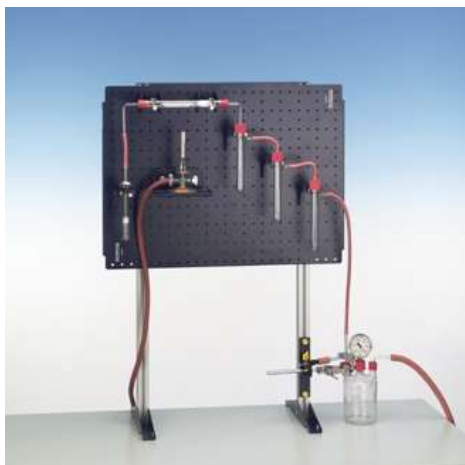


Model experiment on the desulphurisation of flue gas

Article no: P1310000



Principle

German coal contains an average of one tonne of sulphur per 100 tons of coal. The combustion of this 100 tons of coal "produces" about two tonnes of sulphur dioxide. In comparison a large 700 megawatt power plant which burns about 200 tons of coal per hour produces about 100 tons of sulphur dioxide per day. Due to the environmental hazard of sulphur dioxide these flue gases have to be desulphurised. This experiment shows a simple demonstration of the chemical processes of flue gas desulphurisation like in power plants today.

Benefits

- Stable and safe experiment setup
- Illustrative Introduction to Desulphurisation

Tasks

Clean flue gas using limestone and describe the underlying chemical process.

Learning objectives

- Environmental hazard due to sulfur dioxide
- Functioning of a flue gas desulphurisation plant

Scope of delivery

| | | |
|---|--------------|---|
| Frame for complete experiments | 45500-00 | 1 |
| Rear-cover for compl.-exp. panel | 45501-00 | 1 |
| Panel for complete experimental setups | 45510-00 | 1 |
| Clamping holder,18-25mm | 45520-00 | 4 |
| Clamping holder, turnable, 18-25 mm | 45521-00 | 2 |
| Apparatus carrier w. fix. magnet | 45525-00 | 1 |
| Spring plugs, 50 off | 45530-00 | 1 |
| Clamp on holder | 02164-00 | 1 |
| Fixing bands,universal,100 pcs. | 45535-00 | 1 |
| Combustion tube 200mm,quartz,PN19 | 33947-00 | 1 |
| Porcelain boats, 10 pcs | 32471-03 | 1 |
| Rubber stopper, d = 22/17 mm, 1 hole | 39255-01 | 2 |
| Test tube GL25/8, w.hose connec. | MAU-27221000 | 3 |
| Glass tubes,right-angled | MAU-10030701 | 1 |
| Glass tube,right-angled,. | MAU-10030703 | 1 |
| Calcium chloride tube,str.150 mm | 36941-00 | 1 |
| Teclu burner, DIN, natural gas | 32171-05 | 1 |
| Safety gas tubing, DVGW, sold by metre | 39281-10 | 3 |
| Lighter f.natural/liquified gases | 38874-00 | 1 |
| Hose clamp for 10-16 mm diameter | 41001-00 | 2 |
| Secure bottle, 500 ml, 2 x Gl 18/8, 1 x 25/12 | 34170-01 | 1 |
| Spring manometer, 0...-1000 mbar | 34170-02 | 1 |
| Glass tubes, right-angled, 150 x 80 mm | MAU-10022500 | 1 |
| Stopcock,3-way,t-shaped, glass | 36731-00 | 1 |
| Pinchcock, width 10 mm | 43631-10 | 1 |
| Universal clamp | 37715-01 | 1 |
| Water jet pump, plastic | 02728-00 | 1 |

| | | |
|---------------------------------------|----------|---|
| Rubber hose for vacuum | 39286-00 | 1 |
| Rubber hose | 39282-00 | 2 |
| Funnel, glass, top dia. 50 mm | 34459-00 | 1 |
| folded filter, different sizes | 47580-05 | 1 |
| Test tube, Duran ®, various lengths | 36304-01 | 4 |
| Glass rod, boro 3.3, l=300mm, d=7mm | 40485-05 | 1 |
| Beaker, Boro, high-form | 46027-00 | 2 |
| Spoon, special steel | 33398-00 | 1 |
| Tweezers, straight, blunt, 200 mm | 40955-00 | 1 |
| Wash bottle, plastic, 500 ml | 33931-00 | 1 |
| Pasteur pipettes, 250 pcs | 36590-00 | 1 |
| Rubber caps, 10 pcs | 39275-03 | 1 |
| Glass wool 10 g | 31773-03 | 1 |
| Sulphur, sublimated, 500 g | 30216-50 | 1 |
| Iodine potassium iodide solution | 30094-10 | 1 |
| Calcium hydroxide 500 g | 30054-50 | 1 |
| Barium chloride sol., 10%, 250 ml | 30965-25 | 1 |
| Sodium sulphite cryst. 250 g | 30167-25 | 1 |
| Hydrochloric acid, 10%, tech. gr., 1l | 31821-70 | 1 |
| Hydrogen peroxide, 30%, 250 ml | 31710-25 | 1 |
| Liquid Indicator pH1-13 UNISOL113 | 47014-02 | 1 |
| Activated carbon, granular 250 g | 30011-25 | 1 |
| Glycerol, 250 ml | 30084-25 | 1 |
| Water, distilled 5 l | 31246-81 | 1 |