# Synthesis of Alum

- Second Quiz (Density/Alum)
- 2. Collect lab-report (Density) and Pre-Lab (Alum)
- Lecture on Today's Experiment
- Demostrate how to perform gravity filtration, suction filtration and Bunsen burner

#### Lecture:

Goal: synthesize alum from Aluminum can

- Learn to perform laboratory technique of purification by filtration
- Calculating theoretical yield and percent yield

Chemical formula for Alum : KAl(SO<sub>4</sub>)<sub>2</sub> · 12H<sub>2</sub>O

Alum - use in medical, cooking, water treatment etc,.....

Chemical RXN - Handout

$$2Al(s) + 2KOH(aq) + 6H_2O(l) \rightarrow 2K[Al(OH)_4] + 3H_{200}$$

→ step 3-4: Dissolve metal in excess strong base KOH to form a complex ion and H₂ gas (bubbles)

→ use gravity filtration to filter the solution while it's still hot, keep the filtrate (What is the filtrate)

$$2K[Al(OH)_{*}](aq) + H_{*}SO_{*}(l) \rightarrow 2Al(OH)_{*}(s) + 2H_{*}O(l) + K_{*}SO_{*}(aq)$$

→ step 8: Neutralize excess –OH in the filtrate with H<sub>2</sub>SO<sub>4</sub> → precipitation will form

$$2AI(OH)_1(s) + 3H_1SO_4(aq) + K_2SO_4 \rightarrow 2KAI(SO_4)_2(aq) + 6H_2O(1)$$

→ Step 9: more acid is added to dissolve Al(OH)<sub>3</sub> solid to form a soluble KAl(SO<sub>4</sub>)<sub>2</sub>, this is not really an Hydrated Alum

$$KAl(SO_4)_2(aq) + excess H_2O (0^{\circ}C) \rightarrow KAl(SO_4)_2 \cdot 12H_2O$$

→ this can be filter using suction filtration and dry

- → Student must wait after 48 hours to weigh their sample and must be done prior the next class meeting (penalty will be applied)
- → Prefer to the class schedule to check when the lab will open, you should come 1 hour after the lab start and must ask for permission (WEAR GOGGLES!!!!)

# **Alum Synthesis Lab Answers**

J. D. Minford

# **Alum Synthesis Lab Answers:**

Handbook of Aluminum Bonding Technology and Data J. D. Minford,1993-06-16 A reference that offers comprehensive discussions on every important aspect of aluminum bonding for each level of manufacturing from mill finished to deoxidized conversion coated anodized and painted surfaces and provides an extensive up to date review of adhesion science covering all significa 
Forensic Investigation of Clandestine Laboratories Jr., Donnell R. Christian,2003-07-28 Clandestine lab operators are not the mad scientists whose genius keeps them pent up in the laboratory contemplating elaborate formulas and mixing exotic chemicals In fact their equipment is usually simple their chemicals household products and their education basic Most of the time the elements at the scene are perfectly legal to sell and own Laboratory Manual for Principles of General Chemistry Jo Allan Beran,2010-11-01 This new edition of the Beran lab manual emphasizes chemical principles as well as techniques The manual helps students understand the timing and situations for the various techniques The Beran lab manual has long been a market leading lab manual for general chemistry Each experiment is presented with concise objectives a comprehensive list of techniques and detailed lab intros and step by step procedures

The Use of Aluminum Alkyls in Organic Synthesis Ethyl Corporation. Industrial Chemicals Division, 1970 Carbide, Nitride and Boride Materials Synthesis and Processing A.W. Weimer, 2012-12-06 Carbide Nitride and Boride Materials Synthesis and Processing is a major reference text addressing methods for the synthesis of non oxides Each chapter has been written by an expert practising in the subject area affiliated with industry academia or government research thus providing a broad perspective of information for the reader The subject matter ranges from materials properties and applications to methods of synthesis including pre and post synthesis processing Although most of the text is concerned with the synthesis of powders chapters are included for other materials such as whiskers platelets fibres and coatings Carbide Nitride and Boride Materials Synthesis and Processing is a comprehensive overview of the subject and is suitable for practitioners in the industry as well as those looking for an introduction to the field It will be of interest to chemical mechanical and ceramic engineers materials scientists and chemists in both university and industrial environments working on or with refractory carbides nitrides and borides **Laboratory Chemistry** Maryland. University. Department of Concepts And Problems In Physical Chemistry P.S. Raghavan, 1997 Contents Introduction Atoms Chemistry, 1973 Molecules and Formulas Chemical Equations and Stoichiometry Aqueous Reactions and Solution Stoichiometry Gases Intermolecular Forces Liquids and Solids Atoms Structure and the Periodic Table Chemical Bonding Chemical Thermodynamics Solutions Chemical Kinetics Chemical Equilibrium Acids and Bases Ionic Equilibria I Ionic Equilibria II Redox Reactions Electrochemistry Nuclear Chemistry 2024-25 MPESB Physics, Chemistry and Biology Solved Papers YCT Expert Team, 2024 25 MPESB Physics Chemistry and Biology Solved Papers 496 995 E This book contains the previous year solved papers with detail explanation Scientific and Technical Aerospace Reports ,1994-05

**Proceedings of the American Pharmaceutical Association at the Annual Meeting** American Pharmaceutical Association. Annual Meeting, American Pharmaceutical Association, 1894 The issues for 1857 1911 include Report on the progress of pharmacy The last volume 1911 contains only Report on the progress of pharmacy the constitution by laws and roll of members

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