

Aluminum



summary

Aluminum & Aluminum alloy, due to the reasonable cost, mature techniques, rich supply, lightweight as well as recycling, become the best choice of promoting green development all around world. As high performance and diversification are widely used in transportation, mechanical equipment, packing, printing, building decoration, mould manufacture, cooker, electronics, oil refinery, power supply, aviation and so on. Now aluminum is a most produced in the world only second to iron, it has replaced many traditional materials in many areas.

Note : Sold by FOB number plus LME/ingot price.



ALLOYS AND USES

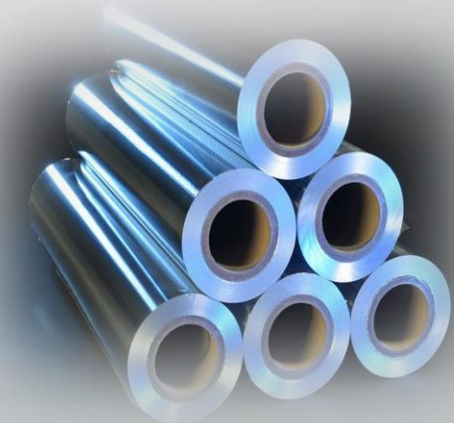
ALLOYS AND TEMPERS

ALUMINUM APPLICATIONS

- Plate
- Coil
- Foil
- Painted
- Extrusions

WORLD PRODUCTION AND DISTRIBUTION

COUNTRY PRODUCTION AND CONSUMPTION



ALLOYS AND USES



According to different kinds of alloy and content, aluminum production can be divided into 2xxx series, 3xxx series, 4xxx series, 5xxx series, 6xxx series, 7xxx series, 8xxx series. Different series has different uses.



ITEM	MAIN ALLOY	ALLOY NO.	USE
1XXX SERIERS	Al	1050	Printing
		1050 1060 1070 1100 1145 1200	Cosmetic cap stock/cap stock Aluminum circle stock/ACP stock/Tread plate Specular sheet/Cabinet sheet/Capacitor shell stock Lighting component stock
		1070 1100 1235 1A99	Capacitor foil/Household foil/foil stock
2XXX SERIERS	Al & Cu	2A12 2024	Quenched plate pre-stretched plate
3XXX SERIERS	Al & Mn	3003 3004 3005 3104 3105 3A21	Battery shell stock/Power battery shell /Tread plate Cabinet sheet/Pressure container stock Beverage container stock/High performance deep draw material/Anodizing stock /Deep draw stock/Honeycomb material
		3003	Capacitor foil
4XXX SERIERS	Al & Si	4004 4104 4343	Cladding sheet and plate
5XXX SERIERS	Al & Mg	5005 5052 5083 5086 5182 5251 5754 5A06 5454	Anodizing material/Deep draw stock/Tread plate Elastic cap stock/Transportation tab stock
6XXX SERIERS	Al & Mg & Si	6061 6063 6A02 6082 6016	Quenched plate pre-stretched plate
7XXX SERIERS	Al & Zn	7072 7075	Quenched plate pre-stretched plate
8XXX SERIERS	Al & Other metal element	8011 8021 8079	Beverage foil/Cable foil/Blister foil/Household foil Container foil/Pp cap stock/foil stock/Pharmaceutical foil

ALLOYS AND TEMPER

Basic temper designation

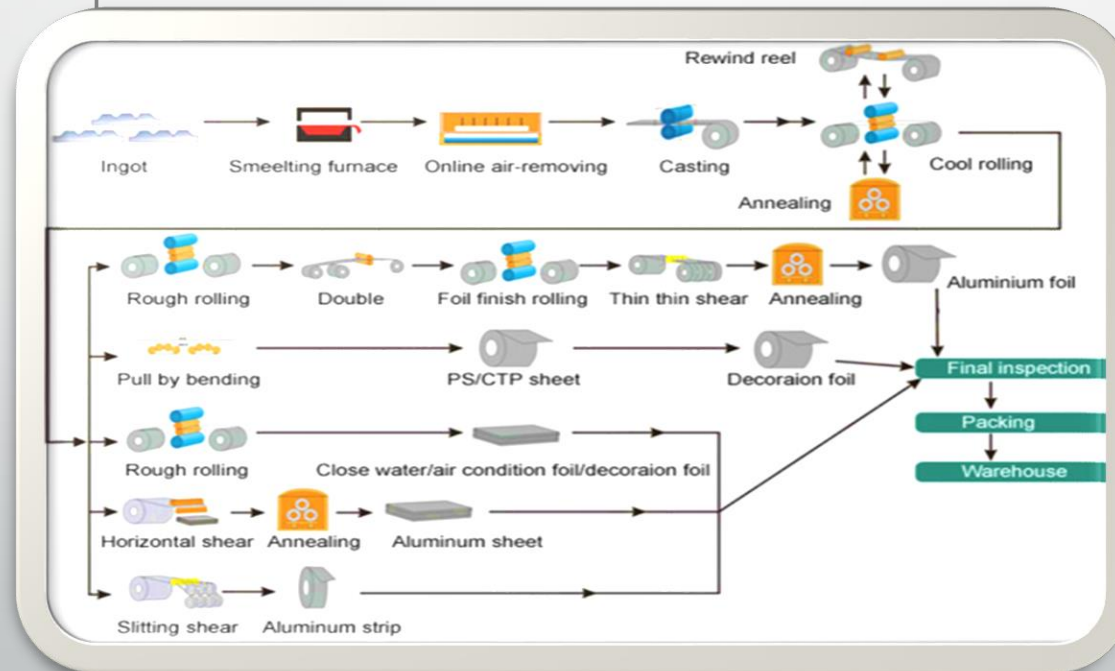
F-as fabricated

O-annealed

H-strain hardened

T-thermally treated

W-used to describe an quenched condition between solution heat treatment and article or room temperature aging



F

Applies to products which acquire some temper from shaping processes not having special control over the amount of strain-hardening or thermal treatment for wrought products, there are no mechanical property limits.

O Recrystallized(wrought products only)

Applies to the softest temper of wrought products



H(Wrought products only)

Applies to products which have their strength increased by strain-hardening with or without supplementary thermal treatment to produce partial softening

H is always followed by two or more digits.

The first digit indicates the specific combination of basic operations,

- H₁ - Strain hardened only
- H₂ - Strain hardened and partially annealed
- H₃ - Strain hardened and stabilized
- H₄ - Strain hardened and lacquered or painted. This assumes that thermal affects from the coating process affect the strain hardening; seldom encountered.

The second digit indicates strain hardening to the following degrees:

- 2—Y₄ hard
- 4—1/2 hard
- 6—V₄ hard
- 8—full hard
- 9—extra hard

The third digit when used, indicates a variation of a two-digit temper.

Global Stainless



T

- T1 Cooled from an elevated temperature shaping process and naturally aged to a substantially stable condition.
- T2 Annealed (cast products only).
- T3 Solution heat-treated and then cold worked.
- T4 Solution heat-treated and naturally aged to a substantially stable condition
- T5 Cooled from an elevated temperature shaping process and then artificially aged.
T6 Solution heat-treated and then artificially aged.
- T7 Solution heat-treated and then stabilized
- T8 Solution heat-treated, cold worked, and then artificially aged
- T9 Solution heat-treated, artificially aged, and then cold worked.
- T10 Cooled from an elevated temperature shaping process

The following specific additional digits have been assigned for stress-relieved tempers of wrought products: TXX51, TXX52, T42, T62

W

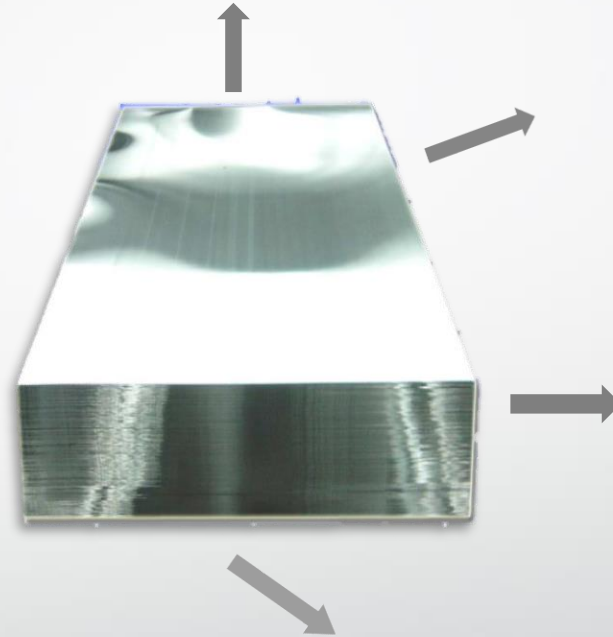
An unstable temper applied only to alloys which spontaneously age at room temperature after solution heat-treatment.

APPLICATIONS

-Aluminum sheet & plate

- Representative ally: 1xxx series, 3xxx series, 5xxx series, 6xxx series
- Thickness (mm) Width (mm)

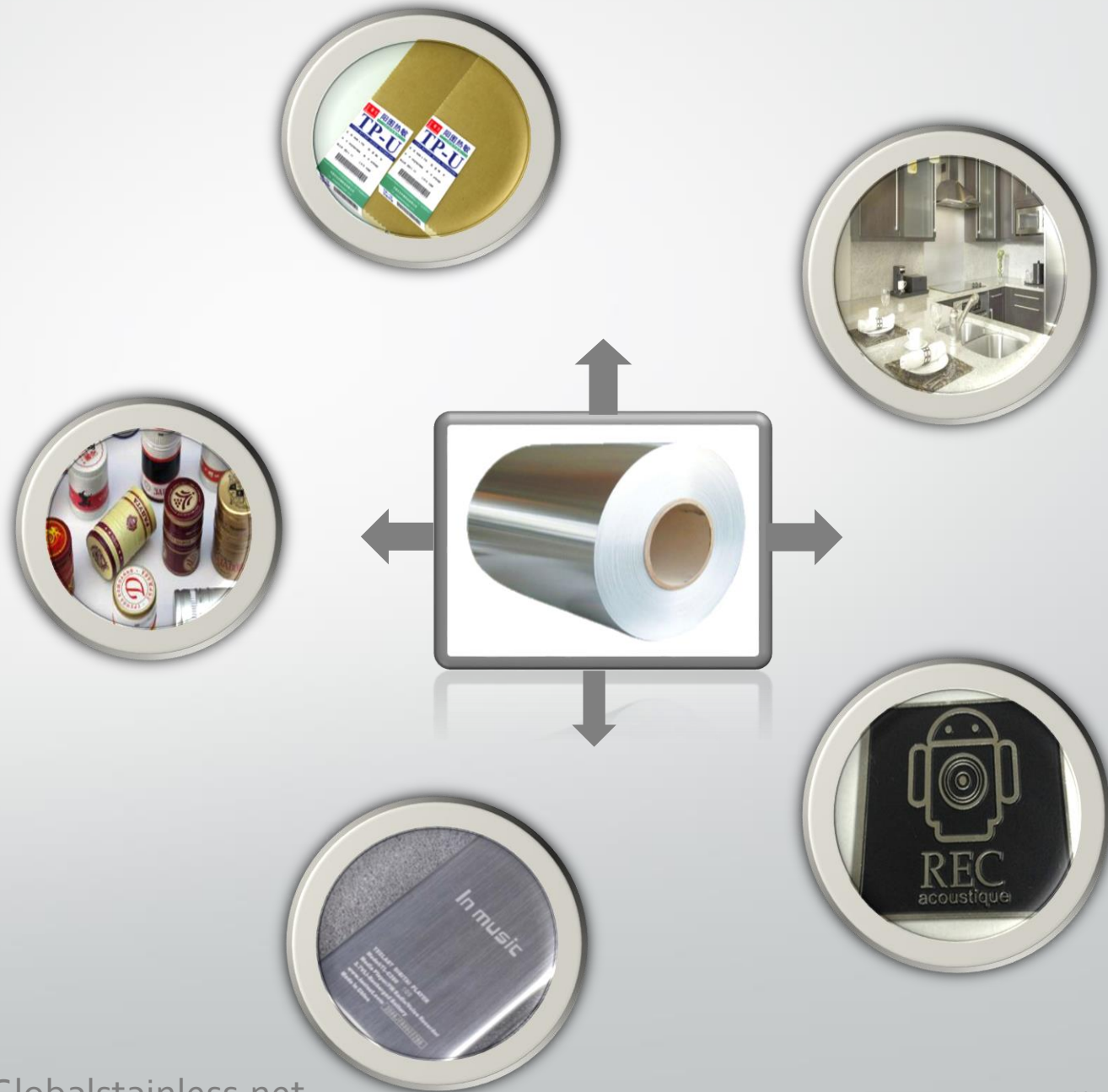
0.2~600	30~3000 (1xxx series)
0.3~600	500~2600 (3xxx series)
0.2~600	500~3000 (5xxx series)
0.15~600	500~3000 (6xxx series)



APPLICATIONS

- Aluminum coil

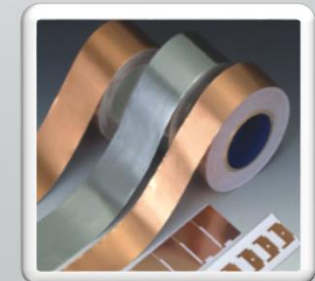
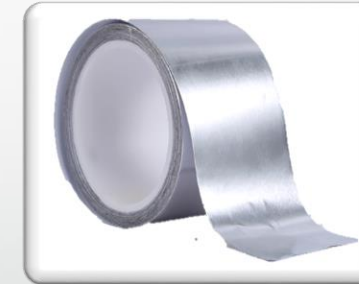
- Representative ally: 1xxx series, 3xxx series, 5xxx series
- Thickness (mm) Width (mm)
 - 0.1~4 400~1600 (1xxx series)
 - 0.2~3.5 200~1500 (3xxx series)
 - 0.2~3.5 1000~1500 (5xxx series)



APPLICATIONS

- Aluminum foil

- Representative ally: 1xxx series, 8xxx series,
- Thickness (mm) Width(mm)
0.01~0.4 100~1600



APPLICATIONS

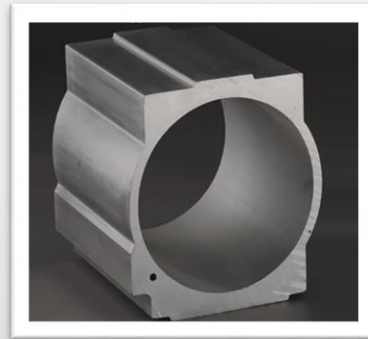
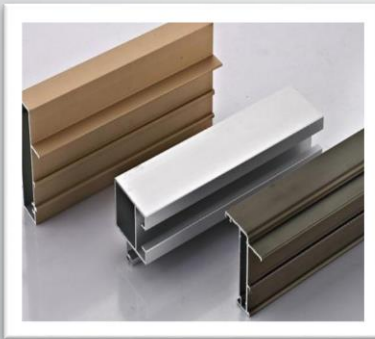
- Extrusions



AVIATION



VESSEL



RAIL TRANSIT



AUTOMOBILE

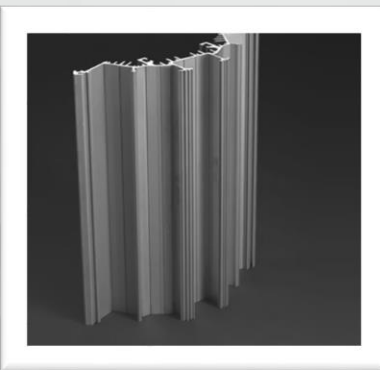
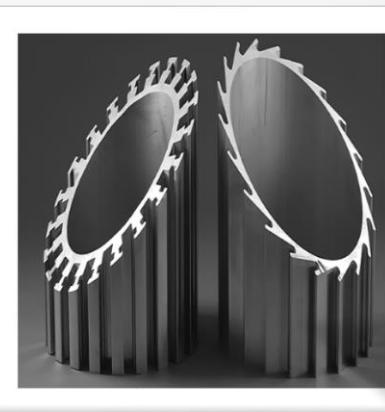


APPLICATIONS

-Extrusions



MACHINERY AND EQUIPMENT



POWER AND ELECTRONICS





Top 8 World Aluminum producers

It may be hard to believe but only 150 years ago aluminum was considered to be silver from clay and an extremely expensive kind of metal. Today, aluminum ranks number two in the consumption volumes among all the metals, surpassed only by steel.



The Aluminum Corporation of China Ltd. (also known as Chalco or Chinalco) is China's largest refined aluminum producer. Producing over 3 million metric tons of the metal in 2011, Chalco is a state-owned enterprise that is listed on the Shanghai, Hong Kong, and New York Stock Exchanges.

The company employs over 100,000 individuals and also has operations related to [copper](#) refining, carbon products, [gallium](#), and rare earths. Major aluminum assets include the Shandong Aluminum Company, Pingguo Aluminum Company, Shanxi Aluminum Plant and the Lanzhou Aluminum Plant.



Shandong Xinfu Aluminum Group Co. Ltd. is China's second largest private aluminum producer.

Following a 20 percent rise in output in 2013, the company again increased output in 2014 - this time by about ten percent - to over 2.3 million tons. Founded in 1972 and headquartered in the Shandong Province of eastern China, the company has over 50 subsidiaries in power generation, alumina and aluminum refining, carbon production and downstream aluminum product manufacturing.

Shandong Xinfu's major aluminum assets include Chiping Huaxin Aluminum Industry Co. Ltd., the Shandong Xinfu Hope Aluminum Co. Ltd. (East Hope Group) and Guangxi Xinfu Aluminum Co. Ltd.



China Hongqiao, which only first showed up on the list of the world's ten largest aluminum producers in 2010, continued to rise up the list in 2014.

The company leapfrogged Alcoa after increasing output by over 700,000 metric tons (a roughly 30 percent increase) from 2013.

Output growth has been driven by capacity expansions and acquisitions, which have provided China Hongqiao with the largest aluminum production capacity in China.

China's largest private aluminum producer was founded in 1994 and is headquartered in Zouping, Shandong. China Hongqiao Group Limited is a subsidiary of China Hongqiao Holdings Limited.



Established in 1979, Dubai Aluminum Corp. (aka Dubal) owns and operates the Jebel Ali aluminum smelter, one of the largest primary aluminum production facilities in the world. With an annual capacity of one million tons, the complex also operates a 2,350-megawatt power station, a large carbon plant, a desalination plant and casting operations.

The company also owns a 50 percent share in Emirates Aluminum (EMAL) in Abu Dhabi where production capacity is expected to reach 1.3 million metric tons by 2014.



is Russian company RUSAL, a company established in 2000. It's assets include facilities for aluminum, alumina and bauxite production located in Russia and Ukraine as well as foreign assets as a result of a number of mergers and acquisitions in the 2000s.



Western Europe is represented in the top producer list by Norwegian company Hydro. This company too has over one hundred years' history: it was established in 1905 originally for implementing hydropower projects and has grown to become the largest international energy and metals holding company.



The world's oldest metal producer, also among the TOP-10, is US company Alcoa. It was established on October 1, 1888 by one of the inventors of the aluminum electrolysis technology currently used all around the world, Charles Martin Hall, and was then called the Pittsburgh Reduction Company. In 1907, the name was changed to Aluminum Company of America and it remained until 1999 when it was officially abbreviated to Alcoa.



Australian-British name Rio Tinto, is one of the world's largest diversified metals and mining companies. In 2007 it purchased for a record USD 38 billion Canadian aluminium company Alcan (Aluminum Company of Canada Limited), thereby becoming one of the global leaders in aluminium production. Along the way, Rio Tinto fended off competition from Alcoa to secure its record acquisition.



Global Suppliers



Is located in Taizhou city, Zhengjiang province and is currently the largest, fastest-growing aluminum sheet, trip and foil processing enterprise in east china.

Representative products: decoration aluminum foil, cut-to-length, tension leveler and high quality aluminum wafer, mirror aluminum, brushed aluminum, roll coating aluminum, colored drawing aluminum, dream aluminum



Was founded in 1993, nowadays, it has been become the world's second largest and Asia's largest research and development for industrial aluminum extrusion products. Representative products : industrial aluminum extrusion products, fabrication, aluminum rolling material



Was founded in 1997, has a total employee of over 2000. has won the ISO9001 quality management system certification, CCS ship with product certification, while achieving national military standards.

Main products : CTP plate stock, PS stock, aluminum electrode capacitor foil, foil stock, deep-draw stock, brazing sheet, alloy sheet and plate.



Was established in 2006 and set up the subsidiaries in Zhengzhou and Shanghai-Henan Yongyang Imp and Exp co.,ltd and Shanghai Defeller International Trading Co.,Ltd

Main products : aluminum sheet, aluminum checkered plate, aluminum coil, aluminum strip, aluminum circle, roller coated aluminum coil, embossed aluminum coil, aluminum foil.



One of the largest integrated primary producer of aluminum in Asia. With a pan-Indian presence that encompasses the entire gamut of operations, from bauxite mining, alumina refining, aluminum smelting to downstream rolling, extrusions and recycling, Hindalco enjoys a leadership position in aluminum and downstream value-added products in India. Main aluminum finished products: alumina, primary aluminum in the form of ingots, billets and wire rods, value-added products such as rolled products, extrusions and foils

EYGPTALUM



Egyptalum's aluminum plant situated at Nag Hammady, some 100 kilometers North from Luxor has come to represent a commitment to investment in the future which reflects the philosophy of Egypt itself.

Main products: billets, wire rods, foundry alloys, ingots & T.bars, rolled products, extrusion profiles.

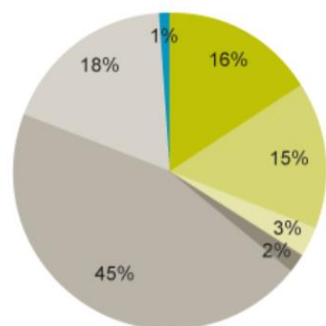
Aluminum production and consumption in the world



On average, world aluminum demand grows 5-7% annually. For example, the global consumption of primary aluminum in 2014 grew 7% when compared with 2013 – amounting to 54.8 million tones. And based on data in 2015, world demand is expected to increase by additional 6% – amounting to 58 million tones.

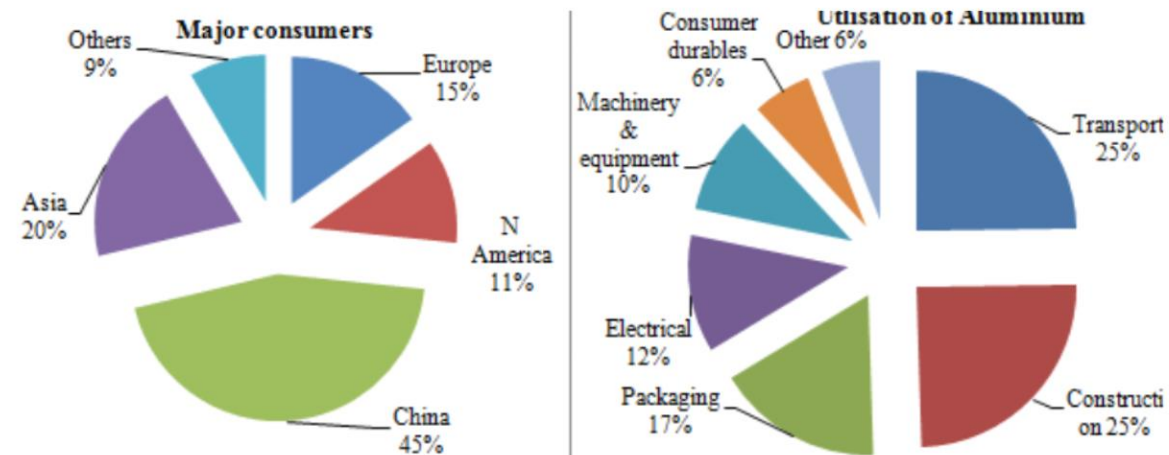
Global aluminium consumption* by region 2015

Total market 78.8 million mt



Europe
 North America
 Central & South America
 Rest of world
 China
 Other Asia
 Australasia

* Consists of semi fabricated products
 (included recycled aluminium)
 Source: CRU LT 2015/Hydro



Note: change every year. Just for growth trend reference



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