Technical Process Bulletin

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TURCO® LIQUID SMUT-GO NC
NONCHROMATED DEOXIDIZER AND DESMUTTER FOR ALUMINUM ALLOYS

DESCRIPTION:

TURCO LIQUID SMUT-GO NC is a dark brown concentrated liquid formulated to deoxidize and desmut aluminum alloys by immersion spray methods.

TURCO LIQUID SMUT-GO NC is free of all chromates and is ideal for processing alloys that require low surface resistance, prior to anodizing, conversion coating, bonding or welding. Nominal etch rates for most aluminum alloys will normally be in the range of 0.02 - 0.10 mils/surface/hr. If higher etch rates are required, TURCO LIQUID SMUT-GO NC-B may be used.

FEATURES:

TURCO LIQUID SMUT-GO NC offers these features:

1. Free of all chromates
2. Can be used either in immersion spray systems
3. Readily soluble in water
4. Easy to control by titration
5. Etch rate can be adjusted to meet specific requirements
6. Effective at ambient temperatures

USE INSTRUCTIONS:

Equipment: Tanks, headers, pumps and associated equipment may be fabricated from stainless steel or other acid-resistant material. Do not use glass or fiberglass.

Spray & Immersion Systems: Prepare a 18 to 20 % by volume solution of TURCO LIQUID SMUT-GO NC in clean, cold water. For optimum results, the use of D.I. water is recommended, especially if low electrical surface resistance is required. Air agitation is recommended for immersion systems. Operate spray system at 20 to 30 psi.

Temperatures: Operate solutions within a temperature range of (50° to 100°F). Optimum temperature is about 25°C for both spray and immersion systems.

Processing Time: Processing time will vary with alloy, condition of bath and bath temperature. Normal processing time is from 1 to 10 minutes.

Rinsing: Rinse parts in cold, overflowing water or by spray methods. If low surface resistance is required, parts should be rinsed with D.I. water, preferably by spray or overflowing rinse of clean water followed by spray rinse of D.I. water. Rinse tanks should be changed daily for optimum results.

CONTROL:

CONCENTRATION OF LIQUID SMUT GO NC

Apparatus:

1. 205942 - Pipet, 5 mL
2. 205700 - Buret, 50 mL
3. 205897 - Iodine Flask, 250 mL
4. 205852 - Cylinder, 50 mL

Reagents:

1. 25% Potassium Iodide solution
2. 205104 - Titrating Solution 104 (0.1N Sodium Thiosulfate)
3. Sulfuric acid, 25% by volume
4. 205010 - Indicator 10 (Starch Indicator)

Procedure:

1. Obtain a sample from the bath, increasing cool to room temperature. Pipet 5 mL into a 250 mL iodine flask containing 50 mLs DI water.
2. Add 10 mL of 25% sulfuric acid.
3. Add 25 mL of 25% potassium iodide solution. Swirl to mix. Stopper and place a little potassium iodide solution in the flange of the iodine flask. Allow to stand in the dark for 5 minutes.
4. Titrate with TS 104. When the solution reaches a golden color, add 1-2 ml Indicator 10. Continue the titration to the endpoint, which is a clear colorless solution which remains colorless for one minute.

Calculation:

mL of TS 104 X 1.21 = % by volume Liquid Smut Go NC Conc.

DISPOSAL INFORMATION:

Dispose of spent solution per local, State and Federal regulations. Refer to HENKEL SURFACE TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional disposal information.

DANGER! Contact may cause severe burns to skin and eyes.

TURCO LIQUID SMUT-GO NC contains nitric and hydrofluoric acids. Avoid contact with eyes, skin and clothing. Do not take internally. Avoid breathing of vapors. Use with adequate (equivalent to outdoor) ventilation.

Protective clothing, such as a chemical face shield or goggles and gloves, boots and apron made from acid resistant materials should be worn when handling and using this product. A NIOSH-approved respirator should be worn when handling liquid or during mist conditions.

Transport and store containers at a temperature below (130°F) and away from metals and glass. do not store with chlorene containing materials.

Before using this product refer to container label and HENKEL SURFACE TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional precautionary, handling and first aid information.

NOTICE:

The above information and recommendations concerning this product are based upon our laboratory tests and field use experience with this or similar products. However, since conditions of actual use are beyond our control, any recommendations or suggestions are made without warranty, express or implied. Manufacturer's and seller's sole obligation shall be to replace that portion of the product shown to be defective. Neither shall be liable for any loss, damage, or injury, direct or consequential, arising out of the use of this product.

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