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⑤④ **Method for zinc-phosphating metal surface to be treated by the cationic electrodeposition coating.**

⑤⑦ By using a zinc-phosphating solution, which does not contain a nickel ion, but contains 0.1 to 4 g/l of a cobalt ion, 0.1 to 3 g/l of a manganese ion, a phosphating accelerator, 200 to 500 mg/l of a simple fluoride compound in terms of HF concentration and a complex fluoride compound in a mole ratio of 0.01 to 0.5 relative to the simple fluoride compound, a zinc phosphate coating film suitable for cationic electrodeposition coating and superior in coating film adhesiveness and corrosion resistance, especially in warm brine resistance and scab resistance, is formed on the metal surface simultaneously having an iron-based, a zinc-based and an aluminum-based surface by using an identical solution.

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EUROPEAN SEARCH REPORT

Application Number
EP 93 30 2582

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	US-A-4 717 431 (KNASTER ET AL.) * the whole document *	1-5	C23C22/36
X	EP-A-0 219 779 (GERHARD COLLARDIN GMBH) * claims; example 1 *	1,2	
Y	EP-A-0 434 358 (NIPPON PAINT COMPANY, LTD.) * the whole document *	1-11	
Y	FR-A-2 449 135 (NIPPON PAINT COMPANY, LTD.) * page 5, line 25 - line 34 * * examples 4-6 *	1-11	
A	EP-A-0 459 541 (METALLGESELLSCHAFT AKTIENGESELLSCHAFT ; SOCIÉTÉ CONTINENTALE PARKER) * page 2, line 1 - page 4, line 19 *	1-3,10, 11	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			C23C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 January 1994	Examiner Kaumann, E
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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