

**ASTM D 4045 – D 4468**



**PRINCIPE DE FONCTIONNEMENT**

**OPERATING PRINCIPLE**

The sample is precisely metered in a continuous flowing stream of hydrogen. Both sample and hydrogen are heated together in a furnace at a temperature between 650°C and 1200°C (depending on the sample composition) where hydrogasification and catalytic hydrogenation transform sulphur compounds into H<sub>2</sub>S and reaction gas product.

For heavy or unsaturated hydrocarbons, the furnace includes a propriarity catalytic element to achieve 100% conversion and prevents the reaction tube from clogging, fouling and from carbon build-up.

The resulting H<sub>2</sub>S is monitored by the interference free, lead acetate tape, detection technology coupled with a microprocessor based electronics to provide fast and accurate measurement of total sulphur in liquid, gaseous and LPG laboratory applications.

The analyser is sensitive to extremely low total sulphur concentrations (less than 500 PPB) as well as to high concentrations (up to 2000 PPM).

**OPTIONS**

- ◆ Motorized syringe drive Model for liquid/gas sample injection.
- ◆ Gas / Liquid syringes
- ◆ Patented catalytic element for heavy or unsaturated hydrocarbon applications.
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## **STANDARD SPECIFICATIONS**

- **Principle** : Conversion of sulphur compounds in Hydrogen sulphide (reduction in presence of Hydrogen) and detection of the resulting H<sub>2</sub>S by colorimetry (speed of coloration of a lead acetate impregnated tape).
- **Applications** : - Gaseous Hydrocarbons – Liquid Hydrocarbons up to C<sub>25</sub>.
- **Detector** : Single photo detector acting as measure and reference.
- **Electronics** : Microprocessed coupled with an external PC.
- **Measuring method** : ASTM D 4468 for gases, D 4045 for liquids.
- **Rangeability** : 0-500 PPB up to 0-2000 PPM (depending on the application – with several different calibrations to be done by client).
- **Range unit** : PPB, PPM, mg/Nm<sup>3</sup>, selectable.
- **Lowest detectable limit** : Between 5 and 50 PPB, depending on the application.
- **Linearity** : ± 0,5% of the calibration full scale.
- **Reproducibility** : ± 1% of calibration full scale.
- **Accuracy** : ± 1% of calibration full scale.
- **Response time** : Typically 9 min. for low range and 3 min. for high range.
- **Zero drift** : None due to single photo-detector technique.
- **Power supply** : 110/220 V – 50/60 Hz - +/- 10 %.
- **Power consumption** : 1000 VA.
- **RFI protection** : IEC 8013 level 3 (CE Mark).
- **Analog output** : 4-20 mA isolated, 600 ohms max, loop load.
- **Digital output** : RS 232C, 9600 bauds/s.
- **PC configuration** : Latest PC generation, including Hard Disk, CD drives, monitor, keyboard, mouse.
- **Software** : LAB DM™.
- **Calibration libraries** : Included, calibrations to be made by client. The instrument is calibrated only on 1 range for gas and liquid.
- **Conversion furnace** : Filament coil up to 1200°C.
- **Reaction tube** : Quartz up to 1100°C / Ceramic above 1100°C.
- **Type of conversion** : Pyrolysis or catalytic depending the application (catalytic element optional).
- **Conversion furnace temperature.** : Adjustable between 600 and 1200°C.
- **Sensing tape** : Lead acetate impregnated, 30 meters roll.
- **Tape life** : Between 14 and 40 days (adjustable) in continuous operation.
- **Storage life** : 5 years for the sensing tape.
- **Humidifier** : 5 % acetic acid in distilled water 5 to 15 cc per week consumption.
- **Sample inlet pressure(gas)** : 7 bar max.
- **Sample flowrate (gas)** : 2 up to 200 cc/min adjustable (depending the range).
- **Liquid sample injection** : With motorized syringe drive (optional).
- **Hydrogen inlet pressure** : 7 bar max.
- **Hydrogen flowrate** : 200 up to 500 cc/min adjustable. Sulphur free.
- **Nitrogen inlet pressure** : 7 bar max.
- **Nitrogen flowrate** : 200 cc/min during regeneration cycle only industrial grade.
- **Instrument Air inlet pressure** : 7 bar max.
- **Instrument Air flowrate** : 200 cc/min during regeneration cycle only.
- **Manual Regeneration system** : In case of excess sample without H<sub>2</sub> in the furnace, carbon build-up appears in the reaction tube affecting the accuracy of the analysis.
- **Working temperature** : 20°C +/- 2°C.
- **Storage temperature lab** : -15°C up to 55°C – 95 % R.H.
- **Required bench sizes** : L 1500 x D 700 mm.
- **Total weight** : 60 kg without options.

*Dans le cadre d'un développement permanent nous nous réservons le droit de modifier les appareils ou de changer les spécifications sans préavis.*

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