Ardrox® 1631

READY TO USE TITANIUM SCALE CONDITIONER

1 Description

Ardrox® 1631 is a non-chromate containing aqueous caustic alkali blend. This product is intended for use as an aid to removing heat scale from titanium alloys. When used in the prescribed manner it will completely remove thin light gold coloured and thicker dark blue coatings from various titanium alloys.

After rinsing the process is usually followed by a brightening / etching treatment in nitric acid.

Approvals

✓ SAE	ARP 1755B (partial conformance)
✓ Rolls Royce	RRP 51001

Ask your Chemetall representative for a complete list of approvals.

2 Physical and chemical properties

Property	Typical Value	Unit	Test Method
Appearance	Clear, colourless liquid	-	-
Density (undiluted)	Approx. 1.45 at 20°C / 68°F	g/ml	-
pH (undiluted)	> 14 at 20°C / 68°F	-	-

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

3 Method of use

Ardrox® 1631 is used as supplied.

Recommended process parameters:

Operating temperature:	90 °C (194 °F) - 120 °C (248 °F)
Immersion time:	30 – 60 min.
Concentration:	> 13 mL

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

After treatment parts are thoroughly rinsed, preferably with an air/water gun.

4 Effects on material

Ardrox® 1631 will attack aluminium, cadmium, magnesium and zinc. It is safe in contact with steel.

5 Equipment materials

Tanks and heaters should be constructed in stainless steel. The tanks should be covered when a process temperature above 95 °C (203 °F) is specified.

6 Storage

Store under normal conditions with the containers tightly closed. Protect from freezing.

7 Labor and environmental protection

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

All local and national regulations on the transport, storage, use and waste treatment of chemicals in concentrated or diluted form and as working solutions must be obeyed.

8 General Information

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

Method of Control

Required chemicals

- ✓ Testing solution: 1N hydrochloric acid solution
- ✓ Indicator solution: phenolphthalein

Measure

Withdraw a sample of Ardrox® 1631 from the tank and cool.

Pipette 10 mL of the bath sample into a 200 mL volumetric flask and make up to the mark with distilled water.

Pipette 25 mL of the solution from the volumetric flask into each of two 250 mL conical flasks and add a few drops of phenolphthalein indicator. The solution will turn pink.

Titrate the contents of the conical flasks with 1N hydrochloric acid to a clear end point. Note the titration value obtained. The two titrations should agree to within 0.1 mL.

The average titration value for a freshly made up bath is 16.3 ml (+/- 1,5 mL).

Replenishment of the bath

Increases in strength should be made by replacing 25 % of the tank using Ardrox® 1631. The titration value should be kept in the specified range.

If the strength of Ardrox® 1631 is high, then for every 1mL in titration value above the OEM specification, add 5 litres of demineralised water per 100 litres of tank solution.

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