Descaler D

Descaler D is a rapid acting, fluoride type dry acid flake additive used to replace hazardous hydrofluoric acid pickling operations (Stainless Steel and titanium alloys). It is suited for de-smutting wrought and cast aluminum alloys. Furthermore, Descaler D may be used to produce a frosty-white etch on aluminum castings.

Features & Benefits

Dry source of fluoride	Safer to store Free flowing powder Easy to handle and mix Non-fuming Safer to use then hydrofluoric acid

Typical Applications

- Aerospace – in the processing of Ti and Stainless Steel
- De-smutting Al castings in aerospace
- Anodizing – to put a frosty white etch on aluminum
- Industry where cast and wrought aluminum is being used
- In processing of pickling and descaling Stainless Steel in aerospace

Operating Conditions

Pickling and descaling (heavier scale) of stainless-steel alloys 300 and 400 series

Descaler D	8 – 16 oz/Gal (60 – 120 g/L)
Nitric acid 36° Be’	30 – 50% (vol)
Temperature	Ambient – 130°F (54°C)
Tank	Koroseal, Polyethylene, PVC
Heating or cooling coils	Carbon

Pickling (light scale) stainless steel 200, 300, and 400 series

Descaler D		2 – 4 oz/Gal (15 – 30 g/L)
Nitric acid 36° Be’		10 – 25% (vol)
Temperature		Ambient – 120°F (49°C)
Tank		Heaters, and cooling coils same as above

Deoxidizing or De-Smutting Aluminum Castings, Containing Silicon (Alloys 43,13,384, etc.)

Descaler D	2 – 4 oz/Gal (15 – 30 g/L)
Nitric acid 36° Be’	70 – 100% (vol)
Temperature	Ambient
Tank	Koroseal, Polyethylene, PVC
Cooling coils	Carbon

Cooling coils may be required in instances where workload is quite high.

Deoxidizing or De-Smutting Wrought Aluminum Alloys (2000, 6000. 7000 series)

Descaler D	0.25 – 1 oz/Gal (1.8 – 7.5 g/L)
Nitric acid 36° Be’	70 – 100%
Temperature	Ambient
Tank	Koroseal, Polyethylene, PVC

Etching & Desmutting Aluminum Castings

Descaler D	8 – 16 oz/Gal (60 – 120 g/L)
Nitric acid 36° Be’	50 – 75% (vol)
Temperature	Ambient
Tank	Koroseal, Polyethylene, PVC

Pickling and Descaling of Titanium Alloys

Descaler D	2 – 4 oz/Gal (15 – 30 g/L)
Sulfuric acid 66° Be’	10% (vol)
Temperature	Ambient
Tank	Koroseal, Polyethylene, PVC

Bright pickling of titanium

Descaler D	2 – 4 oz/Gal (15 – 30 g/L)
Nitric acid 36° Be’	10 – 15% (vol)
Temperature	Ambient – 100°F (38°C)
Tank	Koroseal, Polyethylene, PVC

Waste Disposal

Neutralize the Descaler D solution with lime (calcium hydroxide) to precipitate the fluoride as calcium fluoride. Do not use soda ash or caustic soda - these chemicals will neutralize the Descaler D solution but will not precipitate the fluoride portion from the bath.

The precipitate, calcium fluoride, may be used as land fill in an approved site.

Also, when neutralizing the Descaler D with any of the above alkaline materials, ammonia is released. The ammonia must be removed from the work area.

The other concern is the metallic content in the Descaler D solution. If the above precipitate contains metallic salts, then the precipitate must be handled as a precipitate containing metallic salts.

Before discarding the solution or precipitate one must consult the local authorities as to the regulation of that area. Regulations will vary from state to state, and from town to town in the state.

Please contact an Aquapure specialist for additional wastewater treatment needs.

Caution

Descaler D is a granular mixture that contains soluble fluorides. It is slightly acidic in nature and is shipped in plastic lined fiberboard containers. When fresh containers are opened, do not breathe the vapors from the container because there is always a slight evolution of hydrofluoric acid above mixtures containing soluble fluorides.

Use rubber gloves and clean scoops for handling the compound. The salts or solutions of the salts should not meet the operator's skin or be splashed in the eyes. The tanks should be ventilated so that the operator will not breathe the gases given off during etching. If it is splashed on the skin, flush off promptly with cold water and apply sodium bicarbonate solution. Do not allow the solution to get under the fingernails.

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