ADVANCED CHEMICAL ETCHING LTD

MEDICAL

MEDICAL DEVICES AND IMPLANTS

Advanced Chemical Etching (ACE) is the world leader in the manufacture of cutting-edge medical and lifescience products produced using a chemical manufacturing process, including innovative titanium and titanium alloy implants.

We continually invest in our intensive R&D program, developing our own unique and safer 'HF-Free' manufacturing processes.

WHY IS HF-FREE IMPORTANT?

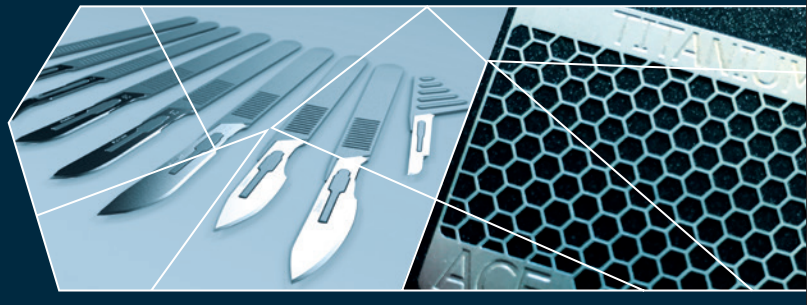
Conventional etching using a Hydrofluoric Acid (HF) and Nitric Acid mix has long been accepted as a major health and safety hazard. It also has quality and volume manufacturing limitations.

ACE is the market leader in HF-Free Etching – by developing in house a safer unique process, this has allowed us to significantly and ***consistently improve quality*** while also ***increasing volume manufacturing in a safer working environment***. No other photochemical etching company does it the ACE way.

The ACE method can produce complex features and geometries in titanium sheets up to ***300×500mm*** with thicknesses ranging from ***10 µm*** to ***1.0mm***. Our ***bespoke titanium etching process*** allows an unrivalled level of etching detail without altering the chemical and mechanical properties of the metals. We can also make medical parts and implants in other metals such as ***Cobalt Alloy***, ***Elgiloy®***, ***Nitinol***, ***Tantalum***, ***Tungsten*** and ***other exotic metals***.

This unique process enables ***ACE*** to etch even ***finer line micro channels*** and ***rapidly profile components*** for customers involved in producing intricate medical devices.

Many medical companies are switching over to ACE's unique solution. Only ACE has the capability to ***consistently provide burr-free***, ***stress-free component manufacturing*** which is '***right first-time***' and '***right every-time***'.



ACE specialise in etching medical approved metals – including stainless steel 316 and Sandvik strip steels – and Europe's only etching line for titanium and titanium alloys.

We offer a number of additional specialist post-process technologies, including ***forming***, ***finishing*** and ***plating***, allowing us to offer ***2D and 3D finished components***. These have included; complex, burr-free and stress-free cranial mesh and dental implants, ultra-thin cathode battery current collector grids used in pacemakers, hearing aid components and bone saw blades with tight tolerance teeth.

Contact ACE today on +44 (0)1952 416 666 to find out what we could produce for you – whether it's 1s or millions.

TYPICAL ETCHED COMPONENTS

- Pacemaker battery grids
- Pacemaker screening cans
- Knife blades
- Implantable springs
- Flexible and rigid meshes
- Medical device electronics
- Micro fluidics filters
- Hearing aid contacts
- Ophthalmic scalpels
- Bone pins
- Bone saw blades
- Cranial mesh

METALS

- Titanium (all alloys)
- Nitinol
- Sandvik Chromflex 7c27m02
- Uddeholm 716
- Stainless Steel (all medical grades)
- Cobalt alloys
- Elgiloy
- Tungsten

A PROCESS OF INNOVATION

ACE CORE CAPABILITIES OVERVIEW

Photo Chemical Etching (net shape)

- Low-cost digital tooling, (no hard tooling for etched parts)
- Burr-and stress-free, flat etched parts
- Unlimited complexity (etching is not a profiling process, so complexity doesn't equal high cost)
- Lead-times in days

Technical Information

Metals	**Almost all Metals**
Thickness	**0.005mm – 2.5mm**
Component size	**575mm x 1475mm (max)**
Tolerances	**> ±0.025mm**
Volumes	**One to Millions**
Min feature	**>0.07mm**
Forming, machining & assembly	**In House**

Aluminium Etching (net shape)

- Proprietary process for etching aluminium
- Clean, smooth edges
- No expensive hard tooling
- Low-cost design iterations – fast turnaround
- Burr-and stress-free – metal properties unaffected
- 100% tighter tolerances than the industry
- Serial production capacity

Technical Information

Metals	**All grades**
Thickness	**0.025mm – 2.5mm**
Component size	**575mm x 1475mm (max)**
Tolerances	**> ±0.025mm**
Volumes	**One to Millions**
Min feature	**>0.07mm**
Forming, machining & assembly	**In House**

Titanium Etching (net shape)

- Lead-times in days
- Unlimited complexity (pay for the first hole only)
- No hard tooling
- Low-cost set up and design iterations
- Burr-and stress-free components
- Accuracy to ±25 microns
- Fine lines as low as 70 microns

Technical Information

Metals	**All grades**
Thickness	**0.025mm – 1.0mm**
Component size	**300mm x 500mm (max)**
Tolerances	**> ±0.025mm**
Volumes	**One to Millions**
Min feature	**>0.07mm**
Forming, machining & assembly	**In House**

ACE – MAKING THE DIFFERENCE IN ***INNOVATION***, ***TECHNOLOGY*** AND ***MANUFACTURING***

CONTACT THE TEAM ON **+44(0)1952 416 666** | **info@ace-uk.net** | **www.ace-uk.net**