



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Oregon Dept. of Agriculture Meas. Standards Div. Metrology Lab.

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URL: www.oregon.gov/ODA/MSD/metrology_intro.shtml

CALIBRATION LABORATORIES

NVLAP LAB CODE 200468-0

NVLAP Code: 20/A01

ANSI/NCSL Z540-1-1994; Part 1

Compliant

MECHANICAL

NVLAP Code: 20/M08

Mass - Metric

| <i>Range</i> | <i>Best Uncertainty (\pm)^{note 1}</i> | <i>Remarks</i> |
|--------------|---|----------------|
| 30 kg | 7.7 mg | Echelon I |
| 20 kg | 6.0 mg | Echelon I |
| 10 kg | 1.3 mg | Echelon I |
| 5 kg | 0.56 mg | Echelon I |
| 3 kg | 0.35 mg | Echelon I |
| 2 kg | 0.26 mg | Echelon I |
| 1 kg | 59 μ g | Echelon I |
| 500 g | 39 μ g | Echelon I |
| 300 g | 26 μ g | Echelon I |
| 200 g | 18 μ g | Echelon I |
| 100 g | 16 μ g | Echelon I |
| 92.8 g | 16 μ g | Echelon I |
| 50 g | 8.2 μ g | Echelon I |
| 30 g | 5.2 μ g | Echelon I |
| 20 g | 3.7 μ g | Echelon I |
| 10 g | 2.8 μ g | Echelon I |

2009-10-01 through 2010-09-30

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology



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| | | |
|--------------------|---------|-----------|
| 5 g | 1.5 µg | Echelon I |
| 3 g | 0.93 µg | Echelon I |
| 2 g | 0.67 µg | Echelon I |
| 1 g | 0.53 µg | Echelon I |
| 500 mg | 0.29 µg | Echelon I |
| 300 mg | 0.21 µg | Echelon I |
| 200 mg | 0.17 µg | Echelon I |
| 100 mg | 0.17 µg | Echelon I |
| 50 mg | 0.11 µg | Echelon I |
| 30 mg | 0.09 µg | Echelon I |
| 20 mg | 0.08 µg | Echelon I |
| 10 mg | 0.09 µg | Echelon I |
| 5 mg | 0.05 µg | Echelon I |
| 3 mg | 0.05 µg | Echelon I |
| 2 mg | 0.04 µg | Echelon I |
| 1 mg | 0.05 µg | Echelon I |
| Mass - Avoirdupois | | |
| 50 lb | 7.7 mg | Echelon I |
| 30 lb | 5.4 mg | Echelon I |
| 25 lb | 5.1 mg | Echelon I |
| 20 lb | 2.0 mg | Echelon I |
| 10 lb | 1.0 mg | Echelon I |
| 5 lb | 0.45 mg | Echelon I |
| 3 lb | 0.27 mg | Echelon I |
| 2 lb | 57 µg | Echelon I |
| 1 lb | 55 µg | Echelon I |
| 0.5 lb | 42 µg | Echelon I |
| 0.3 lb | 27 µg | Echelon I |
| 0.2 lb | 19 µg | Echelon I |
| 0.1 lb | 14 µg | Echelon I |
| 0.05 lb | 7.1 µg | Echelon I |
| 0.03 lb | 4.5 µg | Echelon I |
| 0.02 lb | 3.2 µg | Echelon I |
| 0.01 lb | 2.5 µg | Echelon I |
| 0.005 lb | 1.3 µg | Echelon I |
| 0.003 lb | 0.85 µg | Echelon I |

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|---------------|---------|------------|
| 0.002 lb | 0.63 µg | Echelon I |
| 1000 µlb | 0.53 µg | Echelon I |
| 500 µlb | 0.45 µg | Echelon I |
| 300 µlb | 0.38 µg | Echelon I |
| 200 µlb | 0.37 µg | Echelon I |
| 100 µlb | 0.43 µg | Echelon I |
| 50 µlb | 0.36 µg | Echelon I |
| 30 µlb | 0.31 µg | Echelon I |
| 20 µlb | 0.30 µg | Echelon I |
| 10 µlb | 0.35 µg | Echelon I |
| 5 µlb | 0.21 µg | Echelon I |
| 3 µlb | 0.15 µg | Echelon I |
| 2 µlb | 0.13 µg | Echelon I |
| 1 µlb | 0.14 µg | Echelon I |
| | | |
| Mass – Metric | | |
| 1 kg | 70 µg | Echelon II |
| 500 g | 48 µg | Echelon II |
| 300 g | 39 µg | Echelon II |
| 200 g | 39 µg | Echelon II |
| 100 g | 16 µg | Echelon II |
| 50 g | 11 µg | Echelon II |
| 40 g | 9.3 µg | Echelon II |
| 30 g | 6.9 µg | Echelon II |
| 20 g | 4.9 µg | Echelon II |
| 10 g | 4.4 µg | Echelon II |
| 5 g | 1.9 µg | Echelon II |
| 3 g | 1.3 µg | Echelon II |
| 2 g | 1.1 µg | Echelon II |
| 1 g | 0.85 µg | Echelon II |
| 500 mg | 0.72 µg | Echelon II |
| 300 mg | 0.36 µg | Echelon II |
| 200 mg | 0.22 µg | Echelon II |
| 100 mg | 0.22 µg | Echelon II |
| 50 mg | 0.22 µg | Echelon II |
| 30 mg | 0.15 µg | Echelon II |

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| | | |
|--------------------|---------|-------------|
| 20 mg | 0.16 µg | Echelon II |
| 10 mg | 0.13 µg | Echelon II |
| 5 mg | 0.15 µg | Echelon II |
| 3 mg | 0.18 µg | Echelon II |
| 2 mg | 0.19 µg | Echelon II |
| 1 mg | 0.16 µg | Echelon II |
| Mass - Avoirdupois | | |
| 4 oz | 37 µg | Echelon II |
| 2 oz | 12 µg | Echelon II |
| 1 oz | 8.1 µg | Echelon II |
| 1/2 oz | 7.1 µg | Echelon II |
| 1/4 oz | 2.8 µg | Echelon II |
| 1/8 oz | 2.1 µg | Echelon II |
| 1/16 oz | 1.2 µg | Echelon II |
| 1/32 oz | 0.89 µg | Echelon II |
| Mass – Metric | | |
| 300 kg | 1.9 g | Echelon III |
| 250 kg | 1.8 g | Echelon III |
| 200 kg | 1.7 g | Echelon III |
| 150 kg | 1.1 g | Echelon III |
| 100 kg | 1.0 g | Echelon III |
| 50 kg | 59 mg | Echelon III |
| 30 kg | 15 mg | Echelon III |
| 25 kg | 15 mg | Echelon III |
| 20 kg | 15 mg | Echelon III |
| 10 kg | 14 mg | Echelon III |
| 5 kg | 3.0 mg | Echelon III |
| 4.5 kg | 3.0 mg | Echelon III |
| 4 kg | 3.0 mg | Echelon III |
| 3 kg | 3.0 mg | Echelon III |
| 2 kg | 2.9 mg | Echelon III |
| 1 kg | 2.3 mg | Echelon III |
| 500 g | 2.3 mg | Echelon III |
| 300 g | 0.15 mg | Echelon III |
| 200 g | 0.15 mg | Echelon III |

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| | | |
|--------|---------|-------------|
| 100 g | 0.15 mg | Echelon III |
| 50 g | 0.15 mg | Echelon III |
| 30 g | 0.13 mg | Echelon III |
| 20 g | 0.13 mg | Echelon III |
| 10 g | 0.13 mg | Echelon III |
| 5 g | 7.8 µg | Echelon III |
| 3 g | 7.7µg | Echelon III |
| 2 g | 7.7 µg | Echelon III |
| 1 g | 7.7 µg | Echelon III |
| 500 mg | 7.7 µg | Echelon III |
| 300 mg | 5.7 µg | Echelon III |
| 200 mg | 5.7 µg | Echelon III |
| 100 mg | 5.7 µg | Echelon III |
| 50 mg | 5.7 µg | Echelon III |
| 30 mg | 5.7 µg | Echelon III |
| 20 mg | 5.7 µg | Echelon III |
| 10 mg | 5.7 µg | Echelon III |
| 5 mg | 5.7 µg | Echelon III |
| 3 mg | 5.7 µg | Echelon III |
| 2 mg | 5.7 µg | Echelon III |
| 1 mg | 5.7 µg | Echelon III |

Mass – Avoirdupois

| | | |
|---------|--------|---------------------|
| 2000 lb | 12 g | Echelon III – SOP 5 |
| 1000 lb | 3.5 g | Echelon III – SOP 5 |
| 500 lb | 1.7 g | Echelon III – SOP 5 |
| 200 lb | 0.77 g | Echelon III – SOP 4 |
| 100 lb | 0.11 g | Echelon III – SOP 4 |

| | | |
|---------|-------|-------------|
| 5000 lb | 29 g | Echelon III |
| 4000 lb | 26 g | Echelon III |
| 3500 lb | 20 g | Echelon III |
| 3000 lb | 19 g | Echelon III |
| 2500 lb | 17 g | Echelon III |
| 2000 lb | 16 g | Echelon III |
| 1000 lb | 3.5 g | Echelon III |
| 500 | 1.8 g | Echelon III |

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| | | |
|----------|---------|-------------|
| 300 | 1.1 g | Echelon III |
| 250 | 1.0 g | Echelon III |
| 200 | 1.0 g | Echelon III |
| 150 | 0.66 g | Echelon III |
| 100 | 0.12 g | Echelon III |
| 80 | 59 mg | Echelon III |
| 50 lb | 15 mg | Echelon III |
| 40 lb | 15 mg | Echelon III |
| 30 lb | 15 mg | Echelon III |
| 25 lb | 14 mg | Echelon III |
| 20 lb | 14 mg | Echelon III |
| 10 lb | 3.1 mg | Echelon III |
| 5 lb | 3.0 mg | Echelon III |
| 4 lb | 3.0 mg | Echelon III |
| 3 lb | 2.9 mg | Echelon III |
| 2 lb | 2.3 mg | Echelon III |
| 1 lb | 2.3 mg | Echelon III |
| 0.5 lb | 0.16 mg | Echelon III |
| 0.3 lb | 0.16 mg | Echelon III |
| 0.2 lb | 0.15 mg | Echelon III |
| 0.1 lb | 0.13 mg | Echelon III |
| 0.05 lb | 0.13 mg | Echelon III |
| 0.03 lb | 0.13 mg | Echelon III |
| 0.02 lb | 0.13 mg | Echelon III |
| 0.01 lb | 8.1 µg | Echelon III |
| 0.005 lb | 7.8 µg | Echelon III |
| 0.003 lb | 7.7 µg | Echelon III |
| 0.002 lb | 7.7 µg | Echelon III |
| 0.001 lb | 7.7 µg | Echelon III |
| 8 oz | 0.16 mg | |
| 4 oz | 0.16 mg | Echelon III |
| 2 oz | 0.15 mg | Echelon III |
| 1 oz | 0.13 mg | Echelon III |
| 1/2 oz | 0.13 mg | Echelon III |
| 1/4 oz | 8.1 µg | Echelon III |

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| | | |
|---------|--------|-------------|
| 1/8 oz | 7.9 µg | Echelon III |
| 1/16 oz | 7.7 µg | Echelon III |
| 1/32 oz | 7.7 µg | Echelon III |

NVLAP Code: 20/M12
Volume

| <i>Range in gallon</i> | <i>Best Uncertainty (±) in in³ note 1</i> | <i>Remarks</i> |
|------------------------|--|-----------------|
| 1000 | 50 | Volume Transfer |
| 500 | 20 | Volume Transfer |
| 300 | 12 | Volume Transfer |
| 100 | 3.9 | Volume Transfer |
| 25 | 0.93 | Volume Transfer |
| 5 | 0.20 | Volume Transfer |

1. Represents an expanded uncertainty using a coverage factor, k = 2, at an approximate level of confidence of 95 %.

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