



ANODAL® ES-1 LIQUID

Anodal ES-1 Liquid is a nickel-free seal concentrate that will provide a quality seal using mid-temperature conditions. The recommended operating temperature range is 170° - 190° F. This product may provide substantial savings in equipment for heating, exhaust and waste treatment. Coatings sealed with *Anodal ES-1Liquid* in accordance with recommended practices will meet or exceed specified requirements using the following ASTM test methods: B136, B117, & B680.

- Provides excellent Salt Spray Resistance.
- Does not cause coatings to yellow.
- Produces a smut-free surface.
- Easy to titrate & control
- Extremely long life

PHYSICAL PROPERTIES:

Appearance:	Slightly cloudy liquid
Specific gravity:	1.13 (9.4 lbs/gallon)

APPLICATION DETAILS:

Concentration:	1 - 3% vol
Temperature:	170 - 190 °F
Time:	10-20 minutes
pH:	5.5 - 6.0
Materials:	Stainless steel or high temperature liner

Note: Filtration should be continuous through a 10-15 micron filter, with the tank being turned over 3 times per shift. Occasionally, Anodal MS-1A can be added (0.1-0.3 % vol) to extend the life of this bath. Such additions are best done on the advice of your Reliant sales or technical representative.

CONTROL METHOD:

1. Pipette a 10 ml. sample from the sealing tank into a 250 ml beaker.
2. Add 50 ml of deionized water.
3. Add 5 ml of Buffer¹, mix well, then add a few drops of Calmagite indicator.
4. While stirring titrate with 0.1M. EDTA to a blue end point.

Calculate: **Anodal ES-1 Liquid (% vol) = EDTA x 0.39**

1) 10% by volume of Conc. NH₄OH solution with the pH adjusted to 9.7 with HCl

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HANDLING PRECAUTIONS:

Appropriate personal protective equipment, when handling this product, include eye glasses and rubber gloves.

WASTE DISPOSAL:

This product contains no heavy metals, and is relatively pH neutral. Check local ordinances before sewerage.

Recommendations, notices or instructions as to handling, use, storage or disposal of this product, including its use alone or in combination with other products, or as to any apparatus or process for its use are based upon information believed to be reliable. No liability is taken with respect to any such recommendations or instructions. Sole and exclusive warranty is that products comply with published chemical and physical specifications as provided on the certificate of analysis. No other warranties, either express or implied are given.