

Anodize & Hardcoat Anodize

APPLICATIONS FOR FOOD CONTACT

(Type II Sulfuric Acid & Type III Sulfuric Acid)

MIL-A-8625 F, Type III, Class I (Unsealed), ASTM B580-79 Type A Engineered Hardcoat (Unsealed) specifications.

Anodizing and Hardcoat Anodizing is the controlled formation of aluminum oxide on an aluminum surface utilizing a conductive electrolyte and DC electric current. Hard Anodizing is not a coating in the traditional sense. Traditional coatings involve the deposition of a dissimilar material onto a substrate such as with organic coatings (paints & Polymers), or plated coatings, which involve the plating of metals on to the substrate, such as with chromium plating.

Anodize Coatings are grown from the aluminum surface and do not contain any organic or other metallic substances aside from the constituent materials in the aluminum substrate and aluminum salts including aluminum sulfate.

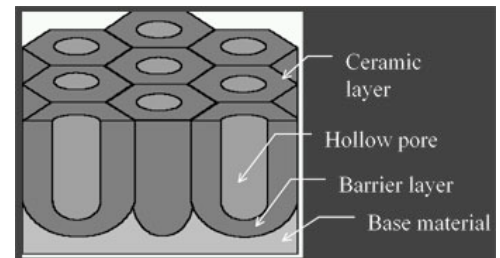
The very nature of the Hard Anodized aluminum oxide surface exhibiting wear characteristics similar to Rockwell C-70 tool steel means that very little wear occurs on Hard Anodized surfaces. Transfer of this aluminum oxide to any food material will be extremely low.

The USFDA Select Committee on GRAS (Generally Recognized As Safe) Substances Review (SCOGS) has included aluminum and its salts as being considered safe for food contact since the list was compiled. This list can be viewed at: <http://www.cfsan.fda.gov/~dms/opascogd.html>

“GRAS substances are distinguished from food additives by the type of information that supports the GRAS determination, that it is publicly available and generally accepted by the scientific community, but should be the same quantity and quality of information that would support the safety of a food additive. Additional information on GRAS can be found the GRAS Notification Program page.” <http://www.cfsan.fda.gov/~dms/opa-noti.html>

The SCOGS Review Committee states about Aluminum: “Aluminum and its salts are found in varying amounts in nearly all foods. In addition to the aluminum occurring naturally in foods, man can be exposed to the aluminum added to foods, to that in aluminum antacids he may take, and to that from aluminum cooking vessels. “The Committee concludes a “Type 1 conclusion”: “There is no evidence in the available information on {substance (aluminum)} that demonstrates, or suggests reasonable grounds to suspect, a hazard to the public when they are used at levels that are no current or might reasonable be expected in the future.”

Microscopic view of surface pores in anodic coating.



Benefits of anodize and hard anodize include:

- Wear Resistance
- Lubricity
- Heat Dissipation
- Aesthetics
- Corrosion Resistance
- Dielectric Properties
- Bonding
- Versatility

Under EPA rules, anodizing is an environmentally friendly process that generates no hazardous waste.

Anodized aluminum meets ELV, RoHS, and WEEE directives. It is the environmentally sound choice for many applications.