

# Nitrous Oxide



| Grade                             | Semicon 4N5 | ULSI 5N   |
|-----------------------------------|-------------|-----------|
| Purity, %                         | 99.995      | 99.999    |
| Oxygen                            | ≤2 ppmv     | ≤2.0 ppmv |
| Nitrogen                          | ≤7 ppmv     | ≤2.0 ppmv |
| Carbon Dioxide                    | ≤2 ppmv     | ≤2.0 ppmv |
| Carbon Monoxide                   |             | ≤0.1 ppmv |
| Methane                           | ≤1 ppmv     | ≤0.1 ppmv |
| Water                             |             | ≤2.0 ppmv |
| Ammonia                           |             | ≤0.5 ppmv |
| Nitric Oxide and Nitrogen Dioxide |             | ≤0.5 ppmv |

- A lot analysis is provided for each order. – Individual analysis is also available upon request.
- Pneumatic valves and JIS connections are available upon request.

| CYLINDER      | Internal Volume                | Liters | 43.8            |
|---------------|--------------------------------|--------|-----------------|
|               | <b>Cylinder Sizes &gt;&gt;</b> |        | <b>QF/QA/QB</b> |
|               | Content                        | kg     | 27.3 or 27      |
|               |                                | lbs    | 60              |
|               | Cylinder Pressure @STP         | psig   | 745             |
| atm           |                                | 53.4   |                 |
| Change Point* | lbs                            | 16.6   |                 |

\*Recommended Cylinder Change Point at NTP, based on Phase Break, or the amount of product left in the cylinder when the liquid phase has completely evaporated and only gaseous product is left (estimate based on ideal gas behavior).

| SHIP | DOT Shipping Name  | Nitrous Oxide              | UN Number    | UN 1070      | Shipped as |
|------|--------------------|----------------------------|--------------|--------------|------------|
|      | DOT Classification | 2.2 (Non-Flammable Gas)    | ECCN #       | EAR99        | Liquefied  |
|      | DOT Label          | NON-FLAMMABLE GAS OXIDIZER | Harmonized # | 2811.29.0000 | Gas        |

| TECHNICAL DATA | Specific Volume @NTP | 0.543 m <sup>3</sup> /kg<br>8.7 ft <sup>3</sup> /lb |
|----------------|----------------------|---|
|                | CAS No               | 10024-97-2  |
|                | CGA/DISS/JIS         | 326/712/W22-14R                                     |
|                | Molecular Weight     | 44.01 g/mol   |

|                      |          |              |
|----------------------|----------|--------------|
| Critical Temperature | 36.4°C   | 97.6°F       |
| Critical Pressure    | 73.9 atm | 1,052.2 psia |

NTP = 21°C or 70°F and 101.3 kPa or 1 atm

| Cylinder | Treatment      | Nominal Diameter (OD)xHeight* |              | Material of Construction |       |
|----------|----------------|-------------------------------|--------------|--------------------------|-------|
|          |                | cm                            | Inches       | Cylinder                 | Valve |
| QF       | ULTRA-LINE®    | 23x130/134/143                | 9x51/52.5/56 | CS                       | SS    |
| QA       | ULTRA-LINE®    | 23x130/134/143                | 9x51/52.5/56 | CS                       | Brass |
| QB       | ULTRA-LINE II® | 23x130/134/143                | 9x51/52.5/56 | CS                       | SS    |

\*Height is reported as the distance from the bottom of the cylinder to the cylinder neck/ center of the valve outlet/ top of the handwheel  
CS: Carbon Steel SS: Stainless Steel

⚠ WARNING: This product can expose you to chemicals including Nitrous Oxide, 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).

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