



Technical Process Bulletin

Technical Process Bulletin No. 234242

This Revision: 23-11-1990

RIDOLINE® 53

Alkaline Immersion Cleaner

1. Introduction:

RIDOLINE 53 is a powdered, silicated, alkaline immersion cleaner for cleaning aluminum, zinc, cadmium or copper surfaces. RIDOLINE 53 is non-etching, non-smutting and free-rinsing at the recommended concentrations and temperatures.

2. Operating Summary:

<u>Chemical:</u>	<u>Bath Preparation per 100 Gallons:</u>
RIDOLINE 53	6.25 to 18.75 pounds
<u>Operating and Control:</u>	
Free Alkali	5.0 to 15.0 points
Time	1 to 5 minutes
Temperature	140° to 160° Fahrenheit
<u>Typical Operation:</u>	12.5 pounds per 100 gallons of solution volume, immersed for 3 minutes at 150° Fahrenheit.

3. Materials:

RIDOLINE 53

Testing Reagents and Apparatus

4. Equipment:

The process tank, housing, pumps and piping for use with this solution may be constructed of mild steel. The heat exchanger plates should be polished 316 stainless steel. If gas fired burner tubes are used, they should be made of schedule 80 mild steel pipe or equivalent. All process circulating pump seals, valve seats, door seals, and other elastomers which come in contact with the working process solution should be Buna-N, Teflon™, or Viton™. EPDM elastomers should be avoided.

Automatic process control equipment, which promotes consistent quality and controlled costs, is available for automatically controlling this process. Auxiliary equipment, which is engineered and specified for this process, include air operated chemical transfer pumps, chemical metering pumps, reliable level controls, solenoid valve assemblies and bulk storage tanks. CHEMIXERS are available in three sizes for preparing solutions of powdered products which then may be metered into the process at a controlled rate. All chemical pump seals, valve seats and other elastomers which come in contact with the concentrated solution can be Buna-N, Teflon, Viton or Hypalon™.

Our sales representative should be consulted for information on Henkel Surface Technologies automatic process control equipment for this process and any additional questions. In addition the "Henkel Surface Technologies Equipment Design Manual" may be consulted.

5. Treating with the RIDOLINE 53 Solution:

Buildup:

Concentration: 6.25 to 18.75 pounds of RIDOLINE 53 per 100 gallons (U.S.) of solution (1 to 3 ounces per gallon).

Fill the tank about two-thirds full with ambient to warm water (not above 120° Fahrenheit). Dissolve the required amount of RIDOLINE 53. Add sufficient water to bring the solution up to the working level, mix thoroughly and heat to the operating temperature.

Operations:

Temperature: 140° to 160° Fahrenheit.

Time: 1 to 5 minutes.

The exact time should be determined for each application, since the nature of the soil, concentration of RIDOLINE 53 and temperature of the solution affect the rate of cleaning.

After the best values for time and temperature have been established, they should be closely maintained. Temperature should be held within $\pm 5^\circ$ Fahrenheit.

Once an effective concentration has been determined, maintain it for purposes of economy and efficient cleaning. When such a concentration no longer produces acceptable cleaning, excessive contamination by grease and soil is indicated and the solution should be discarded.

6. Testing and Control:

Never pipet by mouth. Use a pipet filler.

Free Alkali:

Pipet a 10 ml sample into a 150-ml beaker. Add 5 drops of Indicator 3. Titrate with Titrating Solution 20 until one drop discharges the last of the pink. The ml of Titrating Solution 20 used is the free alkali value in points.

Free alkali range: within ± 0.5 points of the value found to give the best results.

To increase value 1.0 point (ml): 1.25 pounds of RIDOLINE 53 per 100 gallons (U.S.) of solution.

If desired, the concentration in ounces per gallon or pounds per 100 gallons may be calculated from the following equations or obtained from the table.

Ounces of RIDOLINE 53 per gallon = 0.20 x points.
 Pounds of RIDOLINE 53 per 100 gallons = 1.25 x points.

<u>lb per 100 gal</u>	<u>oz per gal</u>	<u>Points</u>
6.25	1.0	5.0
9.40	1.5	7.5
12.50	2.0	10.0
15.60	2.5	12.5
18.75	3.0	15.0

The cleaner solution strength may be increased or reduced depending upon the type of soil, the time available and the characteristics of the equipment in which it is used.

7. Storage Requirements:

RIDOLINE 53 is a powdered product and does not require special protection in cold weather. The cleaner may absorb moisture and, therefore, it should be stored in a dry area. Opened containers should be kept closed when not in use.

8. Waste Disposal Information:

Applicable regulations covering disposal and discharge of chemicals should be consulted and followed.

Disposal information for the chemical in the form as supplied, is given on the Material Safety Data Sheet for the chemical.

The processing bath is alkaline and contains phosphates. Waste treatment and/or neutralization of rinse water or processing solution may be required prior to discharge. (Refer to Waste Treatment Information Bulletin WT1007, available on request.)

The processing bath and sludge, which accumulates in the bath can contain ingredients other than those present in the chemical as supplied and analysis of the solution and/or sludge may be required prior to disposal.

9. Precautionary Information:

When handling the chemical used in this process, the precautionary, first aid and handling recommendations on the Material Safety Data Sheet for the product must be read, understood and followed.

The processing bath is alkaline and can cause irritation of the skin and may burn eyes. Do not get in eyes, on skin or on clothing. In case of contact, follow the recommendations on the Material Safety Data Sheet for RIDOLINE 53.

Testing Reagents and Apparatus
 (Order only those items which are not already on hand.)

<u>Code</u>	<u>Quantity</u>	<u>Item</u>
205400	..... 2*	..... Beaker, 150-ml
205700	..... 1	..... Buret Assembly, 25-ml Automatic
205003	..... 1 qt	..... Indicator 3 (phenolphthalein)
205590	..... 1	..... Indicator Dropping Bottle
205943	..... 2*	..... Pipet, 10-ml Volumetric
205947	..... 1	..... Pipet Filler
205980	..... 1	..... Thermometer, Floating
205220	..... 1 gal	... Titrating Solution 20 (0.1N H ₂ SO ₄)

* Includes one more than actually required, to allow for possible breakage.

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Company _____ Technical Process Bulletin No. 234242
 Plant _____ Unit _____
 Henkel Surface Technologies Representative _____
 Telephone _____ Sales Office Telephone _____

3
 3 RIDOLINE® 53
 3

Tank 3 Tank No. _____.
 3 Working Volume _____ gallons.
 3 _____ gallons per inch.
 3

Buildup 3
 (Section 5) 3 _____ pounds of RIDOLINE 53.
 3

Operation 3 Time: _____ minutes _____ seconds.
 (Section 5) 3 Temperature: _____ ° to _____ ° Fahrenheit.
 3

Testing and 3
 Control 3
 (Section 6) 3 Free Alkali: Test every _____.
 3 10 ml sample,
 3 add 25 ml water and 5 drops Indicator 3.
 3 Titrating Solution 20 until one drop discharges the last of
 3 pink color.
 3

3 Range: _____ to _____.
 3 Add _____ pounds _____ ounces of RIDOLINE 53
 3 for _____ point.
 3

3	3 lb per 100 gal	3 oz per gal	3 Points
3	6.25	1.0	5.0
3	9.40	1.5	7.5
3	12.50	2.0	10.0
3	15.60	2.5	12.5
3	18.75	3.0	15.0

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