



## EPA Protocol Mixtures

All of the following mixtures are certified using EPA Protocol G1 Procedure: No dilution.

If you require an EPA Protocol concentration beyond direct analysis limits to NIST SRM, Matheson has quantitative capability to provide EPA Protocol G2 mixtures: using dilution. Please inquire.

### Shipping Information

|                           |   |
|---------------------------|---|
| UN Number:                | UN 1956                                     |
| DOT Proper Shipping Name: | Compressed Gas, nos<br>(List of Components) |
| DOT Classification:       | 2.2 (Nonflammable Gas)                      |
| DOT Label:                | NON-FLAMMABLE GAS                           |
| TC Shipping Name:         | Compressed Gas, nos<br>(List of Components) |
| TC Classification:        | 2.2   |
| TC Label:                 | NON-FLAMMABLE GAS,<br>NON-POISONOUS GAS     |

### Cylinder Specifications

| Cylinder Size | Valve Outlet CGA No. | Pressure    |              | Approximate Ship Weight |    |
|---------------|----------------------|-------------|--------------|-------------------------|----|
|               |                      | psig @ 70°F | kPa @ 21.1°C | lb                      | kg |
| 1R            | **                   | 2,000       | 13,904       | 69                      | 36 |
| 2R            | **                   | 2,000       | 13,904       | 48                      | 22 |
| 3R            | **                   | 2,000       | 13,904       | 28                      | 13 |

*\*\*See Equipment Recommendations for Valve Outlet CGA Number.*

| Binary Mixtures   | Product Code | Cylinder Size | Content             |                     | EPA Protocol Concentrations | Shelf Life Months | Equipment Recommendations  | Model No.                   | Page No.   |
|---|--------------|---------------|---------------------|---------------------|-----------------------------|-------------------|--|-----------------------------|------------|
|   |              |               | US                  | Metric              |                             |                   |  |                             |            |
| <b>Carbon Dioxide in Air</b>                                  | G0840218     | 1R            | 145 ft <sup>3</sup> | 4.11 m <sup>3</sup> | ≥ 400 ppm                   | 36                | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 590 | Series 3120<br>Series 3530  | 299<br>313 |
|   | G0840247     | 2R            | 78 ft <sup>3</sup>  | 2.21 m <sup>3</sup> |                             |                   |  |                             |            |
|   | G0840259     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Carbon Dioxide in Nitrogen</b>                             | G0840418     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> | ≥ 400 ppm                   | 36                | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 580 | Series 3120<br>Series 3530  | 299<br>313 |
|   | G0840447     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> |                             |                   |  |                             |            |
|   | G0840459     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Carbon Monoxide in Air</b>                                 | G0840618     | 1R            | 145 ft <sup>3</sup> | 4.11 m <sup>3</sup> | 2 - < 8 ppm                 | 6                 | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 590 | Series 3120<br>Series 3530  | 299<br>313 |
|   | G0840647     | 2R            | 78 ft <sup>3</sup>  | 2.21 m <sup>3</sup> | ≥ 8 ppm                     | 36                |  |                             |            |
|   | G0840659     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Carbon Monoxide in Nitrogen</b>                            | G0840818     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> | 2 - < 8 ppm                 | 6                 | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 350 | Series 3120<br>Series 3530  | 299<br>313 |
|   | G0840847     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> | ≥ 8 ppm                     | 36                |  |                             |            |
|   | G0840859     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Hydrogen Sulfide in Air</b>                                | G0841018     | 1I            | 145 ft <sup>3</sup> | 4.11 m <sup>3</sup> | 2 - < 4 ppm                 | 6                 | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 660 | Series 3810<br>Series 3610A | 318<br>316 |
|   | G0841047     | 2I            | 78 ft <sup>3</sup>  | 2.21 m <sup>3</sup> | ≥ 4 ppm                     | 6                 |  |                             |            |
|   | G0841059     | 3I            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Hydrogen Sulfide in Nitrogen</b>                           | G0841218     | 1I            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> | 2 - < 4 ppm                 | 6                 | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 330 | Series 3810<br>Series 3610A | 318<br>316 |
|   | G0841247     | 2I            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> | ≥ 4 ppm                     | 12                |  |                             |            |
|   | G0841259     | 3I            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Methane in Air</b>   | G0841418     | 1R            | 145 ft <sup>3</sup> | 4.11 m <sup>3</sup> | < 1 ppm                     | 6                 | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 590 | Series 3120<br>Series 3530  | 299<br>313 |
|   | G0841447     | 2R            | 78 ft <sup>3</sup>  | 2.21 m <sup>3</sup> | ≥ 1 ppm                     | 36                |  |                             |            |
|   | G0841459     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Nitric Oxide in Nitrogen</b><br>≥ 10 ppm                   | G0841618     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> | 1 - < 4 ppm<br>≥ 4 ppm      | 6<br>24           | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 660 | Series 3810<br>Series 3510  | 318<br>312 |
|   | G0841647     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> |                             |                   |  |                             |            |
|   | G0841659     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Nitric Oxide in Nitrogen</b><br>2.5 - 9.9 ppm              | G2659672     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> |                             |                   |  |                             |            |
|   | G2659673     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> |                             |                   |  |                             |            |
|   | G2659670     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> |                             |                   |  |                             |            |
|   | G2659671     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> |                             |                   |  |                             |            |
| <b>Nitrogen Dioxide (as NOx) in Air</b><br>(2% Certification) | G0841818     | 1R            | 145 ft <sup>3</sup> | 4.11 m <sup>3</sup> | 20 - < 80 ppm               | 6                 | Dual Stage Reg.<br>Single Stage Reg.<br>Valve Outlet CGA No. 660 | Series 3810<br>Series 3510  | 318<br>312 |
|   | G0841847     | 2R            | 78 ft <sup>3</sup>  | 2.21 m <sup>3</sup> | ≥ 80 ppm                    | 24                |  |                             |            |



**EPA Protocol Mixtures** (continued)

| Binary Mixtures                   | Product Code | Cylinder Size | Content             |                     | EPA Protocol    | Concentrations    | Equipment Recommendations | Model No.         | Page No.    |
|-----------------------------------|--------------|---------------|---------------------|---------------------|-----------------|-------------------|---------------------------|-------------------|-------------|
|                                   |              |               | US                  | Metric              |                 | Shelf Life Months |                           |                   |             |
| <b>Oxygen in Nitrogen</b>         | G0842018     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> | 0.3 % - < 0.8 % | 6                 | Dual Stage Reg.           | Series 3120       | 299         |
|                                   | G0842047     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> |                 | ≥ 0.8 %           | 36                        | Single Stage Reg. | Series 3530 |
|                                   | G0842059     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                 |                   | Valve Outlet CGA No. ***  |                   |             |
| <b>Propane in Air</b>             | G0842218     | 1R            | 145 ft <sup>3</sup> | 4.11 m <sup>3</sup> | < 1 ppm         | 6                 | Dual Stage Reg.           | Series 3120       | 299         |
|                                   | G0842247     | 2R            | 78 ft <sup>3</sup>  | 2.21 m <sup>3</sup> |                 | ≥ 1 ppm           | 36                        | Single Stage Reg. | Series 3530 |
|                                   | G0842259     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                 |                   | Valve Outlet CGA No. 590  |                   |             |
| <b>Propane in Nitrogen</b>        | G0842418     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> | < 1 ppm         | 6                 | Dual Stage Reg.           | Series 3120       | 299         |
|                                   | G0842447     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> |                 | ≥ 1 ppm           | 36                        | Single Stage Reg. | Series 3530 |
|                                   | G0842459     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> |                 |                   | Valve Outlet CGA No. 350  |                   |             |
| <b>Sulfur Dioxide in Air</b>      | G0849018     | 1R            | 145 ft <sup>3</sup> | 4.11 m <sup>3</sup> | 10 - 39 ppm     | 6                 | Dual Stage Reg.           | Series 3810       | 318         |
|                                   | G0849047     | 2R            | 78 ft <sup>3</sup>  | 2.21 m <sup>3</sup> | 40 to 499 ppm   | 24                | Single Stage Reg.         | Series 3510       | 312         |
|                                   | G0849059     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> | ≥ 500 ppm       | 36                | Valve Outlet CGA No. 660  |                   |             |
| <b>Sulfur Dioxide in Nitrogen</b> | G0842618     | 1R            | 143 ft <sup>3</sup> | 4.05 m <sup>3</sup> | 10 - 39 ppm     | 6                 | Dual Stage Reg.           | Series 3810       | 318         |
|                                   | G0842647     | 2R            | 77 ft <sup>3</sup>  | 2.18 m <sup>3</sup> | 40 to 499 ppm   | 24                | SingStage Reg.            | Series 3510       | 312         |
|                                   | G0842659     | 3R            | 29 ft <sup>3</sup>  | 0.82 m <sup>3</sup> | ≥500 ppm        | 36                | Valve Outlet CGA No. 660  |                   |             |

\*\*\* Valve Outlet CGA Number is CGA 580 for concentration of Oxygen ≤ 5%, CGA 590 for concentration of Oxygen > 5% but ≤ 23%, and CGA 296 for concentration of Oxygen > 23%.

⚠️ **WARNING:** This product can expose you to chemicals including Sulfur Dioxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

⚠️ **WARNING:** This product can expose you to chemicals including Carbon Monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).