

# Transparent 'DNA' adhesives help police nab thieves

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Image credit: SelectaDNA

(PhysOrg.com) -- Two British companies have worked out a way of helping dealers such as scrap and pawn dealers identify that objects brought to them have been stolen, and from whom, so they can then inform the police. The methods can also be used to mark valuable personal property to deter thieves.

The world shortage of some metals means that there is a growing incidence in theft of objects such as electrical cabling, telephone lines,

manhole covers, traffic lights, and industrial piping. In the West Midlands in the UK for example around 1,500 trains were delayed or cancelled in an 18 month period because of thefts of signaling cables from the railways. British Transport Police spokesman Paul Crowther describes the theft of metal as the second greatest threat to infrastructure in Britain, after terrorism.

Two UK firms, [Selectamark Security Systems Ltd](#) and [SmartWater Technology Ltd](#), have developed different invisible marking systems to tackle the problem and help individuals and companies of all sizes protect their property from theft.

Selectamark Security Systems Ltd has developed a transparent [adhesive](#), SelectaDNA, which can be painted onto objects that are a potential target for thieves, and which is virtually impossible to remove. The adhesive includes tiny microdots embedded in a nickel alloy or in polyester. The adhesive is invisible in normal light but glows in [ultraviolet light](#) and the codes and company phone number imprinted on the microdots can be read under a microscope.

For further security, the substrate includes short stretches of synthetic DNA, which are unique to the particular batch of adhesive. The DNA codes are stored, along with customer details, on the Selectamark database, so even a tiny sample of the adhesive can be used to identify the owner of the object. The adhesive is supplied with warning signs to deter theft.

SmartWater Technology's system is a similar transparent adhesive, with celluloid microdots imprinted with a code identifying the owner of the metal, and SmartWater Technology's phone number. The microdots can be read under a microscope, and SmartWater can then determine if the goods have been stolen or are being sold legitimately.

The adhesive is almost impossible to be cleaned off but could be burned off, so SmartWater has added a unique mix of dozens of compounds of rare earth metals, which it refers to as a “[synthetic DNA](#),” that can survive fire and attempts at removal. If police or a dealer suspect the object has been stolen, it can be examined at the SmartWater laboratory, which can identify the owner of the object.

Both SmartWater and Selectamark also sell spray can kits that can be installed near valuables or over doors. They are either triggered by motion sensors or a button pressed by a sales assistant and spray a mist onto the thieves. The spray gets into pores and creases in the skin and is impossible to remove for days and allows the police to identify the person as the thief.

The two companies allude to the use of DNA, and they hope this in itself helps to deter thieves, who are familiar through films and TV with DNA being used to catch criminals. Head of sales with Selectamark, Jason Brown, calls this the “DNA fear factor,” and [police](#) agree, pointing out that just posting DNA warnings causes crime rates to drop.

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