SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:
- Trade name: Precision Calibration Gas Mixture G-14615A(EU)(LQ)

1.2 Relevant identified uses of the substance or mixture and uses advised against:
Used for calibration of gas measuring devices. Not suitable for human consumption.

1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Industrial Scientific
  1 Life Way
  Pittsburgh, PA 15205-7500
  1-412-788-4353
  1-800-DETECTS (338-3287)
  www.indsci.com

1.4 Emergency telephone number:
- Inside the US: 1-800-424-9300 (CHEMTREC, 24 hours)
- Outside the US: 1-703-527-3887 (CHEMTREC, 24 hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008

GHS04 gas cylinder
Press. Gas C H280 Contains gas under pressure; may explode if heated.

2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
  The product is classified and labelled according to the CLP regulation.
- Hazard pictograms

GHS04

- Signal word: Warning
- Hazard statements:
  H280 Contains gas under pressure; may explode if heated.
- Precautionary Statements:
  P410+P403 Protect from sunlight. Store in a well-ventilated place.
- Additional information:
  EUH044 Risk of explosion if heated under confinement.
  99.9 % of the mixture consists of component(s) of unknown toxicity.
  Contains 99.9 % of components with unknown hazards to the aquatic environment.

2.3 Other hazards: None known

Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.
SECTION 3: Composition/information on ingredients

· 3.1 Chemical characterisation: Mixtures
· Description: Mixture of substances listed below with nonhazardous additions.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>CAS: 7727-37-9</td>
<td>Nitrogen</td>
<td>76.45-80.49995%</td>
</tr>
<tr>
<td>EINECS: 231-783-9</td>
<td>Press. Gas D, H280</td>
<td></td>
</tr>
<tr>
<td>RTECS: QW 9700000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS: 7782-44-7</td>
<td>Oxygen</td>
<td>19.5-23.4%</td>
</tr>
<tr>
<td>EINECS: 231-956-9</td>
<td>Ox. Gas 1, H270; Press. Gas C, H280</td>
<td></td>
</tr>
<tr>
<td>Index number: 008-001-00-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS: 630-08-0</td>
<td>Carbon Monoxide</td>
<td>0.00005-0.15%</td>
</tr>
<tr>
<td>EINECS: 211-128-3</td>
<td>Flam. Gas 1, H220; Acute Tox. 3, H331; Repr. 1A, H360D; STOT RE 1, H372; Press. Gas C, H280</td>
<td></td>
</tr>
<tr>
<td>Index number: 006-001-00-2</td>
<td></td>
<td></td>
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<tr>
<td>RTECS: FG 3500000</td>
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</tbody>
</table>

· Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures
· After inhalation:
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:
  Generally the product does not irritate the skin.
  In cases of contact with liquified material, frostbite may occur. Immerse frostbite in cool-warm water and seek medical attention.

· After eye contact:
  Not anticipated under normal use.
  If irritation occurs thoroughly wash the exposed area and discontinue use. Seek medical attention if any adverse effect occurs.

· After swallowing:
  If swallowed and symptoms occur, consult a doctor.

· 4.2 Most important symptoms and effects, both acute and delayed
  No further relevant information available.

· 4.3 Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media
· Suitable extinguishing agents:
  Use water spray to cool fire-exposed containers.
  Use fire fighting measures that suit the environment.

· For safety reasons unsuitable extinguishing agents: No further relevant information available.

· 5.2 Special hazards arising from the substance or mixture
  Cosed containers may explode when exposed to extreme heat.
  If incinerated, product will release the following toxic fumed: Oxides of Carbon and Nitrogen (NOx).

· 5.3 Advice for firefighters
  This gas mixture is not flammable; however, container, when involved in fire, may rupture or burst in the heat of the fire. Firefighters should be aware of the presence of Hydrogen Sulfide in the gas mixture, which can cause significant health effects.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation.
Wear protective equipment. Keep unprotected persons away.
Treat any fumes as toxic.
Keep people at a distance and stay on the windward side.

6.2 Environmental precautions: Inform authorities in case of gas release.

6.3 Methods and material for containment and cleaning up:
Dispose contaminated materials as waste according to item 13.
Ensure adequate ventilation.
Dispose of the material collected according to regulations.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.

Information about fire and explosion protection:
Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric
lights. Do not pierce or burn, even after use.
Keep respiratory protective device available.
Do not spray onto a naked flame or any incandescent material.
Do not cut, grind or weld on container that contains or contained product.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles:
Cylinders should be firmly secured to prevent falling or being knocked over. Cylinders must be protected from
the environment, and preferably kept at room temperature. Cylinders should be stored in dry, well-ventilated
areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against against physical
damage. Full and empty cylinders should be segregated. Use a "first-in, first-out" inventory system to prevent
full containers from being stored for long periods of time.
Store in a cool location.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.
Trade name: Precision Calibration Gas Mixture G-14615A(EU)(LQ)

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>630-08-0 Carbon Monoxide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IOELV</strong></td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Respiratory protection: Not required.
Protection of hands: Not required.
Material of gloves: Not required.
Penetration time of glove material: Not applicable.
Eye protection: Not necessary under normal conditions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:
Form: Gaseous
Colour: Colorless
Odour: Odourless

Change in condition
Melting point/freezing point: Not determined.
Initial boiling point and boiling range: Not determined.

Flash point: Not applicable.
Flammability (solid, gas): Contact with combustible material may cause fire.
Decomposition temperature: Not determined.
Auto-ignition temperature: Product is not self-igniting.
Explosive properties: Not determined.
Explosion limits:
Lower: Not determined.
Upper: Not determined.

Vapour pressure: Not determined.

Density:
Relative density: Not determined.
Vapour density: Not determined.
Evaporation rate: Not applicable.

Solubility in / Miscibility with water: Not miscible or difficult to mix.
Trade name: Precision Calibration Gas Mixture G-14615A(EU)(LQ)

- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity:**
  - **Dynamic:** Not determined.
  - **Kinematic:** Not determined.
- **Solvent content:**
  - **Organic solvents:** 0.0 %
- **9.2 Other information**
  - No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity:** No further relevant information available.
- **10.2 Chemical stability:** Stable under normal conditions.
- **10.3 Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.4 Conditions to avoid:** No further relevant information available.
- **10.5 Incompatible materials:** Strong oxidizing agents, phosphorus, organic materials, Alkali metals, metal oxides and powdered metals.
- **10.6 Hazardous decomposition products:** Carbon Oxides and Nitrogen Oxides (NOx).

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
  - **LD/LC50 values relevant for classification:**
    - 630-08-0 Carbon Monoxide
      - Inhalative [LC50/4 h] 7520 mg/l (Rat)
  - **Primary irritant effect:**
    - **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
    - **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
    - **Sensitisation:** Based on available data, the classification criteria are not met.
    - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
      - **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
      - **Carcinogenicity** Based on available data, the classification criteria are not met.
    - **Reproductive toxicity** Based on available data, the classification criteria are not met.
    - **STOT (Specific target organ toxicity)-single exposure**
      - Based on available data, the classification criteria are not met.
    - **STOT (Specific target organ toxicity)-repeated exposure**
      - Based on available data, the classification criteria are not met.
    - **Aspiration hazard** Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

- **12.1 Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - **General notes:**
    - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
    - Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
46.1.0.1 Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

12.6 Other adverse effects
No further relevant information available.

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods
**Recommendation:**
Release all residual gas pressure in a well ventilated area. Verify cylinder is completely empty (0 PSIG). Remove or cover any hazard labels. Return empty cylinder for recycling.

*NOTE:* Check with the local easte authority before placing any gas cylinder into waste container for pickup. Industrial Scientific encourages the consumer to return all cylinders.

**Uncleaned packaging:**
**Recommendation:** Return cylinder and unused product to supplier.

**SECTION 14: Transport information**

14.1 UN-Number
- **ADR/ADN, IMDG, IATA**
- **UN1956**

14.2 UN proper shipping name
- **ADR/ADN**
- UN1956 COMPRESSED GAS, N.O.S. (NITROGEN, OXYGEN)
- **IMDG, IATA**
- COMPRESSED GAS, N.O.S. (NITROGEN, OXYGEN)

14.3 Transport hazard class(es)
- **ADR/ADN**
  - Limited Quantity: 120 mls per Packing Instruction P200
  - **Class** 2.2 1A
  - **Label** 2.2

- **IMDG**
  - Limited Quantity: 120 mls per Packing Instruction P200
  - **Class** 2.2

(Contd. on page 7)
Trade name: Precision Calibration Gas Mixture G-14615A(EU)(LQ)

· Label  
2.2

· IATA

Limited Quantity: Forbidden
· Class  
2.2
· Label  
2.2
· 14.4 Packing group
· ADR/ADN, IMDG, IATA  
Non-Regulated Material
· 14.5 Environmental hazards:  
Not applicable.
· 14.6 Special precautions for user  
Not applicable.
· Danger code (Kemler):  
20
· EMS Number:  
F-C,S-V
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code  
Not applicable.
· Transport/Additional information:

· ADR/ADN
· Limited quantities (LQ)  
120 ml
· Excepted quantities (EQ)  
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
3
· Transport category
· Tunnel restriction code  
E
· Remarks:  
Limited Quantity: 120 mls per Packing Instruction P200

· IMDG
· Limited quantities (LQ)  
120 ml
· Excepted quantities (EQ)  
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
3
· Remarks:  
Limited Quantity: 120 mls per Packing Instruction P200

· IATA
· UN "Model Regulation":  
Limited Quantity: Forbidden
UN 1956 COMPRESSED GAS, N.O.S. (NITROGEN, OXYGEN), 2.2

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
· Directive 2012/18/EU
· Named dangerous substances - ANNEX I None of the ingredients are listed.
· National regulations:

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

(Contd. on page 8)
SECTION 16: Other information

- **Relevant phrases**
  - H220 Extremely flammable gas.
  - H270 May cause or intensify fire; oxidiser.
  - H280 Contains gas under pressure; may explode if heated.
  - H331 Toxic if inhaled.
  - H360D May damage the unborn child.
  - H372 Causes damage to organs through prolonged or repeated exposure.

- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Flam. Gas 1: Flammable gases – Category 1
  - Ox. Gas 1: Oxidizing gases – Category 1
  - Press. Gas C: Gases under pressure – Compressed gas
  - Press. Gas D: Gases under pressure – Dissolved gas
  - Acute Tox. 3: Acute toxicity – Category 3
  - Repr. 1A: Reproductive toxicity – Category 1A
  - STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

- *Data compared to the previous version altered.*

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