

Immersion multi-metal alkaline cleaner

1 General Description

Ardrox[®] 6376 is a liquid multi-metal cleaner for tank immersion application. A blend of alkaline salts and wetting agents, it is inhibited to safely remove oils, greases, and other production soils from aluminum, copper, magnesium and titanium. Ardrox[®] 6376 can also be used to clean ferrous metals and is free-rinsing.

Ardrox[®] 6376 is free of APEO and phosphate. The product does not contain EDTA, NTA or their salts.

Approvals:

| | |
|-------------------|-------------------------|
| ✓ Airbus UK | ABP 8-1290 |
| ✓ ASTM | F-945 (conformance) |
| ✓ CFMI | CFM56 |
| ✓ GE | 70-80-04 |
| ✓ Pratt & Whitney | 70-12-00 |
| ✓ Rolls Royce | CSS204 & OMat 1/24 |
| ✓ SAE | ARP 1755B (conformance) |
| ✓ SAFRAN | Pr-1500 |
| ✓ SNECMA | DMR 13-300 & DMR 70-700 |
| ✓ V2500 | 01-072 |

Ask your Chemetall representative for a complete list of approvals

2 Chemicals Required

ARDROX[®] 6376

ARDROX[®] 6376 AA

3 Physical and Chemical Properties

| Property | Unit | Ardrox [®] 6376 | Ardrox [®] 6376 AA |
|----------------------|--------|-----------------------------|-----------------------------|
| Appearance | - | clear, straw-colored liquid | clear, straw-colored liquid |
| Density | g/ml | 1.04 @ 20°C | 1.43 @ 20°C |
| (concentrate) | lbs/gl | 8.70 @ 68°F | 11.96 @ 68°F |
| pH | - | Approx. 12 | Approx. 14 |
| Flash point | - | None | None |
| Miscibility in water | - | Unlimited | Unlimited |

These are typical values only and do not constitute a specification.

4 Application

Ardrox[®] 6376 can be used in immersion tanks and ultrasonic bath.

Ardrox[®] 6376 is mixed with water at a concentration range of 10 to 30 % v/v in water, and then heated from 60°C (140°F) to 80° (180°F). In a typical cleaning operation, parts are immersed for minimum 5 minutes, usually 15 to 30 min. and rinsed in overflowing water for 30 to 60 seconds.

Agitation enhances and speeds up cleaning.

Note: Some production operations may require other operating instructions depending on soiling, installation and material surface. The Chemetall representative will recommend the best way to use this product base upon production requirements.

Run cleaning solution as per the instructions of the engine manufacturer standard procedure.

5 Effects on materials

When Ardrox® 6376 is used in the prescribed manner, no significant corrosion will occur on the majority of metals including steel, aluminum, copper and titanium.

Stainless steel or mild steel are suitable for tank construction.

6 Storage

Store in a cool place, with protection from freezing conditions.

7 Safety guidance

Before operating the process described it is important that this complete document, together with any relevant Safety Data sheets, be read and understood.

8 Waste release

Any release shall respect all the applicable national and local regulation.

9 General information

Chemetall supplies a wide range of chemical products and associated equipment for cleaning, descaling, paint and carbon removal, metal working and protection and non-destructive testing. Sales Executives are available to advice on specific problems and applications.

Version 7 of December 18, 2015

Method of Control

A) Free alkalinity

1. Restore the volume of the tank to its initial level, if necessary by adding water. Thoroughly mix and take a sample.
2. After allowing to cool to ambient, pipette a 5.0 ml sample of Ardrex 6376 into an Erlenmeyer Flask
3. Add 25 ml of deionized water.
4. Add 5 drops Phenolphthalein.
5. Titrate with 0.1N HCL or 0.1N H2SO4 until the color changes from pink to colorless
6. Record the mL's of testing solution as 'FA'
7. **Specified range for FA: 3.5 – 5.0**
8. Add 12.5 liters of Ardrex 6376 and 0.7 liters of Ardrex 6376AA for 1000 liters of tank solution to bring the solution strength up 1 titration point.

B) Total alkalinity

1. After allowing to cool to ambient, pipette a 5.0 ml sample of Ardrex 6376 into an Erlenmeyer Flask
2. Add 25 ml of deionized water.
3. Add 5 drops Bromophenol Blue.
4. Titrate with 0.1N HCL or 0.1N H2SO4 until the color changes from blue to yellow
5. Record the mL's of testing solution as 'TA'
6. Calculate the concentration of Ardrex 6376 as below:

$$TA * 3.65 = \% \text{ b.v. Ardrex 6376}$$
7. **Specified range for TA: 3.0 – 8.0**
8. Add 2.5 liters of Ardrex 6376 for 1000 liters of tank solution to bring the solution strength up 1 titration point.
9. Limit the maximum concentration by partial dumping of the bath and restore the volume of the tank to its initial level by adding water.

| Total alkalinity (TA) | Concentration (%) |
|-----------------------|-------------------|
| 3.0 | 11.0 |
| 4.0 | 14.6 |
| 5.0 | 18.3 |
| 6.0 | 21.9 |
| 7.0 | 25.5 |
| 8.0 | 29.2 |

Head Office
 Chemetall GmbH
 Trakehner Straße 3
 60487 Frankfurt am Main
 Germany

T +49 69 7165 0
 F +49 69 7165 3018
surfacetreatment@chemetall.com
www.chemetall.com

® registered trademark.

The above details have been compiled to the best of our knowledge on the basis of tests and research work and with regard to the current state of our practical experience. This technical product information is non-binding. No liabilities or guarantees deriving from or in connection with this leaflet can be imputed to us. Statements relating to possible uses of the product do not constitute a guarantee that such uses are appropriate in a particular user's case or that such uses do not infringe the patents or proprietary rights of any third party. The reproduction of any or all of the information contained in this leaflet is expressly forbidden without Chemetall's prior written consent.

© Copyright 2013 Chemetall GmbH Frankfurt am Main, Germany.