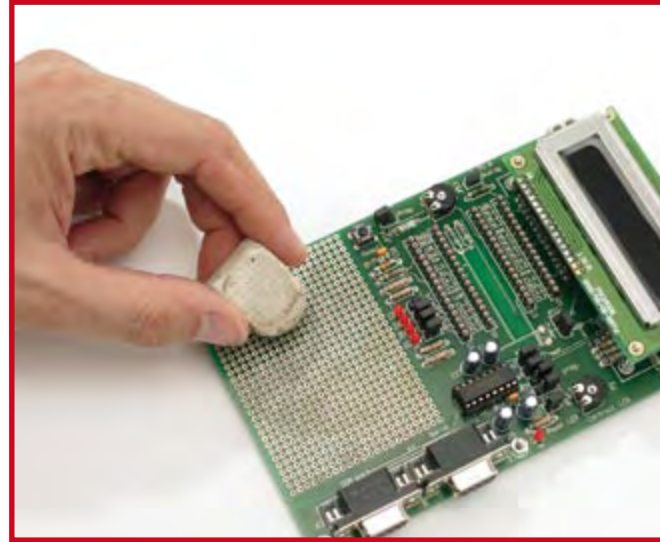


Pencil rubber cleans solder pads

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Just in case you didn't know, from 1 July 2006 all new electronics equipment has to be RoHS-compliant. One of the implications of the new rules is that solder tin containing lead may no longer be used in newly produced equipment. Interestingly, exceptions are made for automotive electronics, medical and military equipment. Currently there are some doubts regarding the mechanical durability of the substances used to replace the lead/tin alloy we've been using for decades to solder our circuits. The use of lead/tin solder is also still allowed for repair work on older equipment. Consequently it will take a while before the 'old' type of solder tin has disappeared from electronics in general.

Browsing the soldering and soldering tools section of just about any catalogue from a major electronics supplier, you'll soon be at a loss at what solder tin to choose, the choice of alloys and compounds being confusing to say the least. Still, 90% of all varieties have one thing in com-



mon: the lead component has been replaced by silver. Only the tin/silver ratio varies. In most cases, another metal has been added to optimise the chemical and thermal characteristics. Also, differences exist in the flux type and the amount of it added to the solder tin.

Pre-tinned Elektor Electronics printed circuit boards, too, had to undergo a change in the pro-

duction process. Since a few months, our board suppliers apply chemical silver to cover copper surfaces and so comply with RoHs. It took us some getting used to when the first boards started to arrive in our lab — to us, it seemed as if the white component overlay was covering the solder pads! Still, the boards turned out to be perfectly solderable.

Now, silver has a nasty habit if oxidising quickly. Just as table silver, our boards seem to turn black and dull after a while, especially if touched by fingers. It is therefore recommended to use airtight packaging for circuit boards when in storage or transit. After all, solder tin will not flow very well on silver oxide.

If a circuit board shows black smudges, problems in soldering may be prevented by solving the silver oxide traces with a soft piece of pencil rubber, which some of you may remember from the days when a pencil was used to make notes and drawings. The silver-oxide spots and areas will disappear remarkably quickly and soldering will be a breeze afterwards. If you solder immediately after applying the pencil rubber, the problems are solved for good. So far, we have not observed significant oxidising in joints made using the latest silver/tin based solder, so 'polishing the silver' is unlikely to become a recurrent subject in this magazine.