Technical Process Bulletin

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RIDOLINE® 4355

1. Introduction:

TURCO RIDOLINE 4355 is a phosphate-free liquid, immersion-applied, non-etching, cleaning product designed specifically to replace halogenated hydrocarbon vapor degreasers for cleaning aluminum alloys (i.e. 2024, 7075, 6061, etc.).

The product is formulated for removal of various soils such as oils, greases, inks, and wax based markings. At the recommended concentrations this product will afford superior cleaning characteristics compared to vapor degreasing, while providing some amount of interstage corrosion protection.

2. Operating Summary:

Chemical:	Bath Preparation per 100 Gallons:
TURCO RIDOLINE 4355	5 to 15 gallons

Operation and Control:	
Concentration	2.8 to 8.7 mls
Time	2 to 15 minutes
Temperature	110° to 160° Fahrenheit

3. The Process:

The complete process normally consists of the following steps:

A. Cleaning with TURCO RIDOLINE 4355
B. Water rinsing
C. Alkaline cleaning with suitable RIDOLINE® cleaner
D. Water rinsing
E. Deoxidizing/desmutting with suitable DEOXALUME® material
F. Water rinsing
G. Required treatment

4. Materials:

TURCO RIDOLINE 4355
Testing reagents and Apparatus

5. Equipment:

The process tank and related equipment, pumps and piping for use with this solution can be constructed of black iron or mild steel. Stainless Steel is also acceptable. The heat exchanger plates should be polished 304 or 316 stainless steel. Black iron or mild steel is also acceptable. All process circulating pump seals, valve seats, 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. 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.

6. Cleaning with the TURCO RIDOLINE 4355 cleaner solution:

Buildup:
Fill the tank about three-fourths full with water. For each 100 gallons of final solution volume add 5 to 15 gallons of TURCO RIDOLINE 4355 chemical, (the specific amount to be added is dependent upon bath strength desired), and circulate until thoroughly mixed. Finally, add sufficient water to bring solution up to the working level and then heat to the desired operating temperature.

Operation:
Time: 2 to 15 minutes.
Temperature: 110° to 160° Fahrenheit.

It is recommended that the bath be continuously mechanically agitated by means of Eductors, Mixers or other similar device while processing work. Air agitation is not recommended.

7. Testing and Control:

Never pipet by mouth. Use a pipet filler.

TURCO RIDOLINE 4355 Cleaner Bath Titration:
Pipet a 10 ml sample into a 125-ml Erlenmeyer flask. Add 40 to 50 mls deionized water. Next add 3 to 4 drops of Indicator 20. Titrate the sample against Titrating Solution 61 until a bright yellow color is obtained. Record the number of mls of Titrating Solution 61 as the cleaner bath concentration titration.

Concentration range: 2.8 to 8.7 mls

To increase concentration by 0.1 point, add 0.63 liters (0.7 quarts) TURCO RIDOLINE 4355 per 100 gallons.

8. After Treatment:

After cleaning with the TURCO RIDOLINE 4355 chemical, the work is thoroughly rinsed in cold water. The rinse should be continuously overflowed and the overflow should be regulated with the rate of production so that the main body of the rinse never becomes excessively contaminated.

9. Storage Requirements:

TURCO RIDOLINE 4355 is a liquid product which may freeze after extended storage at low temperatures. It is recommended that the product be stored above 32° Fahrenheit. If this product is frozen it should be moved to a warm place and allowed to thaw. After complete thawing and thorough mixing the product may be used with no loss in effectiveness.

10. 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 in the Material Safety Data Sheet for this product.

The processing bath is alkaline. Waste treatment and neutralization may be required prior to discharge.

11. Precautionary Information:

When handling the chemical products used in this process the first aid and handling recommendations on the Material Safety Data Sheets for each product should be read, understood and followed.

The processing bath is alkaline and may cause irritation of the skin and eyes. Do not get in eyes, on skin or on clothing. Do not take internally. Wear face shield, rubber gloves and protective clothing when handling. In case of contact, follow the recommendations on the Material Safety Data Sheet for TURCO RIDOLINE 4355.

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

Code	Quantity	Item
592477	1	Buret Assembly, 25-ml Automatic
++++++	2*	Flask, Erlenmeyer, 125-ml
595415	1 qt	Indicator 20 (Mixed indicator)
592475	1	Indicator Dropping Bottle
592492	2*	Pipet, volumetric, 10-ml
595584	1	Pocket Thermometer (0-220°F)
592441	2	Titrating Solution 61 (0.1N Hydrochloric Acid)

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

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Henkel Technologies
32100 Stephenson Highway
Madison Heights, MI 48071
Telephone: 248-583-9300
Fax: 248-583-2976

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