



**ROAD SAFETY
MARKINGS
ASSOCIATION**

CONTACT

PHONE:
+44 (0)1427 610101

WEBSITE:
www.rsma.co.uk

EMAIL:
info@rsma.co.uk

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SYNTHETIC POLYMER PARTICLES IN ROAD SAFETY MARKING MATERIALS

The RSMA acknowledges that Road Safety Marking Materials do not contain any intentionally added synthetic polymer particles (microplastics).

The predominant road safety marking material used in the United Kingdom is commonly referred to as hot-melt or hot-applied. The older term thermoplastic is misleading as these materials are derived from substances that exhibit plastic-like characteristics, i.e. can be heated and reformed. The term is NOT derived from the product's constituent elements, and it is INCORRECT to consider it a 'plastic' and a contributor to microplastic pollution.

Plastics are, in general, substances comprising of repeating units of carbon. A hot-applied road safety marking, however, is a specialist coating of adhesive modified by a hot-melt resin and mineral extenders. Most of the hot-applied road safety markings are made up of natural aggregates and glass beads, which are often recycled materials and harmless to the environment. The resins used in hot-applied road safety markings can also be derived from renewable resources and **should not** be considered a source of microplastics.

Road markings are often listed amongst important microplastic pollution sources, but there is no consensus related to the quantity of such emissions, with estimates varying by more than order of magnitude. Reports of positive identification remain very sparse. *(Tomasz E. Burghardt, Anton Pashkevich)¹*

Research into particles emanating from road safety markings undertaken in Europe has found that the amount of material in highway run-off is significantly less than claimed in previous studies.

It is important to note that hot-applied road safety markings are designed to wear. As they do, layers of glass beads throughout the marking are exposed to provide retroreflectivity which is paramount to the safety of road users. The layers of glass beads also protect road safety markings from abrasion.

Effective maintenance schedules ensure that when the road marking is renewed with a fresh layer of material and glass beads, it occurs prior to the abrasion of the underlying material. Studies indicate that any amount released into the local environment is insignificant when compared to asphalt, tyre and brake wear.

Rob Shearing
CEO
Road Safety Markings Association.

¹ Road markings and microplastics – A critical literature review, Tomasz E. Burghardt, Anton Pashkevich. <https://www.sciencedirect.com/science/article/abs/pii/S1361920923001372>