

# SAFETY DATA SHEET



Praxair UNIV/NGA Calibration Mix Cylinders, Part Number 5184-3544

## Section 1. Identification

**Product identifier** : Praxair UNIV/NGA Calibration Mix Cylinders, Part Number 5184-3544  
**Part No. (Chemical Kit)** : 5184-3544  
**Part No.** : Universal Calibration Mix 5184-3541  
 Praxair NGA Natural Gas Analyzer Mix 5184-3536 / 5184-3542

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

Analytical chemistry.

Universal Calibration Mix 1 L Cylinder  
 Praxair NGA Natural Gas Analyzer Mix 1 L Cylinder

**Supplier/Manufacturer** : Agilent Technologies Australia Pty Ltd  
 679 Springvale Road  
 Mulgrave  
 Victoria 3170, Australia  
 1800 802 402

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(61)-290372994

## Section 2. Hazard(s) identification

### Classification of the substance or mixture



Universal Calibration Mix  
 H220 FLAMMABLE GASES - Category 1  
 H280 GASES UNDER PRESSURE - Compressed gas

Praxair NGA Natural Gas Analyzer Mix  
 H220 FLAMMABLE GASES - Category 1  
 H280 GASES UNDER PRESSURE - Compressed gas

Praxair NGA Natural Gas Analyzer Mix Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%  
 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%  
 Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%  
 Praxair NGA Natural Gas Analyzer Mix Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.5%

### GHS label elements

#### Hazard pictograms

Universal Calibration Mix   
 Praxair NGA Natural Gas Analyzer Mix 

**Signal word** : Universal Calibration Mix DANGER  
 Praxair NGA Natural Gas Analyzer Mix DANGER

## Section 2. Hazard(s) identification

|  |   |  |
|--|---|--|
| <b>Hazard statements</b>                                   | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | H220 - Extremely flammable gas.<br>H280 - Contains gas under pressure; may explode if heated.<br>H220 - Extremely flammable gas.<br><br>H280 - Contains gas under pressure; may explode if heated.   |
| <b>Precautionary statements</b>                            |   |  |
| <b>Prevention</b>  | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.   |
| <b>Response</b>  | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.<br>P381 - Eliminate all ignition sources if safe to do so.<br>P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.<br>P381 - Eliminate all ignition sources if safe to do so. |
| <b>Storage</b>   | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | P410 - Protect from sunlight.<br>P403 - Store in a well-ventilated place.<br>P410 - Protect from sunlight.<br><br>P403 - Store in a well-ventilated place.   |
| <b>Disposal</b>  | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not applicable.<br>Not applicable.   |
| <b>Supplemental label elements</b>                         | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not applicable.<br>Not applicable.   |
| <b>Other hazards which do not result in classification</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Acts as a simple asphyxiant. At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.<br>Acts as a simple asphyxiant. At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.                   |

## Section 3. Composition and ingredient information

|                          |   |                    |
|--------------------------|---|--------------------|
| <b>Substance/mixture</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | Mixture<br>Mixture |
|--------------------------|---|--------------------|

### CAS number/other identifiers

| Ingredient name  | % (v/v)   | CAS number |
|--|-----------|------------|
| <input checked="" type="checkbox"/> Universal Calibration Mix<br>Methane | ≥90       | 74-82-8    |
| <b>Praxair NGA Natural Gas Analyzer Mix</b><br>Methane                   | ≥60 - ≤75 | 74-82-8    |
| Ethane   | ≤10       | 74-84-0    |
| Propane  | ≤10       | 74-98-6    |
| Nitrogen   | ≤10       | 7727-37-9  |
| Isobutane  | ≤5        | 75-28-5    |
| Butane   | ≤3        | 106-97-8   |
| Carbon dioxide   | ≤3        | 124-38-9   |
| Isopentane   | <1        | 78-78-4    |
| pentane  | <1        | 109-66-0   |

## Section 3. Composition and ingredient information

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

|                     |   |  |
|---------------------|---|--|
| <b>Eye contact</b>  | :  Universal Calibration Mix   | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.   |
|                     | Praxair NGA Natural Gas Analyzer Mix  | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.   |
| <b>Inhalation</b>   | :  Universal Calibration Mix   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.   |
|                     | Praxair NGA Natural Gas Analyzer Mix  | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| <b>Skin contact</b> | :  Universal Calibration Mix | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.  |
|                     | Praxair NGA Natural Gas Analyzer Mix  | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly  |

## Section 4. First aid measures

**Ingestion** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix

before reuse.  
As this product is a gas, refer to the inhalation section.  
As this product is a gas, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
Contact with rapidly expanding gas may cause burns or frostbite.  
Contact with rapidly expanding gas may cause burns or frostbite.

**Inhalation** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.  
At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.

**Skin contact** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
Contact with rapidly expanding gas may cause burns or frostbite.  
Contact with rapidly expanding gas may cause burns or frostbite.

**Ingestion** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
As this product is a gas, refer to the inhalation section.  
As this product is a gas, refer to the inhalation section.

#### Over-exposure signs/symptoms

**Eye contact** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
No specific data.  
No specific data.

**Inhalation** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
No specific data.  
No specific data.

**Skin contact** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
No specific data.  
No specific data.

**Ingestion** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
No specific data.  
No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  
In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
No specific treatment.  
No specific treatment.

**Protection of first-aiders** : Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix  
No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.  
No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person

## Section 4. First aid measures

providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

|   |   |  |
|---|---|--|
| <b>Suitable extinguishing media</b>                 | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Use an extinguishing agent suitable for the surrounding fire.<br>Use an extinguishing agent suitable for the surrounding fire.   |
| <b>Unsuitable extinguishing media</b>               | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | None known.<br>None known.   |
| <b>Specific hazards arising from the chemical</b>   | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.<br>Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.   |
| <b>Hazardous thermal decomposition products</b>     | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>nitrogen oxides  |
| <b>Special protective actions for fire-fighters</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.<br>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so. |

## Section 5. Firefighting measures

|   |   |  |
|---|---|--|
| <b>Special protective equipment for fire-fighters</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.<br><br>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| <b>Hazchem code</b>                                   | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | 2SE<br>2SE   |

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

|                                    |   |  |
|------------------------------------|---|--|
| <b>For non-emergency personnel</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.<br><br>Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| <b>For emergency responders</b>    | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".<br><br>If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".   |
| <b>Environmental precautions</b>   | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).<br><br>Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).   |

### Methods and material for containment and cleaning up

## Section 6. Accidental release measures

|                                |   |  |
|--------------------------------|---|--|
| <b>Methods for cleaning up</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix | Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. |
|                                | Praxair NGA Natural Gas Analyzer Mix                            | Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. |

## Section 7. Handling and storage

### Precautions for safe handling

|   |   |   |
|---|---|---|
| <b>Protective measures</b>  | : <input checked="" type="checkbox"/> Universal Calibration Mix | Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. |
|   | Praxair NGA Natural Gas Analyzer Mix                            | Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. |
| <b>Advice on general occupational hygiene</b>                       | : <input checked="" type="checkbox"/> Universal Calibration Mix | Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.   |
|   | Praxair NGA Natural Gas Analyzer Mix                            | Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.   |
| <b>Conditions for safe storage, including any incompatibilities</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix | Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.  |
|   | Praxair NGA Natural Gas Analyzer Mix                            | Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly   |

## Section 7. Handling and storage

closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name  | Exposure limits   |
|--|---|
| <input checked="" type="checkbox"/> Universal Calibration Mix<br>Methane | <b>Safe Work Australia (Australia, 1/2014).<br/>Oxygen Depletion [Asphyxiant].</b>  |
| <b>Praxair NGA Natural Gas Analyzer Mix</b><br>Methane                   | <b>Safe Work Australia (Australia, 1/2014).<br/>Oxygen Depletion [Asphyxiant].</b>  |
| Ethane   | <b>Safe Work Australia (Australia, 1/2014).<br/>Oxygen Depletion [Asphyxiant].</b>  |
| Propane  | <b>Safe Work Australia (Australia, 1/2014).<br/>Oxygen Depletion [Asphyxiant].</b>  |
| Nitrogen   | <b>Safe Work Australia (Australia, 1/2014).<br/>Oxygen Depletion [Asphyxiant].</b>  |
| Isobutane  | <b>ACGIH TLV (United States, 3/2016).<br/>STEL: 1000 ppm 15 minutes.</b>  |
| Butane   | <b>Safe Work Australia (Australia, 1/2014).<br/>TWA: 1900 mg/m<sup>3</sup> 8 hours.<br/>TWA: 800 ppm 8 hours.</b>   |
| Carbon dioxide   | <b>Safe Work Australia (Australia, 1/2014).<br/>STEL: 54000 mg/m<sup>3</sup> 15 minutes.<br/>STEL: 30000 ppm 15 minutes.<br/>TWA: 9000 mg/m<sup>3</sup> 8 hours.<br/>TWA: 5000 ppm 8 hours.</b> |
| Isopentane   | <b>ACGIH TLV (United States, 3/2016).<br/>TWA: 1000 ppm 8 hours.</b>  |
| pentane  | <b>Safe Work Australia (Australia, 1/2014).<br/>STEL: 2210 mg/m<sup>3</sup> 15 minutes.<br/>STEL: 750 ppm 15 minutes.<br/>TWA: 1770 mg/m<sup>3</sup> 8 hours.<br/>TWA: 600 ppm 8 hours.</b>     |

### Appropriate engineering controls

- Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Environmental exposure controls

- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.



## Section 8. Exposure controls and personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Universal Calibration Mix Gas.  
Praxair NGA Natural Gas Gas.  
Analyzer Mix
- Colour** : Universal Calibration Mix Not available.  
Praxair NGA Natural Gas Not available.  
Analyzer Mix
- Odour** : Universal Calibration Mix Not available.  
Praxair NGA Natural Gas Not available.  
Analyzer Mix
- Odour threshold** : Universal Calibration Mix Not available.  
Praxair NGA Natural Gas Not available.  
Analyzer Mix
- pH** : Universal Calibration Mix Not available.  
Praxair NGA Natural Gas Not available.  
Analyzer Mix
- Melting point** : Universal Calibration Mix Not available.  
Praxair NGA Natural Gas Not available.  
Analyzer Mix
- Boiling point** : Universal Calibration Mix Not available.  
Praxair NGA Natural Gas Not available.  
Analyzer Mix
- Flash point** : Universal Calibration Mix Closed cup: <-18°C (<-0.4°F)  
Praxair NGA Natural Gas Closed cup: <-18°C (<-0.4°F)  
Analyzer Mix
- Evaporation rate** : Universal Calibration Mix Not available.  
Praxair NGA Natural Gas Not available.  
Analyzer Mix

## Section 9. Physical and chemical properties

|   |   |  |
|---|---|--|
| <b>Flammability (solid, gas)</b>                    | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.<br>Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. |
| <b>Lower and upper explosive (flammable) limits</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |
| <b>Vapour pressure</b>                              | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |
| <b>Vapour density</b>                               | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |
| <b>Relative density</b>                             | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |
| <b>Solubility</b>                                   | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Very slightly soluble in the following materials: cold water and hot water.<br>Not available.  |
| <b>Partition coefficient: n-octanol/water</b>       | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |
| <b>Auto-ignition temperature</b>                    | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |
| <b>Decomposition temperature</b>                    | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |
| <b>Viscosity</b>                                    | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Not available.<br>Not available.   |

## Section 10. Stability and reactivity

|   |   |   |
|---|---|---|
| <b>Reactivity</b>                         | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | No specific test data related to reactivity available for this product or its ingredients.<br>No specific test data related to reactivity available for this product or its ingredients.  |
| <b>Chemical stability</b>                 | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | The product is stable.<br>The product is stable.  |
| <b>Possibility of hazardous reactions</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Under normal conditions of storage and use, hazardous reactions will not occur.  |
| <b>Conditions to avoid</b>                | : <input checked="" type="checkbox"/> Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Avoid all possible sources of ignition (spark or flame).<br>Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.<br>Do not allow gas to accumulate in low or confined areas.<br>Avoid all possible sources of ignition (spark or flame).<br>Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.<br>Do not allow gas to accumulate in low or confined |

## Section 10. Stability and reactivity

areas.

**Incompatible materials** : Universal Calibration Mix  
Praxair NGA Natural Gas  
Analyzer Mix  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.

**Hazardous decomposition products** : Universal Calibration Mix  
Praxair NGA Natural Gas  
Analyzer Mix  
Under normal conditions of storage and use,  
hazardous decomposition products should not be  
produced.  
Under normal conditions of storage and use,  
hazardous decomposition products should not be  
produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name                 | Result                 | Species | Dose                     | Exposure |
|---|------------------------|---------|--------------------------|----------|
| Praxair NGA Natural Gas<br>Analyzer Mix |                        |         |                          |          |
| Isobutane                               | LC50 Inhalation Vapour | Rat     | 658000 mg/m <sup>3</sup> | 4 hours  |
| Butane                                  | LC50 Inhalation Vapour | Rat     | 658000 mg/m <sup>3</sup> | 4 hours  |
| Isopentane                              | LC50 Inhalation Vapour | Rat     | 280000 mg/m <sup>3</sup> | 4 hours  |
| pentane                                 | LC50 Inhalation Vapour | Rat     | 364 g/m <sup>3</sup>     | 4 hours  |

#### Irritation/Corrosion

Not available.

#### Sensitisation

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

| Name                                 | Category   | Route of exposure | Target organs    |
|--------------------------------------|------------|-------------------|------------------|
| Praxair NGA Natural Gas Analyzer Mix |            |                   |                  |
| Isopentane                           | Category 3 | Not applicable.   | Narcotic effects |
| pentane                              | Category 3 | Not applicable.   | Narcotic effects |

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

| Name                                 | Result                         |
|--------------------------------------|--------------------------------|
| Praxair NGA Natural Gas Analyzer Mix |                                |
| Isopentane                           | ASPIRATION HAZARD - Category 1 |
| pentane                              | ASPIRATION HAZARD - Category 1 |

## Section 11. Toxicological information

|   |   |  |
|---|---|--|
| <b>Information on likely routes of exposure</b> | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | Routes of entry anticipated: Inhalation.<br>Routes of entry anticipated: Inhalation.   |
| <b>Potential acute health effects</b>           |   |  |
| <b>Eye contact</b>                              | : Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Contact with rapidly expanding gas may cause burns or frostbite.<br>Contact with rapidly expanding gas may cause burns or frostbite.   |
| <b>Inhalation</b>                               | : Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.<br>At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen. |
| <b>Skin contact</b>                             | : Universal Calibration Mix<br><br>Praxair NGA Natural Gas Analyzer Mix | Contact with rapidly expanding gas may cause burns or frostbite.<br>Contact with rapidly expanding gas may cause burns or frostbite.   |
| <b>Ingestion</b>                                | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix     | As this product is a gas, refer to the inhalation section.<br>As this product is a gas, refer to the inhalation section.   |

### Symptoms related to the physical, chemical and toxicological characteristics

|                     |   |  |
|---------------------|---|--|
| <b>Eye contact</b>  | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | No specific data.<br>No specific data. |
| <b>Inhalation</b>   | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | No specific data.<br>No specific data. |
| <b>Skin contact</b> | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | No specific data.<br>No specific data. |
| <b>Ingestion</b>    | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | No specific data.<br>No specific data. |

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

|                        |   |  |
|------------------------|---|--|
| <b>General</b>         | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | No known significant effects or critical hazards.<br>No known significant effects or critical hazards. |
| <b>Carcinogenicity</b> | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | No known significant effects or critical hazards.<br>No known significant effects or critical hazards. |
| <b>Mutagenicity</b>    | : Universal Calibration Mix<br>Praxair NGA Natural Gas Analyzer Mix | No known significant effects or critical hazards.<br>No known significant effects or critical hazards. |

## Section 11. Toxicological information

|                              |  |  |
|------------------------------|--|--|
| <b>Teratogenicity</b>        | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas<br>Analyzer Mix | No known significant effects or critical hazards.<br>No known significant effects or critical hazards. |
| <b>Developmental effects</b> | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas<br>Analyzer Mix | No known significant effects or critical hazards.<br>No known significant effects or critical hazards. |
| <b>Fertility effects</b>     | : <input checked="" type="checkbox"/> Universal Calibration Mix<br>Praxair NGA Natural Gas<br>Analyzer Mix | No known significant effects or critical hazards.<br>No known significant effects or critical hazards. |

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

| Product/ingredient name   | Result                                     | Species   | Exposure             |
|---|--|---|----------------------|
| <input checked="" type="checkbox"/> Praxair NGA Natural Gas<br>Analyzer Mix<br>Isopentane | Acute EC50 2.3 mg/l<br>Acute LC50 3.1 mg/l | Daphnia - Daphnia magna<br>Fish - Oncorhynchus mykiss | 48 hours<br>96 hours |

### Persistence and degradability

| Product/ingredient name  | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
| <input checked="" type="checkbox"/> Praxair NGA Natural Gas<br>Analyzer Mix<br>pentane | -                 | -          | Readily          |

### Bioaccumulative potential

| Product/ingredient name  | LogP <sub>ow</sub> | BCF | Potential |
|--|--------------------|-----|-----------|
| <input checked="" type="checkbox"/> Universal Calibration Mix<br>Methane | 1.09               | 2   | low       |
| <b>Praxair NGA Natural Gas<br/>Analyzer Mix</b><br>Methane               | 1.09               | 2   | low       |
| Ethane   | 1.09               | -   | low       |
| Propane  | 1.09               | -   | low       |
| Nitrogen   | 0.67               | -   | low       |
| Isobutane  | 2.8                | -   | low       |
| Butane   | 2.89               | -   | low       |
| Carbon dioxide   | 0.83               | -   | low       |
| Isopentane   | 3                  | 171 | low       |
| pentane  | 3.45               | 171 | low       |

### Mobility in soil




**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** :  No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

|                                   | ADG   | IMDG  | IATA  |
|-----------------------------------|---|---|---|
| <b>UN number</b>                  | UN1954  | UN1954  | UN1954  |
| <b>UN proper shipping name</b>    | COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Ethane)                                       | COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Ethane)                                       | Compressed gas, flammable, n.o.s. (Methane, Ethane)   |
| <b>Transport hazard class(es)</b> | 2.1<br> | 2.1<br> | 2.1<br> |
| <b>Packing group</b>              | -   | -   | -   |
| <b>Environmental hazards</b>      | No.   | No.   | No.   |

### Additional information

**ADG** : **Hazchem code** 2SE  
**Special provisions** 274

**IMDG** : **Emergency schedules** F-D, S-U  
**Special provisions** 274

**IATA** : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Packaging instructions: Forbidden. Cargo Aircraft Only: 150 kg. Packaging instructions: 200. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden.  
**Special provisions** A1

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

Not regulated.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

## Section 15. Regulatory information

Not listed.

### Montreal Protocol (Annexes A, B, C, E)

Not listed.

### Stockholm Convention on Persistent Organic Pollutants

Not listed.

### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

|                          |   |
|--------------------------|---|
| <b>Australia</b>         | : All components are listed or exempted.  |
| <b>Canada</b>            | : All components are listed or exempted.  |
| <b>China</b>             | : Not determined.   |
| <b>Europe</b>            | : All components are listed or exempted.  |
| <b>Japan</b>             | : <input checked="" type="checkbox"/> <b>Japan inventory (ENCS)</b> : All components are listed or exempted.<br><b>Japan inventory (ISHL)</b> : Not determined. |
| <b>Malaysia</b>          | : <input checked="" type="checkbox"/> Not determined.   |
| <b>New Zealand</b>       | : <input checked="" type="checkbox"/> All components are listed or exempted.  |
| <b>Philippines</b>       | : <input checked="" type="checkbox"/> All components are listed or exempted.  |
| <b>Republic of Korea</b> | : <input checked="" type="checkbox"/> All components are listed or exempted.  |
| <b>Taiwan</b>            | : <input checked="" type="checkbox"/> All components are listed or exempted.  |
| <b>Thailand</b>          | : <input checked="" type="checkbox"/> Not determined.   |
| <b>Turkey</b>            | : <input checked="" type="checkbox"/> Not determined.   |
| <b>United States</b>     | : All components are listed or exempted.  |
| <b>Viet Nam</b>          | : <input checked="" type="checkbox"/> Not determined.   |

## Section 16. Any other relevant information

### History

**Date of issue/Date of revision** : 06/09/2017

**Date of previous issue** : 28/08/2014.

**Version** : 4

### Key to abbreviations

: ADG = Australian Dangerous Goods  
 ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 NOHSC = National Occupational Health and Safety Commission  
 SUSMP = Standard Uniform Schedule of Medicine and Poisons  
 UN = United Nations

### Procedure used to derive the classification

**Section 16. Any other relevant information**

| Classification   | Justification                                  |
|--|--|
| <b>Universal Calibration Mix</b><br>Flam. Gas 1, H220<br>Press. Gas (Comp.), H280            | On basis of test data<br>On basis of test data |
| <b>Praxair NGA Natural Gas Analyzer Mix</b><br>Flam. Gas 1, H220<br>Press. Gas (Comp.), H280 | On basis of test data<br>On basis of test data |

**References** : Not available.

Indicates information that has changed from previously issued version.

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