



**Technologies**

## **TECHNICAL BULLETIN**

ABN: 82 001 302 996

135-141 Canterbury Road, Kilsyth Victoria 3137

Phone : (613) 9728 7200 Fax : (613) 9761 7179

# **DEOXYLYTE 10**

## **SUMMARY**

### **1. INTRODUCTION**

**Deoxylyte 10** is an acidic, liquid passivating chemical used in either an immersion or spray final rinse to improve paint adhesion and minimise under film corrosion and blistering.

This product is a chromate/phosphate mixture which is a better passivator than **Deoxylyte 9**. Otherwise it has the same basic properties.

**Deoxylyte 10** is recommended when the make-up water is above 100 ppm in alkalinity (expressed as  $\text{CaCO}_3$ ).

### **2. MAKE UP AND OPERATION**

Fresh baths are normally made up with 320 - 600 ml of **Deoxylyte 10** per 1,000 litres of bath and used at temperatures up to 82°C.

If the bath is prepared from demineralised water, or very low alkalinity mains water, the lower concentration is used. For water of high alkalinity, more **Deoxylyte 10** should be used. (Refer Section B3.)

Contact time is 5-30 seconds, and spray application requires a nozzle pressure of 70-100 kPa.

The working bath is controlled by two simple titration tests, and is replenished accordingly.

### **3. EQUIPMENT**

Tanks pipework etc. for **Deoxylyte 10** baths may be constructed of mild steel.

## TECHNICAL DETAILS

### 1. BATH MAKE UP AND CONTROL

#### (a) Make up of Fresh Bath

For each 1,000 litres (220 gallons) of water in the bath, add with stirring:

**Deoxylyte 10                    320 - 600 ml**

#### (b) Control Points

Total Acid titration	Less than 6ml
Free Acid titration	0.7 - 1.3ml
Temperature	Up to 82°C (180°F)
Contact Time	5-30 seconds
Pressure (spray only)	70-100 kPa (10-15 p.s.i.)

### 2. TESTING AND BATH MAINTENANCE

#### (a) General

Normally the Free Acid level does not vary much during a working day.

The Total Acid titration, on the other hand, provides an indication of carry over from the zinc phosphate stage. If Total Acid levels rise during the course of a day, contamination is taking place. The fresh water input to the previous rinse stage should either be increased or its distribution improved.

#### (b) Total Acid Titration

- (i) Take a 100ml sample of the bath and transfer to a 250ml conical flask.
- (ii) Add 6-10 drops of Phenolphthalein indicator solution and mix.
- (iii) Titrate while stirring, with 0.1N Sodium Hydroxide solution until a faint permanent pink colour is obtained.
- (iv) Record the number of millilitres of 0.1N Sodium Hydroxide used as the Total Acid titration.
- (v) Total Acid titration should not exceed 6ml. All or part of the bath should be dumped and replaced with fresh water and **Deoxylyte** when this occurs.

(c) **Free Acid Titration**

- (i) Take a 100ml sample of the bath and transfer to a 250ml conical flask.
- (ii) Add 6-10 drops of Bromo Cresol Green indicator solution, and mix.
- (iii) Titrate, with stirring, with 0.1N sodium hydroxide solution until the yellow colour changes to green.
- (iv) Record the number of millilitres of 0.1N sodium hydroxide as the Free Acid titration.
- (v) Free Acid is maintained within limits by the addition of 44 millilitres of **Deoxylyte 10** per 1,000 litres of bath for each 0.1ml below the specified limits.

**3. OPERATIONAL RECOMMENDATIONS**

- (i) **Deoxylyte 10** baths may be operated at any convenient temperature, although preferably this should not exceed 82°C as some resolution of the coating may occur.

In general, the lowest temperature compatible with drying conditions available should be used.

- (ii) If the work has seams or pockets where **Deoxylyte** solution may be trapped, a supplementary rinse with deionised water is advisable.
- (iii) Waters which exceed 200 ppm of alkalinity (expressed as CaCO<sub>3</sub>) are unsuitable for make up of **Deoxylyte 10** baths, because of retention of soluble salts which can lead to under paint blistering.

**4. PLANT MAINTENANCE**

Screens (to protect circulating pumps and nozzles) should be cleaned daily.

Nozzles should be checked for alignment and blockages; and a regular program adhered to for their removal and cleaning.

**5. HANDLING PRECAUTIONS**

**Deoxylyte 10** is strongly acidic. Operators should wear gloves, goggles, and protective clothing when handling.

If splashed onto the skin, wash off with copious amounts of water and soap.

If splashed into eyes, flush the eye with water for 15 minutes.

In case of ingestion, give the patient copious quantities of milk or water (milk preferred.)  
**DO NOT INDUCE VOMITING.**

In all cases, seek medical attention immediately.

**Deoxylyte 10** contains chromic acid. Do not allow to come into contact with any combustible material such as rags, paper, etc. or solvents, as a fire may result. Treat waste or spillage by using sodium metabisulphite, then neutralising with soda ash.

## 6. SPECIFICATIONS

**Deoxylyte 10** conforms to Ford Spec. M-168-9A (T), Chrysler's Spec. MS 3485, and General Motors Spec. PN9981272.

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