Enerox Aluminum Desmut F 108

Enerox Aluminum Desmut F 108 is a concentrated *iron-based nitric acid containing* liquid, designed to rapidly remove smut and deoxidizing aluminum. Its formulation provides for effective dissolution of metallic smuts following the etching step. After treatment in the Enerox Aluminum Desmut F 108 bath, parts are suitably conditioned for a wide range of surface finishing cycles, such as zincate, plating, chromate conversion coating, anodizing, and painting.

Features & Benefits

No chromium compounds	Less complex and costly waste treatment
Contains fluoride	Rapid smut removal; High productivity
High activity	Smaller inventory footprint

Physical Data

Appearance	Clear, brown colored liquid
Odor	Slight
Foaming tendency	Very low
Maximum solubility	Complete

Product profile

Nitric Acid	Yes
Fluorides	Yes
Chromium	No
Complexing agents (Gluconate type)	No
Chelates (EDTA, NTA types)	No

Hazard Classification

DOT Hazard Class	8 (Corrosive Material)
DOT Shipping Name	Corrosive Liquid Acidic Inorganic N.O.S.
DOT Shipping Name (continued)	(Ferric Sulfate & Nitric Acid)
UN Number	3264

Packing Group	II
Guide Number	154

Operating Conditions

	Range	Optimum
Concentration	5% – 20%	12.5%
Temperature	70°F – 90°F (21°C – 32°C)	80°F (27°C)
Time	3 – 6 min	As required
Agitation	Solution movement or air	As required

Equipment

Tank	Fiberglass, Koroseal, or PVC lined steel tanks
Heater	Steel coil, steel immersion type, steam fed, or gas fired
Ventilation	* Mechanical to maintain levels below permissible exposure limits
Agitation	Stirrer, pump, work movement, or air

* Use rigid PVC or acid proof ducts or blowers

Solution Make-Up

Danger!! Enerox Aluminum Desmut F 108
contains Nitric Acid. Consult Enerox Aluminum Desmut F 108 MSDS sheet before handling this product. It should be handled with all the safety precautions associated with Nitric Acid.

Be sure the process tank has been drained and cleaned. Fill to within two thirds of final operating volume with clean water (70°F – 90°F). With good solution stirring, gradually add the required amount of Enerox Aluminum Desmut F 108.

After the required amount of Enerox Aluminum Desmut F 108 has been added. mix while adjusting final solution operating volume.

Process Suggestions

After etching, a dark colored surface layer of smut exposes the insoluble metallic oxides. Enerox Aluminum Desmut F 108 working solutions facilitate attack on a wide range of these metallic smuts. Several aluminum alloys on heat treatment form oxide scales. Enerox Aluminum Desmut F 108 is also an effective deoxidizer, while removing any surface smuts. Various aluminum designations, such as:

- 1100 & 3003 wrought alloys
- Most 2000, 5000, and 6000 series aluminum alloys
- High silicon castings such as 380 series are readily deoxidized and smut removal.

The aluminum surface is conditioned, resulting in a clean, "whitened" part, ready for subsequent finishing in plating, anodizing, conversion coating, painting, and welding.

Knowing the aluminum alloy or casting type is critical to successful aluminum finishing. Once determined, the process cycle can be optimized by evaluation, confirming operating conditions for all the related process baths. The Hubbard-Hall sales representative or Technical Service can help recommend these conditions.

The Hubbard-Hall provides a full range of aluminum finishing processes, including soak cleaners, etchants, deoxidizer & desmutters, zincates, strippers (anodize, rack, zincate), chromates, and phosphates.

Analysis Procedure
Enerox Aluminum Desmut F 108 ingredients are consumed during use. Drag out of the Enerox Aluminum Desmut F 108 bath and replenishment with water also dilutes the working solution. Regular maintenance additions of Enerox Aluminum Desmut F 108 are recommended to replenish the bath. This can be accomplished by observing quality of cleaning & conditioning and making appropriate additions as required of the process employed.

Alternatively, the process bath can be analyzed to determine actual concentration of Enerox Aluminum Desmut F 108 and the required addition of product to restore the balanced ratio of all the required components.

Titration Method

1. Pipette a 5 mL sample of the bath into a 250 mL Erlenmeyer flask.
2. Add 50 to 100 mL of clean water.
3. Insert a pH probe, calibrated to pH 4.0 – 5.0.
4. Titrate with Sodium Hydroxide of known molarity, until the endpoint is achieved at pH 4.5.
5. Record mL used.

Calculation

$$Concentration = mL\ NaOH \times (NaOH\ Molarity) \times 2.5$$

Waste Disposal

Enerox Aluminum Desmut F 108 and it's working solutions are acidic. They may be neutralized with caustic to meet local POTW or municipal effluent discharge requirements. Spent Enerox Aluminum Desmut F 108 solutions may contain dissolved metals from the cleaning process. Therefore, additional treatment of the solution may be required to meet discharge requirements.

Caution

Please read and understand the Enerox Aluminum Desmut F 108 Safety Data Sheet before handling and using this product.

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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].