

**AQUEOUS LUBRICANT AND SURFACE CONDITIONER FOR  
FORMED METAL SURFACES**

**ABSTRACT**

5 A lubricant and surface conditioner for formed metal surfaces, particularly  
aluminum and tin beverage containers, reduces the coefficient of static friction of  
said metal surfaces and enables drying said metal surfaces at a lower temperature.  
The conditioner includes (i) a water-soluble organic material selected from amine  
oxides and quaternary ammonium salts, ethoxylated castor oil derivatives, and  
imidazoline moiety-containing phosphonates and preferably also includes (ii) at least  
10 one of fluozirconate, fluohafnate, or fluotitanate ion, and (iii) phosphate and/or  
nitrate ions. Good resistance to damaging the friction reducing effect by overheating  
and to staining of the domes of treated containers during pasteurization can be  
achieved.

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