

PROACT CROSSTALK



An Environmental Resource sponsored by HQ Air Force Center for Environmental Excellence

P2 Initiatives



From Alodine to PreKote: A P2 Success Story

In October of 2001, the Mississippi Department of Environmental Quality (MDEQ) informed Columbus AFB that it would have to apply for a pretreatment permit for its new Corrosion Control facility because the base used alodine to prepare its T-1A aircraft for painting. Alodine contains chromic acid, and the US EPA considers its use a type of “coating” operation under 40 CFR 433, Metal Finishing Point Source Category (i.e., pretreatment standards for metal finishing operations). Columbus AFB’s Environmental Compliance Team assessed its use of alodine and decided to pursue a pollution prevention (P2) solution.

Columbus AFB began using PreKote (previously known as X-IT PreKote) on its T-37 and T-38 aircraft in 1998 as a P2 initiative test. Although the testing had been successful at Columbus AFB and at other installations, PreKote could not be used on any aircraft except under testing conditions until the technical orders (TOs), which specify how each type of aircraft is maintained, were modified.

PreKote differs from alodine in several ways:

- It does not contain any metals or acids;
- It is non-toxic, biodegradable, non-hazardous; and
- Its use does not generate any hazardous waste.

In Edition 104 . . .

<i>BMP Update</i>	3
<i>Regulatory Alerts</i>	4
<i>Conference Corner</i>	4
<i>Technical Inquiry Roundup</i>	5
<i>In Our Customer's Own Words</i>	11

Although using PreKote instead of alodine was determined to provide a significant cost savings (Table 1) in addition to the benefits listed above, the Air Force’s primary concern was that PreKote, unlike other corrosion control systems, does not directly provide corrosion protection to the aircraft. Instead, PreKote provides corrosion protection to the aircraft by creating a better adhesive bond between the paint and the aircraft’s metal skin (Figure 1). Since aircraft testing results demonstrate PreKote sufficiently protects painted aircraft from corrosion, Columbus AFB’s Compliance Team lobbied HQ AETC to have the appropriate TOs modified to allow PreKote to be used as an alternative to alodine. By 20 December 2002, the Air Force had approved PreKote use for the T-1A, T-37, and T-38 aircraft.

	PreKote		Alodine	
	Cost	Man-Hours	Cost	Man-Hours
T-37	\$338.08	8	\$700.06	12
T-38	\$349.39	8	\$782.15	14
T-1A	\$405.94	8	\$827.20	14

Table 1: Cost Analysis of PreKote vs. Alodine (DynCorp)

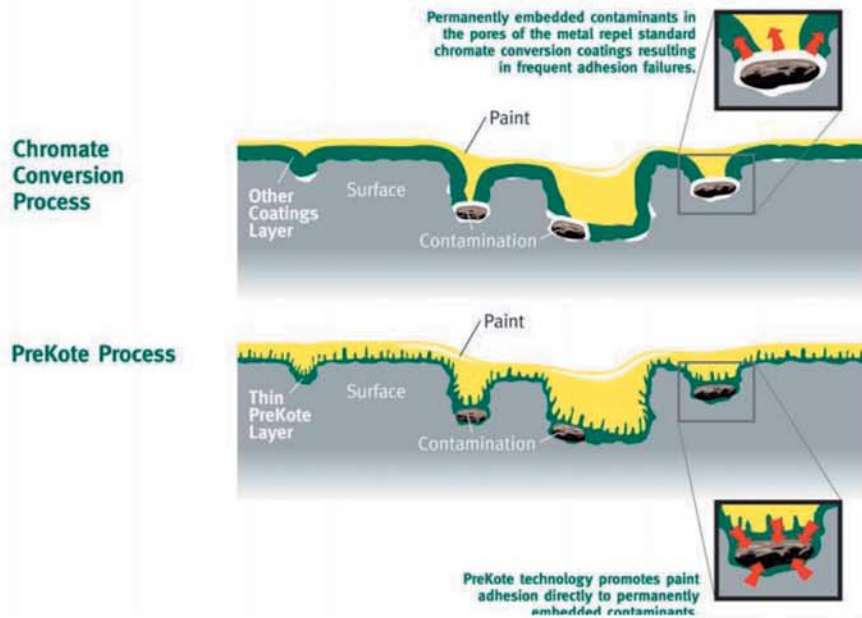


Figure 1: Chromate Conversion Process vs. PreKote Process (Pantheon Chemical)

The final step in the process was to confirm that PreKote use would not lead to the same compliance burden as alodine. On 29 January 2003, Columbus AFB met with its P2 Partners (MDEQ and EPA Region 4), HQ AETC/CEVQ (Dennis Kirsch), and the Atlanta Regional Environmental Office (REO) to discuss the issue. After confirming that PreKote was not an etchant, US EPA issued its decision on 1 April 2003 that PreKote does not trigger Categorical Industrial User (CUI) status under 40 CFR 433. MDEQ followed up EPA's decision by sending Columbus AFB a letter on 16 April 2003 specifying that the base no longer needed to obtain a pretreatment permit. Columbus AFB now uses PreKote instead of alodine on all of its aircraft, a compliance/P2 success.