

Commodity Description

종목 번호 Item No.	관세분류 번호 HSK No.	정부물품분류번호(8자리) Korean Government Commodity Classification Code(eight-digit)	품 명 Description	단 위 Unit	수 량 Q'ty
1	9027.80.1000	41113009	Magnetic Suspension Balance	set	1

I. End-user's Use

- The Equipment enables precise gravimetric measurements over a wide temperature and pressure range, as well as in chemically reactive or corrosive atmospheres.
- The equipment is the available system that can measure adsorption isotherms of gases on porous materials up to very high pressure (500 Bar) using a gravimetric technique.
- The equipment are mainly used in the following applications: Carbon capture and storage shale gas exploration. Porous material characterization, hydrogen storage / fuel cells, ionic liquid characterization membrane studies, other gas sorption studies, Catalyst research and others.
- The equipment must be perated in agreement with national and international standards, ASTM E914, ASTM E1131, ASTM E1868, DIN 51006, ISO 7111, ISO11358.

II. Configurations of Goods

- Balance unit with Electromagnet and Permanent Magnet 1 set
- Sample Chamber with Glass Version 1 set
- Automatic Gas flow control and Vacuum systems 1 set
- Data Analysis software and Control system 1 set

III. Performance & Specification

- Balance unit with Electromagnet and Permanent Magnet 1set
 - MSB weights a sample in closed (sealed) reactor cell with a external microbalance.
 - A PID (proportional- integral- differential) Controller controls the electromagnetic force so that the position of the floating magnetic is kept stable.
 - An extend electromagnetic is controlled to attract the internal permanent magnetic and continues to apply attractive force until the system reaches a constant measuring point height.

- Sample chamber with Glass Version 1set

- Temperature range : ambient (-196 °C , 2400 °C : optional)

- Minimun pressure range : vac ~ 1.1 bar (500 bar : optional)
- Resolution and Mass range of MSB : < 10 µg and ≥ 5 g or better
- reproducibility : ±0.02 µg ~ ±2 µg
- relative error : less than 0.0 1% of measured value
- Baseline stability: 5 µg/h or better
- Sample crucible volume: 0.3ml or 3ml
- Max. Sample dimension: 0.3ml (Diameter 6mm, Height 8mm), 3ml (Diameter 16 mm Height 15 mm)

- Automatic Gas flow control and Vacuum systems 1set

- Automatic Gas flow control system

- Inert gas : corrosive gases, HNO₃, SO_x, NO_x, HF, HCl, etc

- Type of gas connection : 6mm Sertor or better

- Type of pressure connection : 6mm Swagelok

- Number of gas connections : 20 ea or better

- Number of inlet and outlet connections : 20ea or better

- Number of purge gas connections : 1ea

- The system can be coupled with gas analysis tools such as GC, MS or FT-IR

- The gas safety system such as hydrogen or carbon dioxide ensuring secure operation and user safety could be connected with this system and also, the system can be connected with a humidity and water vapor to regulate the humidity and water vapor during the measurement.

- Vacuum control system

- Type of pump : two stage rotary pump

- peak pumping speed : 2.3 cfm or faster

- ultimate pressure : 2x10⁻³mbar or better

- Nominal rotation speed of Motor : 1800 rpm or better

- Noise level : 48 dB or better

- Data Analysis software and Control system 1set

- Data analysis software

- program capable of text editing

- Data security in case of power failure

- Thermocouple break detection

- Repetition measurements with minimum parameter input

- Evaluation of current measurement

- curve comparison up to 32 curves
- Export and import of data ASC11
- Data export to MS Excel
- Multi- methods analysis (DSC, TG, TMA, DIL)
- programmable gas control
- Mass change in % and mg
- Rate controlled mass loss
- Evaluation of mass loss
- optional Kinetic and lifetime prediction software packages

2) Data Control System (Desktop version)

CPU: Intel core i5

- RAM : 8GB
- SSD: 256GB
- Monitor : 24" LCD
- Interface : USB
- O/S : Window 11 professional
- Keyboard and mouse

IV. Remarks

- 1) Warranty : one year after installation and test-run.
- 2) Delivery term : FCA (Free Carrier).
- 3) Delivery : Within 8 months after receipt of the L/C or PO sheet.
- 4) Installation and technical training: It should be performed by a qualified engineer who trained from a manufacturer at an end-user site free of charge.
- 5) Inspection: It should be inspected by a manufacturer before shipment.