Application Note

Density of AdBlue®

Industry	:	Chemicals
Instrument	:	Density / specific gravity meter
Measurement method	:	Resonant frequency oscillation
Standards	:	ISO 22241, JIS K2247

1. Scope

Density of AdBlue® was determined based on “ISO 22241 Diesel engines - NOx reduction agent AUS 32 -.

2. Precautions

1) Use sufficiently dried desiccant.
2) Perform a calibration with dry air and pure water before measurement.

3. Post-measurement procedure

1) Drain a sample in the measuring cell and wash it with pure water. Then rinse the cell with ethanol and dry it sufficiently.

4. Apparatus

Main unit : Density / specific gravity meter

5. Reagents

Rinse liquid (for washing) : Pure water
Rinse liquid (for drying) : Ethanol

6. Procedure

-Preparation-
1) Set the measuring temperature of the main unit to 20°C, and wait until it is stabilized.
2) Perform a calibration with dry air and pure water.

-Measurement-
1) Introduce a sample into the measuring cell without letting air bubbles enter into the cell.
2) Start a measurement.
3) After a measurement, wash the cell with pure water and ethanol, and dry it.

7. Example

-Parameter-

<Measurement Parameter>

Set temperature	: 20.00 (℃)
Stability sense	: 1
Limit time	: 600 (sec)
Viscosity correction	: 0 (off)
Calibration material	: 0 (air and water)

<Contents>

Display item	: Density (g/cm^3)
Decimal place	: 4

<Temprature Compensation>

Temp. Comp.	: 0 (off)

（This parameter is an example of our refractometer. For other models, parameter items may be different or other items may be added.）

-Measurement results-

Table 1　Measurement results of sample

	Density (g/cm^3)
1	1.0905
2	1.0905
Mean	1.0905
Repeatability*	0.0000

*Repeatability means the difference of the two results.

8. Summary

As the measurement results of density of AdBlue®, the repeatability was within the limits (ISO 3675 : 0.0005, ISO 12185 : 0.0002) specified by the standards, and the results satisfied the quality requirement (within 1.0870 - 1.0930 g/cm^3).

When actually measuring, please refer to the latest standards.

9. References

1) ISO 22241 : 2006 (E)　Diesel engines－NOx reduction agent AUS 32－
2) JIS K2247 : 2009　Diesel engines－NOx reduction agent AUS 32－

京都電子工業株式会社 KYOTO ELECTRONICS MANUFACTURING CO.,LTD.