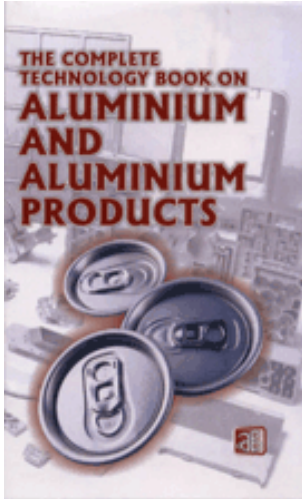


The Complete Technology Book on Aluminium and Aluminium Products



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Aluminium, the second most plentiful metallic element on the earth, became an economic competitor in engineering applications as recently as the end of 19th century. It was become a metal for its time. Aluminium possesses many characteristics that make it highly compatible with recycling. It is resistant to corrosion and it thus retains a high level of metal value after use, exposure, or storage. Once produced, it can be considered a permanent resource for recycling, preferably in to similar products. It is essentially a soft and weak metal which has to be strengthened by alloying with suitable elements. The elements which are added to aluminium in appreciable quantities to increase its strength and improve other properties are surprisingly limited to only four, namely, magnesium, silicon, copper and zinc. These are added singly or in combination. It is theoretically 100% recyclable without any loss of its natural qualities. It is the most widely used non ferrous metal. The applications of aluminium are grown in many fields for example; electric conductors, windows and building components, aircraft, foil packaging etc. It has a major role in packaging industry especially in pharmaceuticals. It includes different types of packaging; unit packaging, bunch wrapping, strip packaging, thermoformed unit packaging and sachets Aluminium alloys with a wide range of properties are used in engineering structures. Aluminium alloys are divided into two major categories; casting compositions and wrought compositions. Further differentiation for each category is based on the primary mechanism. The most commercially mined aluminium ore is bauxite, as it has the highest content of the base metal. The primary aluminium production process consists of three stages. First is mining of bauxite, followed by refining of bauxite to alumina and finally smelting of alumina to aluminium. India has the fifth largest bauxite reserves with deposits 5% of world deposits. Indian share in world aluminium capacity rests at about 3%; it will touch almost 13% to 15% of the growth rate.

This book basically deals with aluminium production, heat treatable and non heat treatable alloys, properties of cast aluminium alloys, testing of liquid & solidification contraction of aluminium alloys, trends in the improving economic use of aluminium, laboratory investigation of carbon anode consumption in the electrolytic production of aluminium, alumina extraction from a pennsylvania diasporic clay by an ammonium sulfate process, the recovery of alumina from its ores by a sulfuric acid process, initial softening in some aluminium base precipitation hardening alloys, basic properties of aluminium foil, how to select a flexible foil packaging laminate, printing on aluminium foil, designing aluminium foil packs etc.

The present book covers the need within the industrial and academic communities for up to date information about production of aluminium and extrusion process due to the ever increasing use of this technology. The book provides concepts in the different areas of extrusion technology. It is hoped that its presentation will be very helpful to new entrepreneurs, technocrats, research scholars, libraries and existing units.

Contents

1. GENERAL INTRODUCTION

- Aluminium Production
- Production Statistics
- Aluminium Alloys
- Heat-Treatable and Non-heat-Treatable Alloys
- Properties
- Manufactured Forms
- Standardized products
- Engineered Products
- Finishes
- Mechanical Finishes
- Chemical Finishes
- Electrolytic Finishes
- Non-Electrolytic Coatings
- Product Classifications
- Building and Construction Applications
- Containers and Packaging
- Transportation
- Electrical Applications
- Consumer Durables
- Machinery and Equipment
- Other Applications

2. PROPERTIES OF CAST ALUMINIUM ALLOYS

- 201.0
- 4.6Cu-0.7Ag-0.35Mn-0.35Mg-0.25Ti
- Commercial Names
- Specifications
- Chemical Composition
- Applications
- Mechanical Properties
- Mass Characteristics
- Thermal Properties
- Electrical Properties
- Fabrication Characteristics
- 204.0
- 4.6Cu-0.25Mg-0.17Fe-0.17Ti
- Commercial Name
- Applications
- Mechanical Properties
- 206.0, A206.0
- 4.5Cu-0.30Mn-0.25Mg-0.22Ti
- Specifications

Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Chemical Properties
Fabrication Characteristics
208.0
4Cu-3Si
Commercial Names
Specifications
Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Fabrication Characteristics
238.0
10.0%Cu-4.0%Si-0.3%Mg
Commercial Names
Specifications
Applications
242.0
4Cu-2Ni-2.5Mg
Commercial Names
Specifications
Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Electrical Properties
Thermal Properties
Fabrication Characteristics
295.0
4.5Cu-1.1Si
Commercial Names
Specifications
Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Fabrication Characteristics
296.0
4.5Cu-2.5Si
Commercial Names
Specifications
Chemical Composition
Applications
Mechanical Properties

Mass Characteristics
Thermal Properties
Electrical Properties
Fabrication Characteristics
308.0

5.5Si-4.5Cu
Commercial Names
Specifications
Chemical Composition
Applications

Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Fabrication Characteristics

319.0
6Si-3.5Cu
Commercial Names
Specifications
Chemical Composition
Applications

Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Fabrication Characteristics

332.0
9.5%Si-3.0%Cu-1.0%Mg
Commercial Names
Specifications
Applications

Mechanical Properties
336.0
12Si-2.5Ni-1Mg-1Cu
Commercial Names
Specifications

Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Thermal Properties

Electrical Properties
Fabrication Characteristics
339.0
12.0%Si-1.0%Ni-1.0%Mg-2.25%Cu

Commercial Names
Applications
354.0
9Si-1.8Cu-0.5Mg
Commercial Name

Specifications
Chemical Composition
Applications

Mechanical Properties
Mass Characteristics
Thermal Properties
Fabrication Characteristics

355.0, C355.0

5Si-1.3Cu-0.5Mg

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

356.0, A356.0

7Si-0.3Mg

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Radiation Effect on Properties

Fabrication Characteristics

357.0, A357.0

7Si-0.5Mg

Specifications

Chemical Composition

Applications

Mechanical properties

Mass Characteristics

Thermal Properties

Fabrication Characteristics

359.0

9Si-0.6Mg

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Fabrication Characteristics

360.0, A360.0

9.5Si-0.5Mg

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

380.0, A380.0 8.5Si-3.5Cu

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

383.0

10.5Si-2.5 Cu

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

384.0, A384.0

11.2Si-3.8Cu

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

390.0, A390.0

17.0Si-4.5Cu-0.6Mg

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

413.0, A413.0

12Si

Commercial Names

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

443.0, A443.0, B443.0, C443.0

5.2Si

Commercial Names

Specifications
Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Fabrication Characteristics

514.0

4Mg

Commercial Names

Specifications
Chemical Composition
Applications
Mechanical Properties
Mass characteristics
Thermal properties
Electrical properties
Fabrication Characteristics

518.0

8Mg

Commercial Names

Specifications
Chemical Composition
Applications
Mechanical Properties
Mass characteristics
Thermal Properties
Electrical Properties

520

10Mg

Commercial Names

Specifications
Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Fabrication Characteristics

535.0, A535.0, B535.0

7Mg

Commercial Names

Specifications
Chemical Composition
Applications
Mechanical Properties
Mass Characteristics
Thermal Properties
Electrical Properties
Chemical Properties
Fabrication Characteristics

712.0

5.8Zn-0.6Mg-0.5Cr-0.2Ti

Commercial Names

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

713.0

7.5Zn-0.7Cu-0.35Mg

Commercial Names

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Chemical Properties

Fabrication Characteristics

771.0

7Zn-0.9Mg-0.13Cr

Commercial Names

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

850.0

6.2Sn-1Cu-1Ni

Commercial Names

Specifications

Chemical Composition

Applications

Mechanical Properties

Mass Characteristics

Thermal Properties

Electrical Properties

Fabrication Characteristics

3. PHYSICAL METALLURGY OF ALUMINIUM ALLOYS

Aluminium-Magnesium Alloys

Al-Si alloys

Al-Cu alloys

Hardness Data for Al-3.8% Cu Alloy

Aluminium-zinc alloys

Complex Alloys

Aluminium-Zinc-Magnesium Alloys

Al-Cu-Mg alloys
Al-Mg-Si alloys
Effect of Plastic Deformation on Precipitation
Intermetallic Compounds and their Effects
Corrosion of Aluminium Alloys

4. TESTING OF LIQUID & SOLDIFICATION CONTRACTION OF ALUMINIUM ALLOYS

1. Derivation of Correlations
2. Experimental procedure
3. Results and Discussion

5. TRENDS IN THE IMPROVING ECONOMIC USE OF ALUMINIUM

1. Reduction in Dimensions and Weight
 2. More Efficient Use of Metal
 3. Improvements in Methods of Protection
 4. New Concepts in Design
- Corrosion Studies Applied to Roofing Sheet and Water Pipes
Using Structural Aluminium Efficiently
Aluminium Electrical Conductors
Overhead Conductors
Underground Cable
Transformer Windings
Development of Welding Techniques and Weldable Alloys
Welding Processes
Development of Alloys
Conclusion

6. LABORATORY INVESTIGATION OF CARBON ANODE CONSUMPTION IN THE ELECTROLYTIC PRODUCTION OF ALUMINIUM

Introduction
Materials
Anode Carbon
Electrolyte Materials
Apparatus
Procedure
General
Operation at Different Current Densities
Operation at Different Temperatures
Operation at Different Electrolyte Compositions
Results
Effect of Anode Current Density
Effect of Electrolyte Temperature
Effect of Carbon Baking Temperature
Effect of Electrolyte Composition
NaF/AlF₃ Ratio
Alumina Content
Calcium Fluoride Content
Sodium Chloride Content
Graphite and Coke
Mechanism of Anode Consumption
Erosion of Particles of Coke from the Active Anode Surface
Formation of CO

7. ALUMINA EXTRACTION FROM A PENNSYLVANIA DIASPORE CLAY BY AN AMMONIUM SULFATE PROCESS

- Introduction
- Related Literature
- Raw Material
- Procedure
- Results and Discussion
- Crushing and Grinding
- Mixing and Pelletizing
- Roasting
- Leaching and Primary Crystallization
- Alum Purification
- Alumina Precipitation and Ammonium Sulfate Crystallization
- Conclusion

8. THE RECOVERY OF ALUMINA FROM ITS ORES BY A SULFURIC ACID PROCESS

- Introduction
- The C.S.I.R.O. Process
- Synopsis of Process
- Experimental Procedures
- Extraction Efficiency
- Nature of Ore
- Particle Size
- Pulp Density and Liquor Concentrations
- Temperature
- Time
- Excess Acidity
- Control of Impurities
- Silica
- Titanium
- Other trivalent Metals
- Bivalent Metals
- Univalent Metals
- Phosphate
- Recycling Operations
- Digestionâ€™Modification
- Reduction
- Hydrolysisâ€™Calcination
- Acid Regeneration
- Calcination
- Liquid-Solid Separations
- Digestion
- Modification Residue
- Modified Liquor
- Hydrolysis
- Costing
- Raw Materials
- Energy
- Equipment

9. AN IMPROVED ALUMINIUM CONDUCTOR

- Electrical Properties of Aluminium
- Experimental Work

The PM-2 Conductor
Corrosion Tests
Earthing Tests
Conclusion

10. INITIAL SOFTENING IN SOME ALUMINIUM BASE PRECIPITATION HARDENING ALLOYS

Experimental Procedure
Preparation of Alloys
Heat Treatment
Hardness Measurements
X-ray Diffraction Studies
Results
Dissussion
Quenched Hardness
Extent of Softening
Time to Reach Minimum Hardness
Range of Softening
X-ray line width
Conclusion

11. BASIC PROPERTIES OF ALUMINIUM FOIL

Introduction
Production of Aluminium
Manufacture of Aluminium Foil
Metal Purity
Alloying
Annealing
Soft Foil For Flexible Packaging
Safety of Foil For Food Packaging
Strength
Perforations or Pinholes
Foil Costs
Need For Standardization
Future of Foil in Packaging

12. HOW TO SELECT A FLEXIBLE FOIL PACKAGING LAMINATE

Introduction
Materials
Physical Properties of Foil
Physical Properties of Paper
Physical Properties of Films
Cellulose Film
Polyamide (Nylon)
Polyester (Terylene)
Polythene
Polypropylene
PVDC
Note
Laminating Processes
Wax
Hot Melts
Pastes
Polythene
Lacquers

Characteristics of Laminates
Physical Characteristics
Economic Characteristics
Briefing The Supplier
Typical Foil Laminates
For Sweets and Chocolates
For Cakes and Biscuits
For Dairy Trades
For Toiletries
Miscellaneous
General
The Future

13. DESIGNING ALUMINIUM FOIL PACKS

Introduction
Package Design Factors
Co-ordination of Design Policy
The Corporate Image
Packaging for Export
Aspects of Designing with Aluminium Foil
Methods of Rendering

14. PRINTING ON ALUMINIUM FOIL

The Printing Processes Used
1. Gravure
2. Letterpress
3. Flexography
4. Offset Lithography
5. Silk Screen
Special Requirements for Printing Aluminium Foil
Advantages and Limitations of the Printing Processes Used
Technical Considerations
Gravure
Flexography
Letterpress
Offset Lithography
Silk Screen
Economic Considerations
Other Printing Processes
Web Offset Lithography
Electrostatic Printing

15. HEAT SEALING FOIL PACKS

Importance of Heat-sealing
Principles of Heat-sealing
Sealing Coated Aluminium Foils by Heat
Determination of Optimum Heat-sealing Conditions
Factors Controlling the Heat-seal Strength
Failure by Peeling
Paper/Foil Laminates
Types of Thermoplastic Coatings
Sealing Temperatures of Typical Foil Laminates

16. AUTOMATIC PACKAGING IN FOIL

17. LIQUID PACKAGING IN ALUMINIUM FOIL

Introduction

Marketing and Economic Considerations

1. Economics

2. Convenience

3. Presentation

Types of Foil Pack that are Formed, Filled and Sealed from the Reel

Sachets

Two-cavity Sachets

Production of Sachets

Rectangular and Tetrahedral Packs Incorporating Aluminium Foil

For Milk and Cream

For Fruit Juice

Gusseted Bottom Packs

Other Liquids And Semi-liquids

The Value of Foil In Sealable Laminates

What of the Future?

18. ALUMINIUM FOIL IN PHARMACEUTICAL PACKAGING

Introduction

Aluminium Foil as a Cap Liner Facing for Rigid Containers

Unit Packaging

Bunch Wrapping

Strip Packaging

Thermoformed Unit Packaging

Sachets

19. STERILIZABLE ALUMINIUM FOIL FOOD PACKS

Introduction

Reasons for Using a Processable Pouch

Laminate Structure

Pinhole Damage in Foil

Sterilizing Techniques

Filling and Sealing Pouches

Pouch Integrity

Microbiological Aspects

Storage Testing and Heat Penetration

The Commercial Situation

Summing-up

20. BENEFICIATION OF BAUXITE

Experimental Procedure and Results

Evaluation of the Economics of Bauxite Beneficiation

A Proposed Scheme for Beneficiation by Dry Screening

21. ALUMINIUM IN ENGINEERING

Transport Industry

Air

Road

Rail

Marine

- Automobile Ancillaries
- Airconditioning and Refrigeration
- Bearings
- Electrical Machinery
- Construction Industry
- Mining Industry
- Other Applications

22. ALUMINIUM DIE CASTINGS IN AUTOMOBILES

- Automotive Applications
- Recent Trends for Bigger Automotive Castings
- Aluminium Die Castings in Indian Automobile
- Conclusion

23. NON-FUSION JOINING OF ALUMINIUM

- Soldering
- Joint Design
- Soldering Methods
- Friction Soldering
- Flux Soldering
- Organic Flux Soldering
- Chloride Fluxes
- Reaction Soldering
- Selection of Solders
- Soft Soldering
- Hard Solders
- Brazing
- Joint Types
- Performance of Joints
- Typical Applications
- Cold Pressure Welding
- Pressure Welding Technique
- Butt Welding
- Lap Welding
- Applications
- Ultrasonic Joining
- Explosive Joining

24. SELECTIVE ABSORPTION OF FLUORINE FROM THE GASES FROM ALUMINIUM REDUCTION CELLS WITH VERTICAL SPIKE SODERBERG ANODES

- Introduction
- Theoretical Analysis
- General Principles of Selective Absorption of Hydrogen Fluoride
- A Continuous Process Based on Controlled Addition of Alkali
- General Description
- Absorption of Hydrogen fluoride
- Absorption of Sulfur Dioxide
- Process Working with Pure Water as Absorbent
- General Considerations
- Absorption of Hydrogen Fluoride
- Absorption of Sulfur Dioxide
- Pilot Plant Investigations
- General
- Process with Controlled Alkali Addition

Process Using Pure Water
Comparison of the Two Processes
Further Development of the Pure Water Process
General Considerations
A New Type of Gas Washer, Combining a very High Absorption Efficiency for Hydrogen Fluoride with Complete Selectivity and a High Dust Removal Efficiency
Results of Technical Scale Operation
25. THE FLUORINE PROBLEM IN
ALUMINIUM PLANTS
DIRECTORY SECTION

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