



PARCOLENE 99

CHROMIUM FREE POST TREATMENT

1. INTRODUCTION

Parcolene 99 post treatment chemical is a patented, chromium free post treatment especially formulated for use over conversion coatings. The post treatment is free of volatile organic components and increases the corrosion resistance of painted metal surfaces.

Parcolene 99 is a reactive, resin based post treatment chemical, containing no heavy metals. Its corrosion resistance performance is equal to that of chromium containing post treatments. The treatment solution may be applied by spray application or by immersion application under ambient conditions and is followed by a deionised water rinse.

2. OPERATING SUMMARY

Chemical	Bath Preparation per 1,000 litres
*Parcolene 6	8 to 80 ml
Parcolene 99A	7.5 kg (7.5 litres)
Operation and Control	
pH	5.0 to 6.0
Concentration	13 to 19 points
Time	20 to 120 seconds
Temperature	Ambient

- The **Parcolene 6** is added to the tank before the **Parcolene 99A** to adjust bath pH if the make up water is above the 5.0 to 6.5 pH range.

3. THE PROCESS

The complete process for conversion coating a metal surface normally consists of the following steps:

- Cleaning
- Water rinsing
- Surface conditioning
- Conversion coating
- Water rinsing
- Post treatment with **Parcolene 99**
- Deionised
- Drying (optional)

4. MATERIALS

Parcolene 99A

Parcolene 80B

Parcolene 6

Parco Primer 40

Testing Reagents and Apparatus

5. EQUIPMENT

It is preferred that all equipment for use with the process bath be constructed of stainless steel. If not possible, equipment constructed of mild steel may be used.

Process piping and pumps should be constructed of 316 or 304 stainless steel alloys. Various formulations of plastic pipe may be used with recommended support spacing, Schedule-80 being generally recommended. PVC Type I is limited to maximum process temperatures of 60°C. CPVC and PP may be used up to a maximum process temperature of 90°C. PVDF may be used for all expected operating temperatures and may reduce the rate of scale build up in process piping. All process circulation pump seals, valve seats, door seals, etc., which come into contact with the process solution and occasional acid equipment cleaners, can be Buna-N, EPDM, Viton™ or Teflon™. Note that while Hypalon™ is compatible with the process solution, it is not compatible with acid equipment cleaners which may be used.

Chemical feed pump parts and other elastomers which may come into contact with the concentrated replenishing chemical can be Buna-N, EPDM, Hypalon, Viton or Teflon.

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

6. SURFACE PREPARATION

The post treatment follows the water rinse after the conversion coating application. Effort should be given to providing an adequate rinse following the conversion coating step to avoid excessive contamination of the post treatment.

7. POST TREATING WITH PARCOLENE 99

Build Up

Fill the tank about 3/4's full with water, preferably deionised water. Test for pH. It should be between 5.0 and 6.5. Small increments of **Parcolene 6**, no more than about 15 ml per 1,000 litres, should be added to lower the pH. After adjusting the pH, add 7.5 kg (7.5 litres) of **Parcolene 99A** for each 1,000 litres and then add sufficient water to bring the solution up to the working level. Mix thoroughly. Determine the pH and adjust if required before beginning operation.

Note: The addition of **Parcolene 6** should be made before the addition of **Parcolene 99A** during build up.

If the batch foams excessively, add **Parcolene 80B** in small increments of 8 ml per 1,000 litres while circulating the solution until the foam subsides.

7. POST TREATING WITH PARCOLENE 99 (continued)**Operation**

The **Bonderised** metal, wet from the water rinse, is treated with the post treatment. Either spray or immersion application may be used.

Time: 20 - 120 seconds

Temperature: Ambient

If foaming occurs during operation, small increments of 8 mls of **Parcolene 80B** should be added. Excessive usage of **Parcolene 80B** should be avoided.

8. TESTING AND CONTROL**pH Determination**

The pH is determined using a pH meter standardised at pH 4 and pH 7.

Recommended pH Range: 5.0 - 6.0.

To reduce pH by 0.1: Add 8 ml of **Parcolene 6** per 1,000 litres.

To increase pH by 0.1: Add 30 ml of **Parco Primer 40** per 1,000 litres.

Concentration

Pipette (or discharge from a burette) exactly 10.0 ml of Titrating Solution 15 into a 150 ml beaker. Add 50 ml of water and then add 10 ml of Reagent Solution 44. With a 10 ml measuring pipette or a 50 ml open top burette, determine the number of mls (points) of the operating bath required to discharge the pink colour. The resulting solution should be orange yellow.

Concentration Range: 13 to 19 points.

Note: The greater the concentration, the lower the points (ml).

To reduce titration by 1.0 point (increase concentration 0.6 kg per 1,000 litres) add 0.6 kg of **Parcolene 99A** per 1,000 litres.

The concentration may be determined from the following table:

Concentration (kgs per 1,000 litres)	Titration (points or ml)
5.0	19.2
7.5	14.4
10.0	10.5
12.0	8.6

9. AFTER TREATMENT**Deionised Water Rinsing**

A deionised water rinse is preferred in order to obtain optimum results from the treatment. The deionised water rinse should remove all water soluble salts from the treated surface. The design of the equipment is important for efficient use of deionised water. Our representative should be consulted.

Drying

After treatment the parts must be dried in an indirect fired oven prior to painting.

10. STORAGE REQUIREMENTS

Parcolene 99A may be precipitate if stored at temperature below 4°C or above 40°C. The product must be stored between 4°C and 40°C. If exposed to temperatures outside that range for short periods, the product should be immediately returned to the proper temperature and stirred.

11. WASTE DISPOSAL INFORMATION

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

Disposal information for **Parcolene 99A, Parcolene 80B, Parcolene 6 and Parco Primer 40** is given on the Material Safety Data Sheet for each product.

The used processing bath contains ingredients which should not be discharged directly into streams or lakes. The bath should be discharged to the facility waste treatment works or to a municipal waste treatment works.

The processing bath and sludge 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.

12. PRECAUTIONARY INFORMATION

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

The processing bath is essentially non-irritating and non-toxic.

13. TESTING REAGENTS AND APPARATUS

(Order only those items which are not already on hand).

<u>Quantity</u>	<u>Item</u>
2*	Beaker, 150 ml
1 litre	Buffer Solution 7 (Na ₂ HPO ₄ , KH ₂ PO ₄ Solution)
1 litre	Buffer Solution 100 (0.05M potassium acid phthalate, thymol), pH = 4.
1	Burette Assembly, 50 ml Automatic.
2*	Pipette, 10 ml Measuring.
2*	Pipette, 5 ml Measuring.
1	Pipette Filler.
1	Pitcher, Graduated, Plastic.
5 litre bottle	Reagent Solution 44 (50% H ₂ SO ₄).
1 litre	Titration Solution 15 (0.042N KMnO ₄).
1	pH meter.

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

DISCLAIMER

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