

# INFORMATION SHEET

## Duration times of cylinders

| Cylinder volume | Pressure | Litres of air | Minutes at Nominal Breathing Rate |       |
|-----------------|----------|---------------|-----------------------------------|-------|
|                 |          |               | 40lpm                             | 50lpm |
| 3               | 200 bar  | 600           | 15                                | 12    |
| 3               | 300 bar  | 820           | 20                                | 16    |
| 4.7             | 300 bar  | 1300          | 32                                | 25    |
| 6               | 200 bar  | 1200          | 30                                | 24    |
| 6.8             | 300 bar  | 1860          | 46                                | 37    |
| 9               | 200 bar  | 1800          | 45                                | 36    |
| 9               | 300 bar  | 2460          | 61                                | 49    |

### How this is calculated

#### For 200 bar cylinders

If you take the water capacity of the cylinder and multiply it by the pressure of the cylinder it will provide you with the amount of litres of air in the cylinder when the cylinder is charged to that pressure.

Therefore: - 6 litres x 200 bar = 1200 litres of free air

The next step is to divide that amount of air by the nominal breathing rate of the user which in most cases is assumed to be 40lpm

Therefore: - 1200 litres / 40lpm = 30 minutes

#### For 300 Bar cylinders

With 300 bar air a compressibility factor needs to be included in the calculation. At 300 bar the compressibility factor of air is 0.91.

If you take the water capacity of the cylinder and multiply it by the pressure of the cylinder and then the compressibility factor it will provide you with the amount of litres of air in the cylinder when the cylinder is charged to that pressure.

Therefore: - 6.8 litres x 300 bar x 0.91 = 1860 litres of free air

The next step is to divide that amount of air by the nominal breathing rate of the user which in most cases is assumed to be 40lpm

Therefore: - 1860 litres / 40lpm = 46 minutes

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Scott Safety is a global business unit of Tyco International that supplies a variety of industries through manufacturing facilities located in the United States, United Kingdom, Asia, Finland and Australia.

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