



# Technical Process Bulletin

This Revision: 04/02/2009

**TURCO 4215 NC-LT****DESCRIPTION:**

TURCO 4215 NC-LT is a white granular mix developed for cleaning ferrous and nonferrous alloys by spray, immersion and ultrasonic methods at low temperatures.

TURCO 4215 NC-LT is ideal for cleaning fuel and hydraulic components and for cleaning metals prior to metal bonding.

TURCO 4215 NC-LT contains a balanced blend of organic surface-active agents designed to control any tendencies to foam, even under conditions of severe agitation. A characteristic of this designed foam control is that, at elevated temperatures (above about 40°C), one of the surface active agents will become less soluble, separate and float to the top of the cleaning solution. This is a normal operating characteristic of this product. The oily-looking layer that floats on top of the solution at operating temperature, is then, one of the active ingredients and should not be skimmed.

TURCO 4215 NC-LT is not recommended for use on magnesium alloys.

**FEATURES:**

TURCO 4215 NC-LT offers these features:

1. Noncorrosive to aluminum, steel, copper and plated metals
2. Readily soluble in water
3. Nonfoaming at recommended concentrations and temperatures
4. Free of chromate and silicate
5. Readily rinses from metals
6. Free of harsh caustics

**USE INSTRUCTIONS:**

**Tanks:** Tanks, headers and associated equipment may be fabricated from mild or stainless steel.

**Spray Systems:** Add TURCO 4215 NC-LT to cold water at the ratio of 7 to 15 g/liter of water. Operate tank from 45°-55°C, for 2 to 4 minutes. Rinse with cold to warm water.

**Immersion Systems:** Add TURCO 4215 NC-LT to cold water at the ratio of 45 to 60 g/liter of water. Use air or mechanical agitation. Operate tank from 45°-55°C for 5 to 10 minutes. Rinse with cold to warm water by spray or overflowing immersion methods.

**Ultrasonic Systems:** Add TURCO 4215 NC-LT at the ratio of 4 to 15 g/liter of

water. Degas system prior to cleaning. Rinse with cold to warm water.

**CONTROL:****ALKALINITY (Informational Only):****APPARATUS:**

1. 205945 - Pipet, 25 mL
2. 205402 - Beaker, 250 mL
3. 205700 - Buret, 25 mL
4. pH Meter (optional)

**REAGENTS:**

1. Sulfuric Acid, 1.0000 N (normal) standardized
2. 205002 - Indicator 2 (Bromocresol Green)

**PROCEDURE:**

1. Obtain a sample of process solution and allow it to cool to room temperature.
2. Pipet a 50 mL sample into a 250 mL beaker.
3. Add 5-8 drops of Indicator 2.
4. Titrate with 1.0 N sulfuric acid until the color changes from blue-green
5. To yellow. If a pH meter is available, titrate to pH 4.0.
6. Record the milliliters of 1.0 N sulfuric acid used.

**CALCULATIONS:**

Milliliters of 1.0 N sulfuric Acid x 0.533 = oz/gallon Turco 4215 NC-LT

**Concentration of Turco 4215 NC-LT by Surfactant Titration:****APPARATUS:**

1. Pipet
2. Flask, Volumetric
3. Buret, 50 mL
4. Flask, Erlenmeyer, 250 mL

**REAGENTS:**

1. Titration Solution 45
2. Auxilliary Test Solution 76
3. Indicator 99

**PROCEDURE:**

1. Obtain a sample of process solution. Add a stir bar and mix until the sample has reached room temperature.
2. Pipet 10 mL of sample into a 100 mL volumetric flask. Make to volume with deionized water and mix. Pipet a 10 mL aliquot into a 250 mL Erlenmeyer flask.
3. Add 25 mL of deionized water, 10 drops of Indicator 99 and 5 mL of Auxilliary Test Solution 76.
4. Titrate with Titration Solution 45 to a blue endpoint (free of reddish tint)

**CALCULATIONS:**

$$\frac{(\text{Milliliters of Titration Solution } 45 + 0.167)}{0.314} = \text{gm/L Turco 4215 NC-LT}$$

$$\frac{\text{gm/L Turco 4215 NC-LT}}{7.49} = \text{oz/gal Turco 4215 NC-LT}$$

**SOLUTION MAINTENANCE:**

Maintain the bath concentration within the recommended range by adding fresh material.

**Recommended Concentrations:**

- Spray System: 7.5-15 gm/L (1-2 oz/gallon)
- Immersion System: 45-60 gm/L (6-8 oz/gallon)
- Ultrasonic System: 4-15 gm/L (0.5-2 oz/gallon)

**DISPOSAL INFORMATION:**

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

**WARNING! Causes eye irritation. May cause skin irritation.**

TURCO 4215 NC-LT contains borate, phosphate and silicofluoride. Avoid contact with eyes, skin and clothing. Do not take internally. Use with adequate (equivalent to outdoor) ventilation.

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

Store in closed containers away from direct sunlight or excessive heat.

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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**Form Revised 04 June 2001**

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