

防腐气相色谱法测定四氟化硫纯度

Tengzhou Xiangying Analysis Technology Co. Ltd.



preface

Sulfur tetrafluoride is a selective organic fluoride agent. Its molecular structure s atoms to sp³d hybrid orbitals formed sigma bond, molecular shape is deformed tetrahedral, under normal temperature and pressure is a colorless with similar to the sulfur dioxide gas strong pungent smell the smell of gas, toxic, in the air does not burn, no explosion; at 600 DEG C remain stable. In the air, the white smoke is strongly hydrolyzed. When a water environment will cause similar hydrofluoric acid corrosion. Complete hydrolysis into sulfur dioxide and hydrofluoric acid, partially hydrolyzed to generate toxic thionyl fluoride, but by alkali solution absorption into nontoxic salts; soluble in benzene.

Sulfur tetrafluoride (referred to as SF₄) is used widely at present, the most effective selective organic fluoride agent that carbonyl hydroxyl groups were selectively fluoride (instead of containing oxygen carbonyl compounds); in the fine chemical widely used in high-end LCD materials and high-end pharmaceutical, pesticide industry production, has the irreplaceable status.

Sulfur tetrafluoride distillation purification process, by iodine pentafluoride and sulfur in sulfur tetrafluoride reactor reaction synthesis of four fluoride sulfur heavily, by cooler, condenser separator and a condensate collector purity is more than or equal to 95% of the liquid primary four fluoride sulfur products, through the distillation process of purity of not less than 99.9% of the liquid sulfur tetrafluoride products continuously charged into the cylinder. Determination of purity and impurity of four sulfur fluoride by anticorrosive gas chromatograph

Because of the four properties of sulfur hexafluoride and lively, encountered a water environment will cause similar hydrofluoric acid corrosion. Complete hydrolysis into sulfur dioxide and hydrofluoric acid, corrosion, common chromatographic instruments can not be used.

Tengzhou City Xiangying Analysis Technology Co., Ltd. relying on chromatographic engineering research and analysis and testing center of 2 research institutions, under the leadership of general manager, Wang Xiaoying, to the scientific development concept as a guide, through constant practice, worked out for the determination of sulfur tetrafluoride gas chromatography, hereby to the vast number of old and new customers to share scientific and technological achievements.

Tengzhou City Xiangying Analysis Technology Co., Ltd. the XiangyingGC7990plus enhanced anti-corrosion type gas chromatograph and special anti-corrosion chromatographic column without pretreatment of the sample, direct injection, after special filling column separation, with anti-corrosion TCD, with normalization method of quantitative calculation. Through verification: this method is simple, reliable, accurate, has obtained the certification and Accreditation of

international partners.

XiangyingGC7990plus gas chromatograph, gas, hot wire are the anti-corrosion materials, selection of anticorrosive sampling valve, a gasifying chamber after special passivation treatment, tail gas by innocuous recovering and sealing system of first-class technology, carrier gas after the adsorption, the technical content in the domestic office in the leading level.

Application of corrosion protection XiangyingGC7990plus gas chromatograph:

(1) corrosive gases: hydrogen sulfide (H₂S) and hydrogen chloride (HCl), chlorine (Cl₂), ammonia (NH₃) and fluorine (F₂) and hydrogen fluoride (HF), sulfur dioxide (SO₂), sulfur trioxide (SO₃) and sulfur tetrafluoride (SF₄).

(2) corrosive liquid: chloroacetic acid (ClCH₂COOH), dichloroacetic acid (Cl₂CHCOOH), trichloroacetic acid (Cl₃CCOOH), sulfur chloride, sulfur monochloride, sulfonyl chloride, chloride sub sulfone etc..

Tengzhou City Xiangying Analysis Technology Co., Ltd., is a high-tech enterprises in Shandong Province famous, Lunan region is the largest specialized in developing and manufacturing gas phase and liquid phase chromatograph of the manufacturer.

Main business of the company

1. Gas chromatograph, portable gas chromatograph, online gas chromatograph, liquid chromatograph, laboratory pure water machine, headspace sampler, autosampler, thermal desorption instrument, nitrogen and hydrogen air generator, chromatography consumables (column, graphite gasket, regulator valve, gland forceps, vial, 7725 in sampling valve etc.), luminosity meter, electronic balance, moisture tester, drying oven, centrifuge, glass apparatus, chemical reagents, etc. the full set of laboratory equipment production and sales.

2 to provide technology transfer, the establishment of analytical methods.

3 engaged in old chromatography with the old for new business.

4 chromatographic column development, custom.

5 to undertake the testing of the sample business.

6 to undertake the maintenance of domestic and international chromatography equipment, modification business.

前言:

四氟化硫是一种选择性有机氟化剂,它的分子结构上S原子以 sp³d 杂化轨道形成 σ 键,分子形状为变形四面体形,在常温常压下为无色带有类似二氧化硫气体的强烈刺激臭气味的气体,有毒,在空气中不燃烧,不爆炸;在 600°C 时仍很稳定。在空气中强烈水解冒出白烟。遇到有水分的环境会引起类似氢氟酸的腐蚀。完全水解变成二氧化硫和氢氟酸,部分水解时,生成有毒的亚硫酸酐,但能被强碱溶液全部吸收变成无毒无害的盐类;能溶于苯。

四氟化硫(简称 SF₄)是目前广泛应用的最有效的选择性有机氟化剂, 它能将羰基和羟基选择性地氟化(取代含羰基化合物中的氧); 在精细化工广泛应用于高档液晶材料和高端医药、农药工业中间体生产, 具有无法取代的地位。

四氟化硫的提纯精馏工艺, 由五氟化碘与硫磺在四氟化硫反应器中反应合成, 制得四氟化硫粗气, 在经冷却器、冷凝分离器以及冷凝捕集器获得纯度为≥95%的液态初级四氟化硫产品, 再经由精馏过程获得纯度为≥99.9%的液态四氟化硫产品, 连续充入钢瓶。

防腐气相色谱仪测定四氟化硫纯度及杂质

因四氟化硫性质活泼, 遇到有水分的环境会引起类似氢氟酸的腐蚀。完全水解变成二氧化硫和氢氟酸, 腐蚀性大, 普通色谱仪器根本无法使用。

滕州市翔鹰分析技术有限公司依托色谱工程研究所和分析与测试中心 2 个科研机构, 在王晓莹总经理的带领下, 以科学发展观为指导, 通过不断的实践, 摸索出四氟化硫测定的气相色谱法, 特此于广大新老客户分享科技成果。

滕州市翔鹰分析技术有限公司采用 XiangyingGC7990plus 增强型防腐气相色谱仪, 专用防腐色谱柱, 无须对样品进行预处理, 直接进样, 经过专用填充柱分离, 用防腐 TCD 检测器检测, 用归一化法进行定量计算。经验证: 该方法简单可靠, 结果准确, 已经得到国际上相关合作商的认证和认可。

XiangyingGC7990plus 气相色谱仪, 气路, 热丝均采用防腐材料, 可选择防腐进样阀, 气化室经过特殊的钝化处理, 尾气采用无害化回收, 密封系统技术一流, 载气经过吸附处理, 其技术含量在国内处于领先水平。

防腐 XiangyingGC7990plus 气相色谱仪应用领域:

(1) 腐蚀性气体: 硫化氢 (H₂S), 氯化氢 (HCl), 氯气 (Cl₂), 氨气 (NH₃), 氟气 (F₂), 氟化氢 (HF), 二氧化硫 (SO₂), 三氧化硫 (SO₃), 四氟化硫 (SF₄) 等。

(2) 腐蚀性液体: 氯乙酸 (ClCH₂COOH), 二氯乙酸 (Cl₂CHCOOH), 三氯乙酸 (Cl₃CCOOH), 二氯化硫, 二氯化二硫, 磺酰氯, 氯化亚砷等。

滕州市翔鹰分析技术有限公司, 是山东省久负盛名的高新技术企业, 是鲁南地区最具规模的专业开发和制造气相、液相色谱仪的生产厂商。

公司主要业务

1. 气相色谱仪, 便携式气相色谱仪, 在线气相色谱仪, 液相色谱仪, 实验室纯水机, 顶空进样器, 自动进样器, 热解析仪, 氮氢空发生器, 色谱耗材 (色谱柱, 石墨垫, 稳压阀, 压盖钳, 顶空瓶, 7725 进样阀等), 分光光度计, 电子天平, 水分测定仪, 干燥箱, 离心机, 玻璃仪器, 化学试剂等全套实验室设备生产销售。

2. 提供技术转让, 建立分析方法。

3. 从事旧色谱以旧换新的业务。

4. 色谱柱研制, 定做。

5. 承接样品的检测业务。

6. 承接国内外色谱仪器的维修, 改装业务。