

Aquamill OXL

Chemical Composition for the Surface Refinement of Steel Substrates

Scope

AQUAMILL® OXL is a proprietary blend of oxalic acid and complex phosphates. It also contains a wetting agent for the uniform initiation of the chemical reaction that leads to surface refinement.

AQUAMILL® OXL is normally used in open bowl flow-through applications. It may, however, also be used in closed bowl applications.

The use of AQUAMILL® OXL will result in the creation of an isotopic surface.

AQUAMILL® OXL may be used as a primary surface refinement process or it may be used to further refine the surface of steel substrates after the use of more aggressive accelerated mass finishing products such as Hubbard-Hall's Aquamill® XLS C2.

Mixing

AQUAMILL® OXL is used as received.

Processing

AQUAMILL® OXL is normally used in open bowl flow-through applications. AQUAMILL® OXL is added to the vibratory mill at a rate of one gallon per cubic foot of bowl capacity per hour of cut time. A vibratory bowl containing ten cubic feet of work and media would require a flow rate of ten gallons of AQUAMILL® OXL per hour.

The time required to achieve the desired amount of surface refinement is primarily determined by the surface finish of the parts to be processed. For instance, a part with a 30 to 50 RA finish would normally require a cycle time of 60 to 120 minutes when using a twenty to thirty bond plastic or ceramic media to achieve a finish with an RA of 10-15.

It must be pointed out that these are general guidelines and the actual process parameters employed to achieve a desired surface finish are ultimately determined by the alloy, heat treat, and shape of the parts to be processed.

Upon completion of the cut portion of the cycle, a burnishing compound can be added directly to the bowl without the need of the intervening rinse. A burnishing compound such as Hubbard-Hall's MetalGuard® 800-D used at 2% by volume with a flow rate of five to ten gallons per cubic foot per hour will effectively remove the black phase produced by the AQUAMILL® OXL and result in a brightly burnished part in 30 to 60 minutes. The residual film left behind by the MetalGuard® 800-D will protect the parts from corrosion for up to 48 hours while in process.

Precautions

The AQUAMILL® OXL will have a pH of approximately 2.0 and may be irritating to the skin. It is recommended that the operator wear gloves when removing parts from the vibratory bowl for in-process inspection.

Oxalic acid is toxic by injection. It should not be ingested. Employ safe handling and general chemical hygiene protocols required for any toxic chemical when handling and using the AQUAMILL® OXL and its solutions. Employees using and coming in contact with AQUAMILL® OXL should read and thoroughly understand the Material Safety Data Sheet prior to using or handling the AQUAMILL® OXL or its solutions.

WARRANTY: THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.

Our People. Your Problem Solvers.

For more information on this process,
please call us at 203.756.5521 or email: techservice@hubbardhall.com

Hubbard-Hall holds certifications for **ISO 9001:2015**, Responsible Distribution, as accredited by the **ACD** (Alliance for Chemical Distributors) and as a **Women-Owned Small Business**, as well as maintaining an association with **Omni-Chem**¹³⁶.