

Classified as hazardous in accordance with the criteria of EPA New Zealand

## Section 1 - Identification

### Product Identifier

**Product Name** Calibration gas mixture H2S in N2

**Recommended Use** Calibration of Equipment.  
**Uses advised against** No Information available

<b>Product Code</b>	<b>ALQ003347</b>
<b>Address</b>	Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand
<b>Emergency Tel.</b>	<b>CHEMTREC®</b> <b>09 980 6780 or +64 9 980 6780</b>
<b>Telephone / Fax Numbers</b>	Tel: 09 980 6700 Fax: 09 980 6788
<b>E-mail address</b>	<u>ANZinfo@thermofisher.com</u>

## Section 2 - Hazard(s) Identification

### Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

**HSNO Approval Number** **HSR002534**

### GHS Classification

#### Physical hazards

Oxidizing gases Category 1

#### Health hazards

Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity - (repeated exposure)	Category 2

#### Environmental hazards

Based on available data, the classification criteria are not met

### Label Elements

**Signal Word****Danger****Hazard Statements**

H270 - May cause or intensify fire; oxidizer

H351 - Suspected of causing cancer

H373 - May cause damage to organs through prolonged or repeated exposure

H341 - Suspected of causing genetic defects if inhaled

H361 - Suspected of damaging fertility or the unborn child

**Precautionary Statements****Prevention**

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P220 - Keep away from clothing and other combustible materials

P244 - Keep valves and fittings free from oil and grease

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P308 + P313 - IF exposed or concerned: Get medical advice/attention

P370 + P376 - In case of fire: Stop leak if safe to do so

**Storage**

P403 - Store in a well-ventilated place

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards which do not result in classification**

This product does not contain any known or suspected endocrine disruptors

## Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Nitrogen	7727-37-9	>75
Oxygen	7782-44-7	<23.5
Methane	74-82-8	<2.5
Hydrogen sulfide	7783-06-4	0.0005-0.025

## Section 4 - First Aid Measures

**Description of first aid measures****New Zealand Emergency Tel.**CHEMTREC®  
09 980 6780 or +64 9 980 6780**Inhalation**

Remove to fresh air. Get medical attention immediately if symptoms occur.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Self-Protection of the First Aider</b>	No special precautions required.
<b>First Aid Facilities</b>	Eyewash, safety shower and washroom.
<b>Most important symptoms and effects</b>	None reasonably foreseeable.
<b>Notes to Physician</b>	Treat symptomatically.

## Section 5 - Fire Fighting Measures

### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

### **Extinguishing media which must not be used for safety reasons**

No information available.

### **Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors.

### **Hazardous Combustion Products**

None under normal use conditions.

### **Special protective equipment and precautions for fire fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6 - Accidental Release Measures

### **Personal Precautions, Protective Equipment and Emergency Procedures**

#### **Emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

#### **Environmental Precautions**

Should not be released into the environment.

#### **Methods for Containment and Clean Up**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

#### **Precautions to prevent secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations

#### **Reference to Other Sections**

Refer to protective measures listed in Sections 8 and 13.

## Section 7 - Handling and Storage

### **Precautions for Safe Handling**

#### **Advice on safe handling**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before

re-use. Wash hands before breaks and after work.

### Conditions for Safe Storage, Including any Incompatibilities

#### Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place.

#### Incompatible Materials

None known.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

## Section 8 - Exposure Controls and Personal Protection

### Control parameters

#### Exposure limits

**NZ** - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

**UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

**AUS** - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

**ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

Component	New Zealand WEL	Australia	ACGIH TLV	The United Kingdom
Nitrogen			:	
Methane			:	
Hydrogen sulfide	TWA: 5 ppm TWA: 7 mg/m <sup>3</sup> STEL: 10 ppm STEL: 14 mg/m <sup>3</sup>	STEL: 15 ppm STEL: 21 mg/m <sup>3</sup> TWA: 10 ppm TWA: 14 mg/m <sup>3</sup>	TWA: 1 ppm STEL: 5 ppm	STEL: 10 ppm 15 min STEL: 14 mg/m <sup>3</sup> 15 min TWA: 5 ppm 8 hr TWA: 7 mg/m <sup>3</sup> 8 hr

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

### Appropriate engineering controls

#### Engineering Measures

None under normal use conditions.

### Individual protection measures, such as personal protective equipment

#### Eye Protection

Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Disposable gloves.	See manufacturers recommendations	-	AS/NZS 2161	(minimum requirement)

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

#### Skin and body protection

Long sleeved clothing

**Respiratory Protection**

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices

**Recommended Filter type:**

Particle filter (or AUS/NZ equivalent)

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No information available.

## Section 9 - Physical and Chemical Properties

### Information on basic physical and chemical properties

**Physical State**

Gas

**Appearance**

Colorless

**Odor**

No information available

**Odor Threshold**

No data available

**pH**

Not applicable

**Melting Point/Range**

No data available -210 °C / -346 °F

**Softening Point**

No data available

**Boiling Point/Range**

Not applicable -195.8 °C / -320.4 °F

**Flammability (liquid)**

No data available

**Flammability (solid,gas)**

No information available

**Explosion Limits**

No data available

**Flash Point**

Not applicable

**Method -** No information available

**Autoignition Temperature**

No data available

**Decomposition Temperature**

No data available

**Viscosity**

No data available

**Water Solubility**

No information available

**Solubility in other solvents**

No information available

**Partition Coefficient (n-octanol/water)****Component**

**log Pow**

Methane

1.09

Hydrogen sulfide

0.45

**Vapor Pressure**

No data available

**Density / Specific Gravity**

No data available

**Bulk Density**

No data available

**Vapor Density**

No data available

(Air = 1.0)

**Particle characteristics**

No data available

### Other information

## Section 10 - Stability and Reactivity

**Reactivity**

Yes

**Stability**

Stable under normal conditions.

**Sensitivity to Mechanical Impact**

No information available

**Sensitivity to Static Discharge**

No information available

**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Hazardous Reactions**

None under normal processing.

**Conditions to Avoid** Incompatible products, Excess heat, Avoid dust formation.

**Incompatible Materials** None known.

**Hazardous Decomposition Products** None under normal use conditions.

## Section 11 - Toxicological Information

### Acute Effects

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Not an expected route of exposure.
<b>Eyes</b>	Not an expected route of exposure.
<b>Skin</b>	No known effect based on information supplied.
<b>Ingestion</b>	Not an expected route of exposure.

### Numerical measures of toxicity

#### (a) acute toxicity;

<b>Oral</b>	Based on available data, the classification criteria are not met
<b>Dermal</b>	No data available
<b>Inhalation</b>	No data available

### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methane		LD50 > 2000 mg/kg ( Rat )	LC50 = 539600 ppm ( Rat ) 2 h
Hydrogen sulfide			712 ppm/1 hr ( Rat )

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

#### (d) respiratory or skin sensitization;

<b>Respiratory</b>	No data available
<b>Skin</b>	No data available

(e) germ cell mutagenicity; No data available

#### (f) carcinogenicity;

Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

#### (i) STOT-repeated exposure;

Category 2

**Target Organs** No information available.

(j) aspiration hazard; No data available

#### Symptoms / effects, both acute and delayed

No information available.

## Section 12 - Ecological Information

### Ecotoxicity

#### Aquatic ecotoxicity

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Hydrogen sulfide	LC50: = 0.016 mg/L, 96h flow-through (Pimephales promelas) LC50: = 0.0448 mg/L, 96h flow-through (Lepomis macrochirus)			

#### Terrestrial ecotoxicity

There is no data for this product

#### Persistence and Degradability

No information available

#### Persistence

Persistence is unlikely, based on information available.

#### Bioaccumulative Potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Methane	1.09	No data available
Hydrogen sulfide	0.45	No data available

#### Mobility

The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air

### Other adverse effects

#### Endocrine Disruptor Information Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected endocrine disruptors  
This product does not contain any known or suspected substance  
This product does not contain any known or suspected substance

## Section 13 - Disposal Considerations

### Waste treatment methods

#### Waste from Residues/Unused Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

#### Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

#### Other Information

Disposal agencies or waste contractors must comply with the New Zealand Hazardous

Substances (Disposal) Regulations . Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

## Section 14 - Transport Information

Component	Hazchem Code
Nitrogen 7727-37-9 ( >75 )	2T
Oxygen 7782-44-7 ( <23.5 )	2S 2P
Methane 74-82-8 ( <2.5 )	2SE 2YE
Hydrogen sulfide 7783-06-4 ( 0.0005-0.025 )	2WE

### NZS 5433:2020

UN-No UN1956  
 Proper Shipping Name Compressed gas, n.o.s.  
 Technical Shipping Name Contains Nitrogen and Oxygen  
 Hazard Class 2.2

### IATA

UN-No UN1956  
 Proper Shipping Name Compressed gas, n.o.s.  
 Technical Shipping Name Contains Nitrogen and Oxygen  
 Hazard Class 2.2

### IMDG/IMO

UN-No UN1956  
 Proper Shipping Name Compressed gas, n.o.s.  
 Technical Shipping Name Contains Nitrogen and Oxygen  
 Hazard Class 2.2

Environmental hazards No hazards identified

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable, packaged goods

Special Precautions No special precautions required. Please refer to the applicable dangerous goods regulations for additional information.

Additional information None known

## Section 15 - Regulatory Information

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

HSNO Approval Number	HSR002534
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### **National Regulations**

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

### **Certified handlers, tracking and controlled substance license requirements**

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is



required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

#### Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licensing requirements when they apply.

#### International Regulations

**Ozone Depletion Potential** This product does not contain any known or suspected substance

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Rotterdam Convention (PIC)** Not applicable

Component	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	IMDG Marine Pollutant
Oxygen	200 tonne	2000 tonne	
Hydrogen sulfide	5 tonne	20 tonne	

**Authorisation/Restrictions according to EU REACH** Not applicable

#### International Inventories

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	NZIoC	AICS	EINECS	ELINCS	NLP	KECL	IECSC	TCSI
Nitrogen	7727-37-9	X	X	231-783-9	-	-	KE-25994	X	X
Oxygen	7782-44-7	X	X	231-956-9	-	-	KE-27737	X	X
Methane	74-82-8	X	X	200-812-7	-	-	KE-23181	X	X
Hydrogen sulfide	7783-06-4	X	X	231-977-3	-	-	KE-20209	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	PICCS	ISHL	ENCS
Nitrogen	7727-37-9	X	ACTIVE	X	-	X	-	X
Oxygen	7782-44-7	X	ACTIVE	X	-	X	-	X
Methane	74-82-8	X	ACTIVE	X	-	X	X	X
Hydrogen sulfide	7783-06-4	X	ACTIVE	X	-	X	X	X

**Legend:** X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

## Section 16 - Other Information

**This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations**

#### Legend

**NZIoC** - New Zealand Inventory of Chemicals

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**IECSC** - Chinese Inventory of Existing Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**AICS** - Australian Inventory of Chemical Substances

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**CAS** - Chemical Abstracts Service

**ACGIH** - American Conference of Governmental Industrial Hygienists

**PNEC** - Predicted No Effect Concentration

**NZS 5433:2020** - Transport of Dangerous Goods on Land

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**WEL** - Workplace Exposure Limit

**DNEL** - Derived No Effect Level

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**VOC** - (Volatile Organic Compound)

**OECD** - Organisation for Economic Co-operation and Development

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**ADG** - Australian Code for the Transport of Dangerous Goods by Road and Rail

**LC50** - Lethal Concentration 50%

**ATE** - Acute Toxicity Estimate

**RPE** - Respiratory Protective Equipment

**NOEC** - No Observed Effect Concentration

**BCF** - Bioconcentration factor

**PBT** - Persistent, Bioaccumulative, Toxic

#### Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

#### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

**Physical hazards** On basis of test data

**Health Hazards** Calculation method

**Environmental hazards** Calculation method

#### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

**Revision Date** 14-Jul-2023

**Revision Summary** Update to GHS format

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

## End of Safety Data Sheet