Product Bulletin
Product Name: Deoxidizer 44
Product Code: 2552006
Revision Date: January 9, 2024

Deoxidizer 44

Deoxidizer 44 is an acidic liquid, non-chromated, water-soluble product for deoxidizing/ de-smutting wrought aluminum alloys and cast alloys with low silicon content (less than 1%). Deoxidizer 44 will remove and iron impurities in the surface of the alloy. This product also inhibits the reformation of the natural oxide film on the aluminum surface between operations

Deoxidizer 44 may be used in rack, barrel lines or spray operations prior to spot welding, conversion coating, bright dipping, anodizing or plating.

Features & Benefits

Non-fuming	Safer work environment
Highly concentrated	Smaller inventory footprint
Rapid de smutting	Higher productivity
No organic compounds	Low BOD, COD loading to WWT; lower cost
Non-chelated no phosphate	Simpler WWT; lower cost

Typical Applications

- For use on low silicon cast aluminum and other aluminum alloys as a deoxidizer / smut remover
- Used for pretreatment in all aluminum processing lines after cleaning

Operating Conditions

Concentration	15% – 30 % heavier smut removal requires higher concentrations
Temperature	Ambient – 100°F
Time	30 – 120 sec, depending upon smut buildup and alloy.
Equipment	300 series stainless, PVC, Polypropylene or rubber lined

	tank. Fiberglass or 200 and 400 series stainless steel must not be used.
Agitation	Air or work agitation is suggested to decrease smut removal time.
Ventilation	Required

Control
The only control is a titration procedure. Because of the complexity of the formulation it is not possible to use a test kit

Titration Method

Chemicals and equipment required for titration
500 mL Erlenmeyer flask
50 mL burette
25 mL graduate
10 mL pipette

Concentrated HCL
40% (weight) Potassium Iodide solution
0.1N Sodium Thiosulfate solution
Starch indicator solution

1. Pipette a 5 mL sample of Deoxidizer 44 into a 500 mL Erlenmeyer flask and dilute with 50 mL of water.
2. Add 25 mL of concentrated HCL and mix thoroughly.
3. Add 30 mL of 15% (weight) Potassium Iodide solution and swirl flask to mix.
4. Titrate to a light red color with 0.1 N Sodium Thiosulfate solution; then add 2 to 3 mL of starch indicator solution and continue titrating until the deep blue color just disappears.
5. Record mL used.

Calculation

$$Concentration = mL\ 0.1\ N\ Na_2S_2O_3 \times 1.0$$

Waste Disposal

Discharge to a disposal system. In order to be completely informed on the latest regulations for your area, please contact the local authorities.

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Caution

Deoxidizer 44 is a strongly acidic product containing fluoride and should be handled accordingly. Contact with skin or eyes may cause irritation or burns. The same safety precautions should be observed as when handling acid fluoride products. Personnel should wear eye protection, NIOSH approved air mask, rubber gloves and apron or other protective clothing when working with Deoxidizer 44. SEE SDS FOR DETAILS.

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