



Technologies

PARCOLENE 80A CHROMIUM-FREE POST TREATMENT

1. INTRODUCTION

PARCOLENE 80A post treatment chemical is especially formulated for use over iron phosphate and zinc phosphate conversion coatings. The post treatment increases the corrosion resistance of painted metal surfaces.

PARCOLENE 80A chemical is an environmentally acceptable post treatment chemical whose 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 and should be followed by a deionised water rinse.

2. OPERATING SUMMARY

CHEMICAL	BATH PREPARATION PER 1,000 LITRES
Parcolene 6	30 ml
Parcolene 80A	10 litres
OPERATION AND CONTROL	
pH	5.5 to 6.5
Concentration	5 ± 0.5 points
Time	20 – 90 seconds
Temperature	43 – 50°C
The Parcolene 6 must be added to the tank before Parcolene 80A is added.	

3. THE PROCESS

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

- A. Cleaning
- B. Water rinsing
- C. Conversion coating
- D. Water rinsing
- E. Post Treatment with **Parcolene 80A**
- F. Deionised water rinsing
- G. Drying (optional)

4. MATERIALS

Parco Primer 40

Parcolene 80A

Parcolene 6

Testing Reagents and apparatus

5. EQUIPMENT

It is preferred that all equipment for use with the conditioning 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 1 is limited to maximum process temperature of 60°C CPVC and PP may be used up to a maximum process temperature of 88°C. PVDF may be used for all expected operating temperatures and may reduce the rate of scale buildup 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.

Support equipment available from Henkel Australia for this process includes: chemical feed pumps, level controls, transfer pumps and bulk storage tanks.

Our Sales Representative should be consulted for information on Henkel automatic process control equipment for this process and any additional questions. In addition, the "Henkel Technologies Equipment Design Manual" may be consulted.

6. SURFACE PREPARATION

The post treatment follows the water rinse after the conversion coating application treatment. 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 80A

Buildup

Fill the tank about three-fourths full with water, preferably deionised water. Add 80 ml of **Parcolene 6** for each 1,000 litres of working solution volume and circulate or stir the solution to assure mixing. Test for pH. It should be between 5.0 and 5.5. Small increments of **Parcolene 6**, no more than about 10 ml per 1,000 litres, should be added to lower the pH. After adjusting the pH, add 10 litres of **Parcolene 80A** for each 1,000 litres and then add sufficient water to bring the solution up to the working level. Mix thoroughly and then heat to the operating temperature. Determine the pH and adjust if required before beginning operation.

NOTE: The addition of **Parcolene 6** must be made before the addition of **Parcolene 80A** during buildup.

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

Operation

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

Time: 20 to 90 seconds
Temperature: 40 to 60°C (preferably 43 to 49°C.)

8. TESTING AND CONTROL

pH Determination

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

Recommended pH Range: 5.5 to 6.5.

To reduce pH by 0.1: Add 10 ml of **Parcolene 6** chemical per 1,000 litres of bath.

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

Frequent testing of pH and small additions of **Parcolene 6** chemical or **Parco Primer 40** chemical are preferred. Always avoid large additions of either pH adjustment chemical.

Concentration

Pipette (discharge from a buret) exactly 5.0 ml of Titrating Solution 15 into a 150 ml beaker. Add 50 ml of water, and then add 5 ml of Reagent Solution 44. With a 1 ml measuring pipette or a 50 ml open top buret, determine the number of mls (points) of the operating bath required to discharge the pink colour. The resulting solution should be pale yellow.

Concentration range: 5 ± 0.5 points (10 litres per 1,000 litres.)

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

To increase concentration 1 kg per 1,000 litres (reduce titration by 0.5 points) add 1.0 kgs of **Parcolene 80A** chemical per 1,000 litres.

The concentration may be determined from the following table:

<u>Titration (points of ml)</u>	<u>Concentration (litres per 1,000 litre)</u>
3.2	15.0
4.0	12.5
5.0	10.0
6.6	7.5
9.0	5.0

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

This step may not be required because sometimes painting parts still wet from the water rinse can give satisfactory results. The specific paint used and the quality required of the painted part will determine if an air blowoff or oven drying is needed.

If the dryoff unit is omitted, sufficient drain time should be allowed to prevent excessive drag-in of water into the finish.

10. STORAGE REQUIREMENTS

Parcolene 80A may precipitate if stored at temperatures below 4°C or above 40°C. The product must be stored between 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 of **Parcolene 80A** chemical, **Parcolene 80B** chemical, **Parcolene 6** chemical and **Parco Primer 40** chemical 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.

DISCLAIMER

Any information given is, to the best of our knowledge, the best currently available, with respect to our products and their use, but it subject to revision as additional knowledge and experience is gained. Such information is offered as a guideline for experimentation only and is not to be construed as a representation that the material is suitable for any particular purpose or use. Customers are encouraged to make their own enquiries as to the material's characteristics and, where appropriate, to conduct their own tests in the specific context of the material's intended use. This information is not a license to operate under nor is it intended to suggest infringement of any patent. We guarantee a uniform quality standard for this product. The only conditions and warranties accepted by Henkel in relation to this product or process are those implied by either Commonwealth or State statutes.