instructions</b>          | Evacuate the area. Cool cylinders with water from the maximum distance. Stop flow of gas if safe to do so. Remove cylinders from area of fire if safe to do so. |
| <b>Products of combustion:</b>            | oxides of carbon, oxides of nitrogen.   |
| <b>Protective equipment:</b>              | Use self contained breathing apparatus (SCBA) and protective clothing.  |
| <b>Hazchem code:</b>                      | 2T  |

### 6. Accidental Release Measures

|                             |   |
|-----------------------------|---|
| <b>Containment</b>          | This substance is a compressed gas, no secondary containment is required.   |
| <b>Emergency procedures</b> | If a gas leak occurs:<br>Isolate area. Avoid breathing gas. Avoid contact with skin and eyes. Stop leak if safe to do so. |
| <b>Clean-up method</b>      | Gas will dissipate at normal air pressure. Increase ventilation.  |
| <b>Disposal</b>             | Empty cylinders may be returned to the manufacturer.  |
| <b>Precautions</b>          | No special protective clothing is normally necessary.   |

### 7. Storage & Handling

|                 |  |
|-----------------|--|
| <b>Storage</b>  | Cylinders should be stored securely at room temperature (~20°C). Prevent cylinders from falling by using restraints. |
| <b>Handling</b> | Keep exposure to a minimum, and minimise the quantities kept in work areas. See                                      |

section 8 with regard to personal protective equipment requirements.

## 8. Exposure Controls / Personal Protective Equipment

### Workplace Exposure Standards

A workplace exposure standard (WES) has not been established by WorkSafe NZ for this product. There is a general limit of 3mg/m<sup>3</sup> for respirable particulates and 10mg/m<sup>3</sup> for inhalable particulates when limits have not otherwise been established.

| NZ Workplace Exposure Stds | Ingredient       | WES-TWA                    | Ceiling | WES-STEL |
|----------------------------|------------------|----------------------------|---------|----------|
|                            | Nitrogen         | -                          | -       | -        |
|                            | Oxygen           | -                          | -       | -        |
|                            | Methane          | -                          | -       | -        |
|                            | Carbon Monoxide  | 20ppm                      | 200ppm  | 100ppm   |
|                            | Nitrogen Dioxide | 1ppm, 1.9mg/m <sup>3</sup> | -       | -        |

### Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

### Personal Protective Equipment

|                    |   |
|--------------------|---|
| <b>General</b>     | Personal Protective Equipment (PPE) should not be used as the primary means of exposure protection, except in the event of an accident or emergency situation or where all other means of protection have proven to inadequate.<br>Clean PPE after use or dispose of as appropriate. Store PPE for re-use in a clean place.<br>Regular training on the correct use of PPE should be provided. In particular the correct fitting and use of respirators and where applicable the cleaning of respirators should be undertaken. |
| <b>Eyes</b>        | Protective eyewear is not normally necessary when using this product. However, it always prudent to use protective eyewear if leaks are likely especially when handling valves and cylinders.   |
| <b>Skin</b>        | Wear gloves when handling cylinders and valves.   |
| <b>Respiratory</b> | Wear an Air-line respirator or self-contained Breathing Apparatus (SCBA), where a risk of inhalation exists.  |

### WES Additional Information

Not applicable

## 9. Physical & Chemical Properties

|   |   |
|---|---|
| <b>Appearance</b>                         | compressed gas, clear colourless  |
| <b>Odour</b>                              | No odour  |
| <b>Odour threshold</b>                    | No odour  |
| <b>pH</b>                                 | not applicable  |
| <b>Freezing / melting point</b>           | -187.6°C  |
| <b>Boiling point</b>                      | Not available   |
| <b>Flash point</b>                        | Not applicable  |
| <b>Flammability</b>                       | non flammable   |
| <b>Upper &amp; lower flammable limits</b> | no data   |
| <b>Vapour pressure</b>                    | not applicable  |
| <b>Vapour density</b>                     | Highest known value: 1.1 (Air = 1) (oxygen). Weighted average: 0.98 (Air = 1) |
| <b>Specific gravity / density</b>         | Gas density: 1.12kg/m <sup>3</sup>  |
| <b>Solubility</b>                         | not specified   |
| <b>Partition Coefficient:</b>             | no data   |
| <b>Auto-ignition temperature</b>          | no data   |
| <b>Decomposition temperature</b>          | no data   |
| <b>Viscosity</b>                          | not applicable – compressed gas   |
| <b>Particle characteristics</b>           | not applicable  |

## 10. Stability & Reactivity

|   |  |
|---|--|
| <b>Stability</b>                          | Stable   |
| <b>Conditions to be avoided</b>           | Keep from extreme heat and open flames. Keep away from moisture.                                   |
| <b>Incompatible groups</b>                | strong oxidisers. Carbon monoxide may be corrosive to some metals.                                 |
| <b>Substance Specific Incompatibility</b> | Titanium will burn in nitrogen (the main component of this mixture). Lithium reacts with nitrogen. |
| <b>Hazardous decomposition products</b>   | none known   |
| <b>Hazardous reactions</b>                | none known   |

## 11. Toxicological Information

### Summary

IF IN EYES: contact with gas may result in cold burns.

IF ON SKIN: may cause cold burns.

IF INHALED: this gas may be an asphyxiant (cause oxygen deficient atmospheres) and may cause respiratory difficulties, ringing in the ears, headaches, shortness of breath, wheezing, dizziness, indigestion, nausea, unconsciousness and death.

CHRONIC EXPOSURE: oxygen deficient atmospheres may affect the heart and the nervous system.

### Supporting Data

|                |  |   |
|----------------|--|---|
| <b>Acute</b>   | <b>Oral</b>  | No evidence of acute oral toxicity.   |
|                | <b>Aspiration</b>                                  | This mixture is not considered an aspiration hazard.  |
|                | <b>Dermal</b>                                      | No evidence of acute dermal toxicity.   |
|                | <b>Inhaled</b>                                     | Carbon monoxide is considered toxic if inhaled, however at the levels present in this mixture, this does not trigger classification.<br>Nitrogen is a simple asphyxiant.<br>Nitrogen dioxide: LC <sub>50</sub> : 115ppm (1h, rat) |
|                | <b>Eye</b>   | The mixture is not considered to be an eye irritant. Discharge of the gas may cause cold burns.   |
|                | <b>Skin</b>  | The mixture is not considered to be a skin irritant. Discharge of the gas may cause cold burns.   |
| <b>Chronic</b> | <b>Sensitisation</b>                               | No ingredient present at concentrations > 0.1% is considered a sensitizer.  |
|                | <b>Mutagenicity</b>                                | No ingredient present at concentrations > 0.1% is considered a mutagen.   |
|                | <b>Carcinogenicity</b>                             | No ingredient present at concentrations > 0.1% is considered a carcinogen.  |
|                | <b>Reproductive / Developmental</b>                | No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.  |
|                | <b>Systemic Aggravation of existing conditions</b> | No ingredient present at concentrations > 1% is considered a target organ toxicant.<br>None known.  |

## 12. Ecological Data

### Summary

This mixture does not trigger ecotoxic classification.

### Supporting Data

|                                    |   |
|------------------------------------|---|
| <b>Aquatic</b>                     | No evidence of aquatic ecotoxicity for the mixture.                     |
| <b>Bioaccumulation</b>             | Not relevant.   |
| <b>Degradability</b>               | Not relevant.   |
| <b>Soil</b>                        | No evidence of soil toxicity.   |
| <b>Terrestrial vertebrate</b>      | This mixture is not considered harmful towards terrestrial vertebrates. |
| <b>Terrestrial invertebrate</b>    | No evidence of toxicity towards terrestrial invertebrates.              |
| <b>Biocidal</b>                    | no data   |
| <b>Environmental effect levels</b> | No EELs are available for this mixture or ingredients.                  |

### 13. Disposal Considerations

**Restrictions** There are no product-specific restrictions, however, local council and resource consent conditions may apply.

**Disposal method** Cylinders should be returned to the supplier or manufacturer for disposal.

### 14. Transport Information

#### Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007

Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a hazardous substance for transport.

|                     |                                 |                              |  |
|---------------------|---------------------------------|------------------------------|--|
| <b>UN number:</b>   | 1956                            | <b>Proper shipping name:</b> | COMPRESSED GAS, N.O.S.<br>(nitrogen, nitrogen dioxide) |
| <b>Class(es)</b>    | 2.2                             | <b>Packing group:</b>        | NA   |
| <b>Precautions:</b> | non flammable,<br>non toxic gas | <b>Hazchem code:</b>         | 2T   |

|                     |                                 |                              |  |
|---------------------|---------------------------------|------------------------------|--|
| <b>IMDG</b>         |                                 |                              |  |
| <b>UN number:</b>   | 1956                            | <b>Proper shipping name:</b> | COMPRESSED GAS, N.O.S.<br>(nitrogen, nitrogen dioxide) |
| <b>Class(es)</b>    | 2.2                             | <b>Packing group:</b>        | NA   |
| <b>Precautions:</b> | non flammable,<br>non toxic gas |                              |  |

|                     |                                 |                              |  |
|---------------------|---------------------------------|------------------------------|--|
| <b>IATA</b>         |                                 |                              |  |
| <b>UN number:</b>   | 1956                            | <b>Proper shipping name:</b> | COMPRESSED GAS, N.O.S.<br>(nitrogen, nitrogen dioxide) |
| <b>Class(es)</b>    | 2.2                             | <b>Packing group:</b>        | NA   |
| <b>Precautions:</b> | non flammable,<br>non toxic gas |                              |  |

### 15. Regulatory Information

This substance is not considered to be hazardous under HSNO.  
All ingredients appear on the NZIoC.

#### Specific Controls

Non hazardous gases under pressure must comply with the relevant provisions of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

#### Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.

### 16. Other Information

#### Abbreviations

|                        |  |
|------------------------|--|
| <b>Approval Code</b>   | NA   |
| <b>CAS Number</b>      | Unique Chemical Abstracts Service Registry Number  |
| <b>EC<sub>50</sub></b> | Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)                      |
| <b>EPA</b>             | Environmental Protection Authority (New Zealand)   |
| <b>GHS</b>             | Globally Harmonised System of Classification and Labelling of Chemicals, 7 <sup>th</sup> revised edition, 2017, published by the United Nations. |
| <b>HAZCHEM Code</b>    | Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters                            |
| <b>HSNO</b>            | Hazardous Substances and New Organisms (Act and Regulations)   |
| <b>IARC</b>            | International Agency for Research on Cancer  |
| <b>LEL</b>             | Lower Explosive Limit  |
| <b>LD<sub>50</sub></b> | Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).  |
| <b>LC<sub>50</sub></b> | Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population   |

|           |  |
|-----------|--|
| NZIoC     | (usually rats)   |
| STEL      | New Zealand Inventory of Chemicals<br>Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded  |
| TWA       | Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)   |
| UEL       | Upper Explosive Limit  |
| UN Number | United Nations Number  |
| WES       | Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone. |

## References

|                   |   |
|-------------------|---|
| Data              | Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).  |
| Controls          | EPA notices, <a href="http://www.epa.govt.nz">www.epa.govt.nz</a> , Health and Safety at Work (Hazardous Substances) Regulations 2017, <a href="http://www.legislation.govt.nz">www.legislation.govt.nz</a> |
| WES               | The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their web site – <a href="http://www.worksafe.govt.nz">www.worksafe.govt.nz</a> .                                     |
| Other References: | Suppliers SDS   |

## Review

| Date          | Reason for review |
|---------------|-------------------|
| November 2023 | NA – new SDS      |

## Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely GHS 7 classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological). This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email [info@datachem.co.nz](mailto:info@datachem.co.nz) or phone: +64 21 1040951.

