GAW World Calibration Centre (WCC) for Methane
and
Quality Assurance/Science Activity Centre (QA/SAC)
in Asia and the South-West Pacific

Methane Reference Gas Intercomparison for Japan from 2015 to 2016
Technical Details on Laboratory Measurements

Japan Meteorological Agency (JMA)

1. Information on contributors
(1) Contributors: Teruo Kawasaki and Takanori Matsumoto
(2) Organization: Japan Meteorological Agency, Japan

2. Information on instrument
(1) Analytical method: Gas Chromatography (FID)
(2) Manufacturer: SHIMADZU
(3) Model: Series GC-14BPF

3. Information on sampling
(1) Sampling volume: 10 ml
(2) Carrier gas: Nitrogen (ultra high purity)
(3) Flow rate: 50 ml/min
(4) Temperature of the oven: 70 ^{o}C

4. Information on the main column
(1) Diameter: 3 mm
(2) Length: 4 m
(3) Material: Stainless steel

5. Information on column packings
(1) Trade name: Molecular Sieve 5A
(2) Mesh: 60/80

6. Information on standard gas
(1) Number of standard gases: 5
(2) Mole fraction of standard gases: 1621.52, 1749.31, 1866.70, 1982.06, 2107.93 ppb
(3) Diluent gas: Purified air
(4) Scale: WMO X2004A Scale

7. Other information (references, papers, literatures, etc.)
Aoki, S., T. Nakazawa, S. Murayama and S. Kawaguchi, Measurements of atmospheric methane at the Japanese Antarctic station, Syowa, *Tellus, Ser. B, 44*, 273-281, 1992

Matsueda, H., Intercalibration experiment of methane standard gas scale between NOAA/CMDL and MRI/GRL, Papers in Meteorology and Geophysics, 44, No.2, 45-56,

1993.
Matsueda, H., Y. Sawa, A. Wada, H.Y. Inoue, K. Suda, Y. Hirano, K. Tsuboi and S. Nishioka, Methane standard gases for atmospheric measurements at the MRI and JMA and intercomparison experiments, Papers in Meteorology and Geophysics, 54, 91-109, 2004.
Tsuboi, K., H. Matsueda, Y. Sawa, Y. Niwa, M. Takahashi, S. Takatsuji, T. Kawasaki, T. Shimosaka, T. Watanabe, and K. Kato (2016), Scale and stability of methane standard gas in JMA and comparison with MRI standard gas, Pap. Meteorol. Geohys., 66, 15-24, doi:10.2467/mripapers66.15.