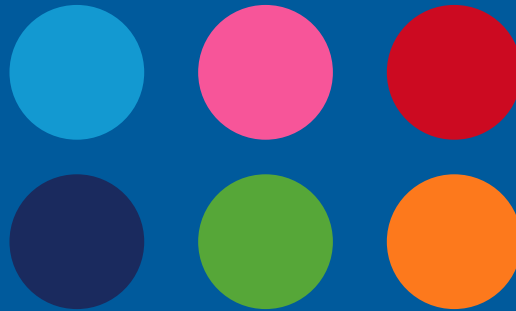


Applications of Bisphenol A



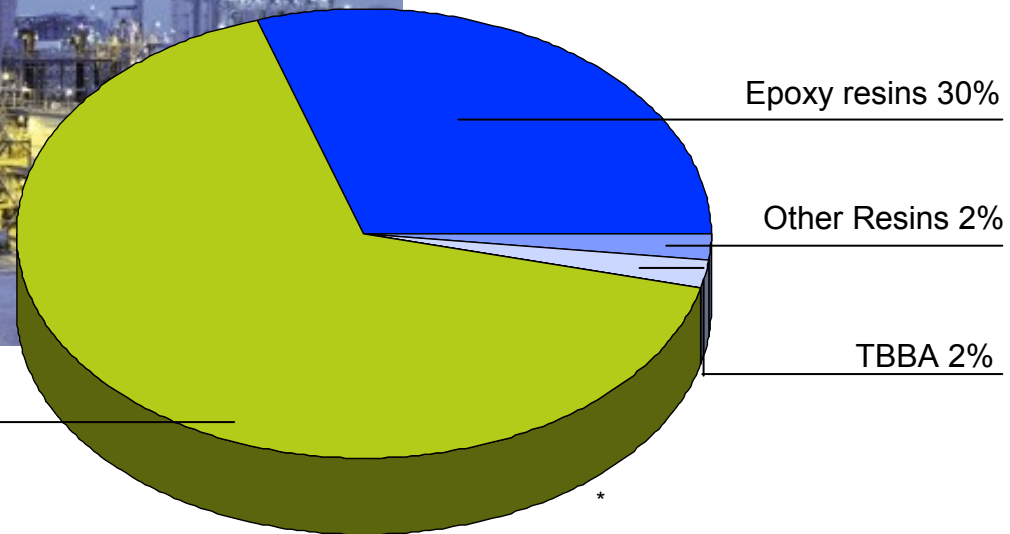
Consumer applications - selection



BPA production



Polycarbonate 66%



*Global Bisphenol A production volume 2006: app. 3.8 million tons

* Data provided by industry

Applications overview



Electrical boards, switches, lamps, parts for kitchen tools, hair dryers, razors

Glazing, corrosion protection, concrete reinforcement, flooring

Lenses, dialysis devices, blood sample reservoirs, medical equipment, dental fillings



Architecture

Medical practice

Household equipment

Entertainment & Communication

Mobile phone housings, CD's, DVD's, computer circuit boards

Leisure and safety

Food & beverage

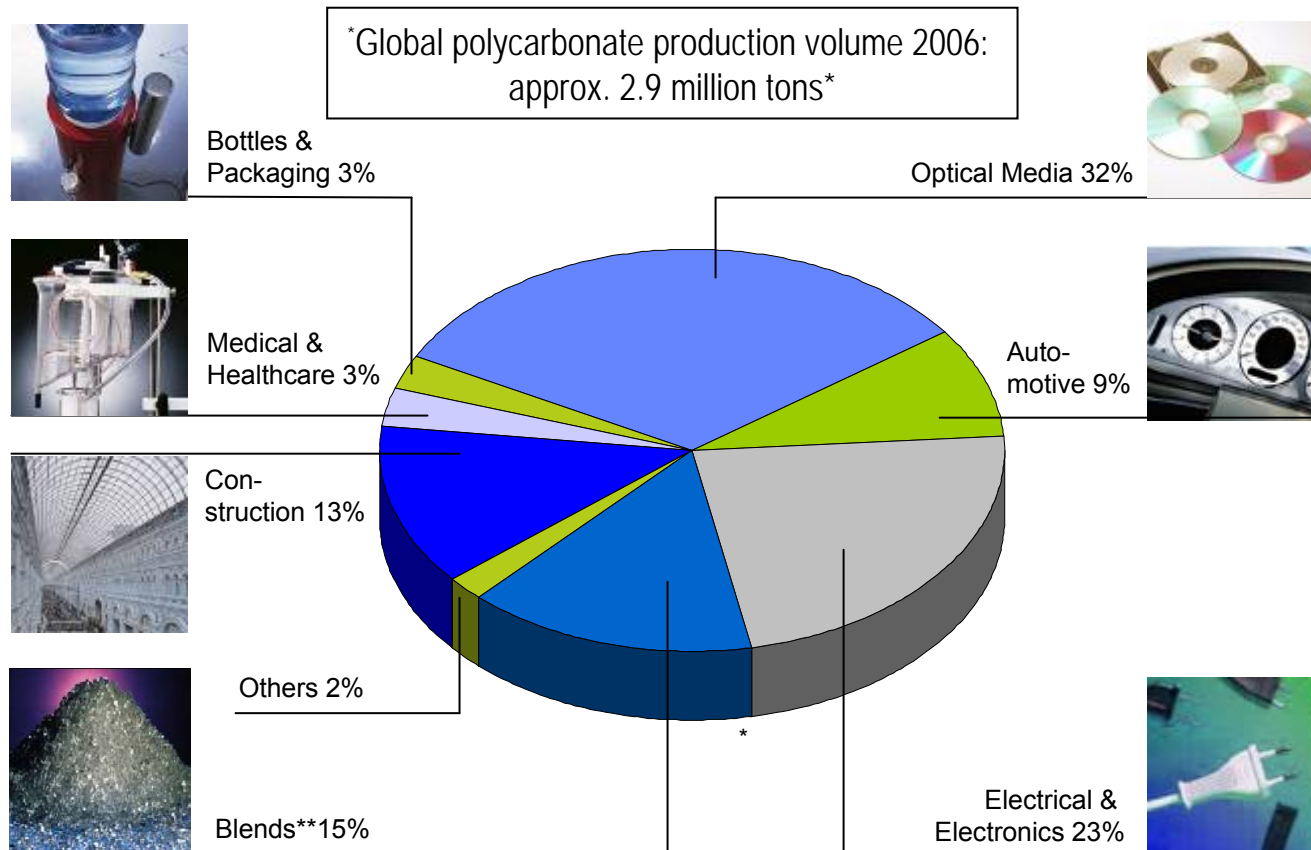
Automotive

Front & rear light covers, interior equipment parts, covers, automotive coatings

food and drink cans, bottles, cutlery, food storage containers, jar sealants

Sports helmets, safety glasses, visors, toys, racing boats, ski/golf/tennis equipment

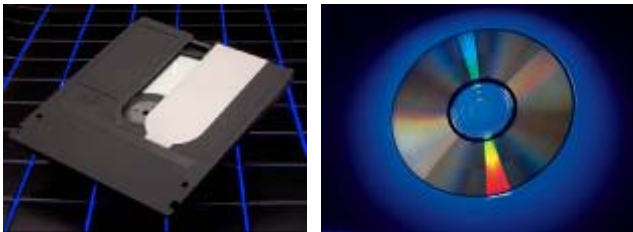
Polycarbonate Production



** mainly used in Automotive and E&E

* Data provided by industry

Optical Media



- Compact Discs
- CD-ROMs
- Digital Versatile Discs
- HD-DVDs
- Blu-Ray Discs
- Holography Discs
- Innovative Data Storage Technology (e.g. Near Field Recording Discs)
- Forgery-proof holographic shadow pictures in ID cards

Construction: Buildings



- Sheets for roofing, conservatory glazing
- Architectural glazing (e.g. sports arenas)
- Greenhouse glazing
- Rooflights
- Cover for solar panels
- Noise reduction walls for roads and train tracks

Construction



- Carport covers
- Glazing for bus stop shelters
- Roadsigns
- Internal safety shields for stadiums
- Transparent cabins for ski lifts





- Housings and fittings for halogen lighting systems
- Roadsigns
- Front panels for advertising posters, sign boards (e.g. fuel stations)
- Large advertising displays
- Dust & water-proof luminaires for streetlights and lamp globes
- Diffusing reflectors for traffic lights



Others: Safety



- Safety goggles
- Protective visors for welding or handling of hazardous substances
- Protective visors for motorbikes, snowmobiles
- Motorbike and cycle helmets
- Fencing helmets
- Safety shields for policemen
- Guards to protect workers from moving machine parts

Others: Leisure



- Ski goggles
- Sun glasses
- Transparent building blocks in toys
- Mouthpieces for musical instruments
- Compass housings
- Binocular housings
- Seats for sleighs
- Ballpoint pen casings
- Transparent roof modules in caravans
- Instrumentation housings in boats
- Suitcase shells

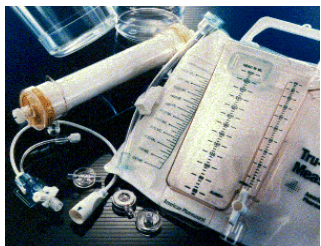
Bottles & Packaging



- Reusable water bottles
- Unbreakable baby bottles
- Reusable milk bottles
- Cutlery
- Food containers (plates, glasses, bowls)
- Drinking water generators (Watercone)



Medical & Healthcare (1)



- Blood oxygenators
- Cardiotomy reservoirs
- Dialysers
- Respirators
- Dentists' operating lamps
- Safety valves for respirators
- Breastpumps
- Inhaler housings

Medical & Healthcare (2)



- Prescription spectacles
- i.v. Connectors
- Scalpel cases
- Laparoscope handles
- Contact lens holders
- Syringe tops
- Medical packaging film
- Ampoules
- Three-way stopcocks and stopcocks
Manifolds
- Tweezers with integrated lighting
- Single-use operating instruments

Electrical & Electronics (1)



- Housings for cell phones, SLR cameras, electrical razors, hairdryers, steamirons, mixers, computers, monitors, TVs, copiers, printers, telephones, microwaves, coffee makers
- Front panels for electric cookers
- Electrical kettles
- Transparent front panels for vending machines
- Interior lighting panels for trains and airplanes
- Backlight units for TVs

Electrical & Electronics (2)

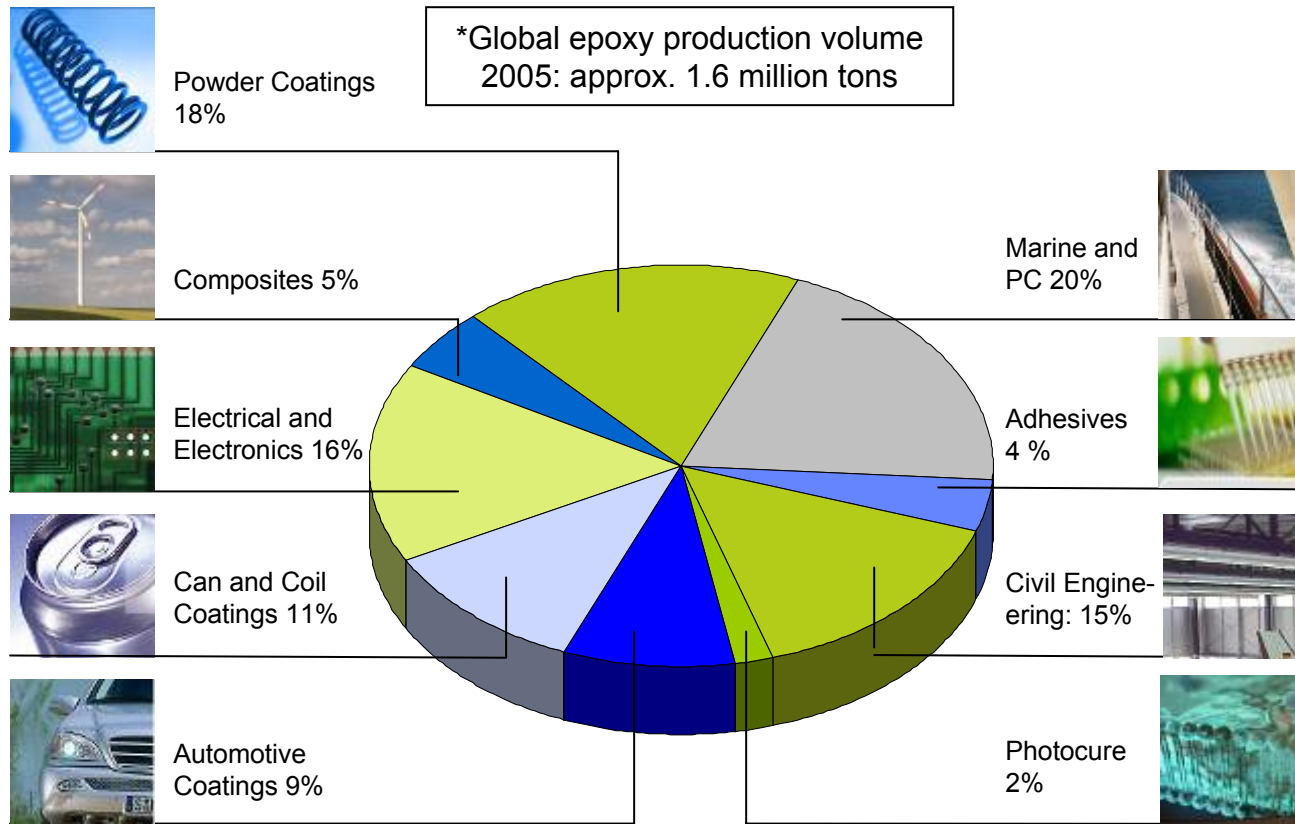


- Housings for switch modules, distributor boxes, fuses, battery power stations, sockets, electrical meters
- Illuminated rotary switches
- Plug connectors
- Switches
- Sockets
- Plugs
- Lamp holders



- Fixed side windows
- Transparent and retractable roof modules
- Windstops in convertibles
- Rear windows
- Transparent rear body parts
- Headlamp lenses
- Headlamp, tail light, indicator reflectors
- Foglamps
- Interior light covers
- High-mount brake lights
- Housings for licence-plate lights
- Bumpers
- Radiator grills
- Dashboards

Epoxy Production



*Source: figures provided by industry

Marine and Protective Coatings (1)



- Water ballast tanks
- Underwater ship hulls
- Cargo tank linings
- Offshore oil drilling platforms
- Supporting steel structures
- Sea containers

Marine and Protective Coatings (2)



- Steel bridges
- Storage tanks (metal and concrete)
- Power plant scrubbers
- Electric motors, engines, machinery
- Drinking water distribution pipes (metal and concrete)
- Gas pipes

Powder Coatings (1)



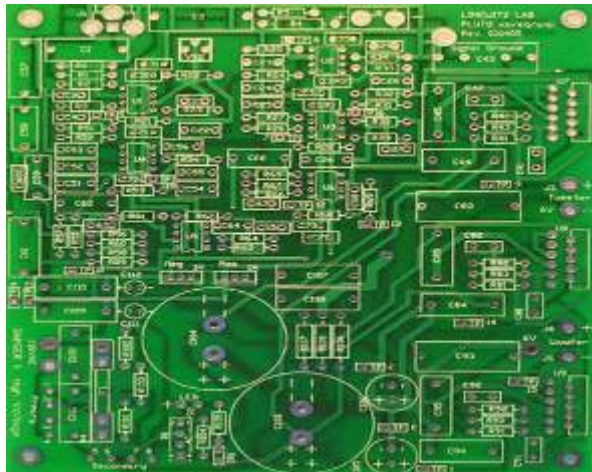
- Construction panels (cladding, metal roofing, ceiling, garage doors)
- Radiators
- Rebars (concrete reinforcement)
- Gardening tools & equipment
- Engine blocks
- Automotive parts

Powder Coatings (2)

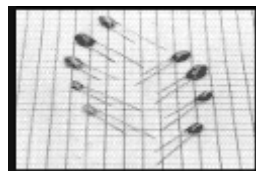


- Steel furniture
- Steel racks, frames, beds
- Office furniture (shelves, metal desks, filing cabinets)
- Pipes, valves & fittings





- Potting/encapsulation electronic parts (transformers, inductors)
- Printed circuit boards





- Flooring (industrial/public buildings, food/catering industry, chemical plants, pharmaceutical industry, hospitals)
- Mortars, grouting (tile & brick linings)
- Fillers, crack repair
- Coatings concrete bridges (seal against water and de-icing chemicals)
- Coating secondary containment walls (groundwater protection)
- Anti-skid coatings for park decks

Can Coatings



- Food & drink cans /can ends
- Menue trays, food trays
- Caps & closure, crown corks
- Drums, pails
- General line cans (oil, hairspray)
- Collapsible tubes (toothpaste, cream)



Coil Coatings (1)



- Construction panels (cladding, metal roofing, ceilings, garage doors)
- Cookers
- Mobile homes, caravans
- Heat, ventilation, Air Conditioning equipment



Coil Coatings (2)



- Office furniture (metal desks, shelves, filing cabinets, cupboards)
- Fridges & freezers
- Dishwashers, washing machines, dryers
- Household appliances (e.g. vacuum cleaners)



Automotive Coatings



- Waterborne primers for cars, buses, railcars

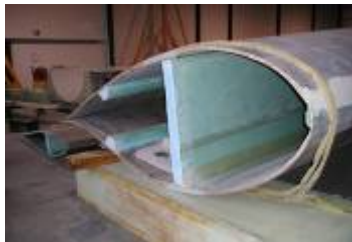
Composites (1)



- Rackets (tennis, badminton, squash), hockeysticks and golf clubs
- Ski, ski poles, snowboards
- Surfboards
- Boats, canoes
- Hang gliders
- Helmets
- Lightweighing bicycles



Composites (2)



- Pipes, valves & fittings
- Storage tanks, containers, gas bottles
- Windmill blades
- Scrubbers
- Pultruded structural parts (rods, bars, shafts, beams, grating)

Composites (3)



- Cars parts (body panels, cabin, spoiler, leaf springs, drive shafts)
- Railcars, boats, yachts
- Aviation (aircraft), aerospace, military (helicopters)

Adhesives



- DIY repair kits (adhesives, fillers)
- Structural adhesives for buildings & construction
- Adhesives for cars, boats, aircraft

Photocure



- Printing inks
- Wood coating
- Paper and board varnish, incl. food packaging
- Coating for plastics and primed metals

