

How safe are our tattoos and permanent makeup?

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Tattoos are becoming ever more popular. In the EU, the number of people with tattoos has increased from 5% in 2003 to 12% in 2016 (60 million people in the EU-28), with at least half of them having more than one tattoo. A new JRC report explores the safety and regulation of the inks used for tattoos and permanent makeup.

Particularly popular among young people, 30% of 16-34 year olds in the EU have tattoos. In the US, 40% of the same age population have at least one tattoo. Tattoos are created by injecting coloured inks into the skin and are intended to be permanent, thus resulting in long term exposure to the chemicals injected and, possibly, to their degradation products.

There is currently no specific EU legislation on tattoos or permanent makeup products ((semi)permanent tattoos used to resemble make-up). They fall, like any other consumer products, under Directive 2001/95/EC on General Product Safety (GPSD) requiring that only safe products may be placed on the market.

While most tattoo inks on the EU market are imported from the US, permanent makeup inks are generally manufactured in Europe. They all contain a combination of several ingredients and more than 100 different colorants and 100 additives are currently in use. The pigments used are not specifically produced for tattoo and permanent makeup applications, and generally contain impurities. Over 80% of the colorants in use are organic chemicals and more than 60% of them are a certain type of pigments, known as azo-pigments, some of which can release

carcinogenic aromatic amines. This can be the result of a degradation process in the skin, particularly under solar/ultra violet radiation exposure or laser irradiation.

There is no systematic data gathering for adverse effects on human health, so the actual prevalence of tattoo complications (mainly of dermatological nature) is not well known. Most complaints are transient and inherent to the wound healing process. However, bacterial infections may happen in up to 5% of people with tattoos, especially when the tattooing was carried out in unhygienic settings. Adverse health effects linked to the application but also increasingly to the removal of tattoos are reported. The risk of (skin) cancer from tattoo procedures has been neither proved nor excluded.

Measures that could contribute to enhancing the safety of tattoos would be Good Manufacturing Practices for manufacturing tattoo/permanent makeup inks, guidelines for their risk assessment, as well as harmonised analytical methods and information campaigns on risks for both tattooists and potential clients.

The JRC study, carried out on behalf of the Commission's Directorate-General Justice and Consumers, aims to provide the scientific evidence needed to decide if EU measures are necessary to ensure the safety of inks and processes used in [tattoos](#) and (semi)permanent makeup.

The findings of this JRC report, as well as two previous reports, on trends in tattoo practices and on legislative framework and analytical methods, will be used by the European Chemicals Agency (ECHA) to prepare a possible restriction proposal in the framework of the REACH regulation following a request from the European Commission. REACH refers to 'Registration, Evaluation, Authorisation and Restriction of Chemicals' and is a EU Regulation, adopted to improve the protection of human health and the environment from the risks that can be posed by

chemicals, while enhancing the competitiveness of the EU chemicals industry.

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