

Sulphur trioxide - the sulphuric acid contact process

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Principle

The contact process is currently used in the chemical industry to produce sulphuric acid in the high concentrations needed for industrial processes. In this model experiment, platinum-palladium-aluminium-oxide beads are employed as a catalyst for the reaction.

Benefits

- Stable and safe setup due to solid stand material
- Secure connection of the items by GL screw joint system

Tasks

1. Oxidise sulphur dioxide to sulphur trioxide.
2. Use the sulphur trioxide to produce sulphuric acid.

Learning objectives

- Sulphur trioxide
- Sulphuric acid
- Contact process
- Oxidation
- Redox reaction

Necessary accessories

- Precision balance 620g/0.001g

Scope of delivery

Support base DEMO	02007-55	1
Support rod, stainless steel, different lengths	02037-00	2
Support rod, stainless steel, different lengths	02033-00	1
Right angle boss-head clamp	37697-00	8
Universal clamp	37715-01	6

Lab jack, 150 x 150 mm	02074-02	1
Combustion tube, 300 mm, quartz, ns	33948-01	1
Connecting tube IGJ 19/26-GL 18/8	35678-01	2
Clamp f. ground joint, plastic, NS19	43614-00	2
Teflon sleeve IGJ 19, 10 pcs	43616-00	1
Round bottom flask, 100ml, GL 25/12	MAU-27100001	1
Funnel for gas generator, 50 ml, GL18	MAU-27222500	1
Wash pipe with frit, GL 25/8	MAU-27229000	2
Support to Stutzer, GL 25/12	MAU-27226500	1
Capillary tube, T-shaped	37030-00	1
U-tube with lateral connector, GL 25	MAU-27229500	1
Beaker, boro, low-form	46055-00	1
Glass tube, right-angled, .	MAU-10030703	1
Steel cylinder oxygen, 2 l, filled	41778-00	1
Table stand for 2 l steel cylinders	41774-00	1
Reducing valve f. oxygen	33482-00	1
Wrench for steel cylinders	40322-00	1
Teclu burner, DIN, natural gas	32171-05	1
Safety gas tubing, DVGW, sold by metre	39281-10	1
Lighter f. natural/liquified gases	38874-00	1
Hose clip f. 12-20 diameter tube	40995-00	2
Rubber hose	39282-00	2
Spoon, special steel	33398-00	1
Wash bottle, plastic, 500 ml	33931-00	1
Funnel, glass, top dia. 50 mm	34457-00	1
Beaker, Boro, high-form	46029-00	2
Beaker, Boro, high-form	46027-00	4
Glass rod, boro 3.3, l=300mm, d=7mm	40485-05	1
Tweezers, straight, blunt, 200 mm	40955-00	1

Indicator paper, pH1-11, roll	47004-01	1
Glass wool 10 g	31773-03	1
Sulphuric acid, 95-97%, 500 ml	30219-50	1
Sodium pyrosulphite 250 g	30152-25	1
Bead catalyst, 50g	31763-03	1
Sodium hydroxide, pellets, 500 g	30157-50	1
Hydrochloric acid 37 %, 1000 ml	30214-70	1
Barium hydroxide 250 g	30034-25	1
Water, distilled 5 l	31246-81	1