

# Medium Chain Chlorinated Paraffins Consultation

15<sup>th</sup> March 2021

# Contents

BPF Introduction	3
What are MCCPs used for?	3
MCCPs and POPs Criteria	7
Conclusion	8

## Medium Chain Chlorinated Paraffins Consultation – Executive Summary

## Section 1

### BPF Introduction

Established in 1933 the British Plastics Federation (BPF) is recognised as the single voice of the UK plastic industry with over 500 members across the plastics industry supply chain, including polymer producers and suppliers, additive manufacturers, recyclers, services providers, end users, plastics processors and machinery manufacturers, representing over 80% of the industry by turnover.

The BPF supports the Government's overall objective of seeking a better environment free of Persistent Organic Pollutants (POPs). However, having reviewed the MCCP uses and the basis for this consultation, it is clear that the lack of scientific evidence states otherwise. We believe that this would be better addressed via national legislations.

## Section 2

### What are MCCP's used for?

MCCPs are extensively utilised in flexible PVC, commonly used for EEE cable sheathing and insulation. The lower volatility of higher chlorination MCCP analogues is compatible with PVC. It was estimated in 2015 that 9,200 tonnes/year of MCCP is used for cable products. Use of MCCPs in other plastics is primarily as a flame retardant additive (70-72% wt. chlorination).

- |   |  |
|---|--|
| 8b. MCCPs (or chloroalkanes, C <sub>14</sub> -C <sub>17</sub> ) | <ul style="list-style-type: none"><li>– Used as substitute for SCCP</li><li>– Used as greasing agent in leather finishing</li><li>– Used in metalworking fluids (both water- and oil-based) in treatment and coating of metals</li><li>– Used as plasticiser and flame retardant in paints (used, e.g., in road marking and as primer for surfaces exposed to sea water), varnishes and coatings</li><li>– Used as plasticiser and flame retardant in rubber products such as gaskets and in glues which have been used, e.g., in construction sector and car industry</li><li>– Used in some carbon copy paper types</li><li>– Used as plasticiser and flame retardant in PVC plastic and further use in manufacture of plastic product</li></ul> |
|---|--|

Figure 1 – listing some of the MCCP applications.

Source: J. de Boer (ed.), Chlorinated Paraffins, Hdb Env Chem (2010) 10: 1–40, DOI 10.1007/698\_2010\_58, #Springer-Verlag Berlin Heidelberg 2010, Published online: 14 April 2010

There has been a life cycle assessment study conducted by the University of Manchester that shows that when MCCPs are added to PVC formulations they lower the carbon footprint of the formulation (as the MCCPs have a smaller carbon footprint than PVC and phthalate plasticisers).

Whilst there are alternatives to MCCPs, their use can potentially lead to lower fire performance affecting the applicability of the product. Furthermore, the alternatives may have an effect on the carbon footprint and the recyclability of products, however, we do not have data to confirm.

## **MCCPs and Cable Recycling**

The UK is a significant innovator in the circular economy with global leading companies in the field of recycling PVC. This provides a large number of direct and indirect jobs in the UK, including development of world leading R&D and technically advanced domestic manufacturing. The UK's leading PVC recyclers operate to support both the UK's industrial activities in a number of sectors, but also contribute to significant global exports (most significantly into Europe and the USA).

Within the UK, recycling PVC is a significant industry providing valuable products to a wide range of industries.



Traffic cone bases are produced from recycled PVC, providing a traffic & environmental wind resistant, easily deployable traffic management tool.

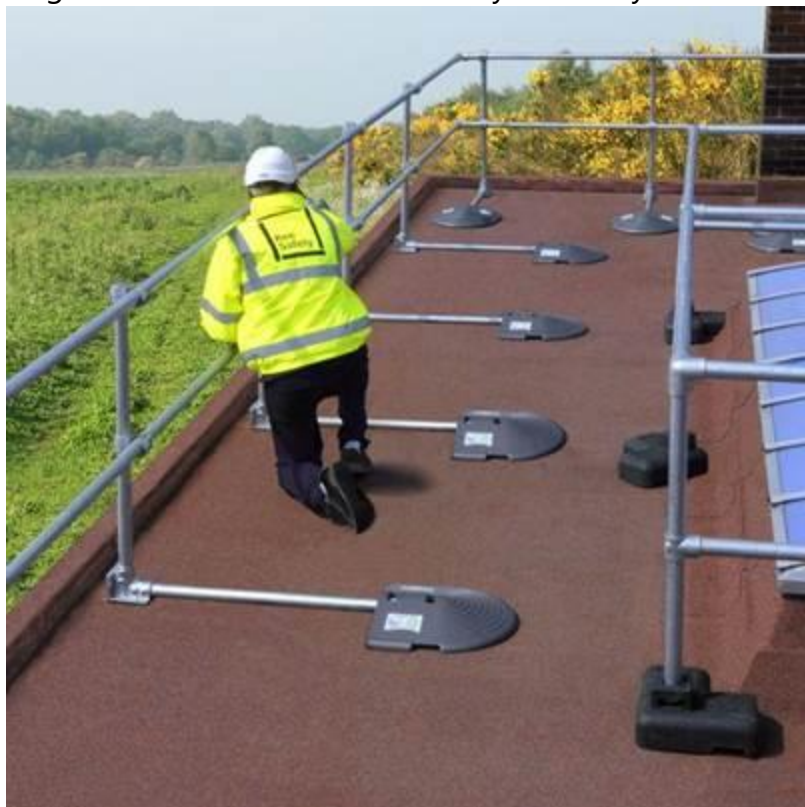


Roadside barriers, where recycled PVC feet allow wind-resistant barriers to safely segregate pedestrians from traffic flows. This presents both a core safety feature of any roadwork environment, with additional benefits in terms of easy deployment and reduced risks compared to virgin metal barriers





Specialist safety equipment, such as roof safety - where the precision moulding of a recycled PVC weight allows users to retrofit safety barrier systems to roofs.



Rail-side plastic barriers: within the rail industry, it is especially important to have non-metallic barriers for safety reasons. These also have a wide range of applications in general construction and site segregation:



If all end-of-life PVC were destined for destruction only, these products would be replaced within the market by either concrete blocks, or virgin plastics.

- Concrete presents significant ecological costs due to the high carbon manufacturing process.
- The brittle nature of concrete means that it is better suited to large blocks, meaning the application of concrete into e.g. a traffic safety environment would require additional equipment
- Small parts are difficult to mould and manoeuvre in concrete, so typical manual handling of blocks will increase up to 50kg per block, rather than stacking 3x

smaller blocks (as is typical with recycled PVC)

- Virgin plastics can replace many of the applications for recycled PVC, but this has both cost and environmental detriments.

The destruction of all PVC would therefore have a direct impact on UK employment and business activity, a wide-reaching impact on the users of recycled PVC in industrial applications, and a net-detrimental effect on the environment and human health.

We currently have capacity to recycle 50,000 tonnes of cable waste per year from cable sheathing. If MCCPs are included in the POPs list, it could cause a huge number of job losses within the plastics industry. MCCPs do not currently pose an issue to cable recycling

If MCCPs are considered a POP it will mean that this material can no longer be recycled and must be destroyed. There are reasons this would be a disaster not only for the manufacturers using the PVC, but for the wider supply chain:

- The PVC would need to be destroyed, i.e. incinerated. Incineration for PVC is not ideal as it releases HCl and most incinerators have very low tolerance on chlorine. This means it will either be impossible or hugely expensive to dispose of
- Legitimate, regulated cable recyclers will have a huge burden of disposal costs. Because the copper in the cable is so valuable, it could force cable down an unregulated route through illegitimate recyclers who have no regard for the environment
- The supply of products critical to traffic management and construction will dry up, delaying critical infrastructure projects
- Products will either be imported (which may themselves use recycled content from unknown sources) or will go back to using concrete
- UK manufacturing using PVC cable will be irreversibly damaged, leading to the closure of businesses and the loss of hundreds of jobs

## Section 3

### MCCPs and POPs Criteria

Following a review of bioaccumulation that was recently carried out on behalf of REACH registrants using a Bioaccumulation Assessment Tool (BAT), it concluded that the majority of evidence showed that MCCPs were not bio accumulative in aquatic environments.

Additionally, recent REACH CoRAP assessments confirmed the Chemical Safety Report conclusion that safe use was demonstrated for each application.

At the end of 2019 in a REACH substance evaluation, the UK also highlighted that use of MCCPs in the UK and EU showed that the risks were controlled.

Finally, we wish to highlight that MCCPs are poorly soluble in water and are not volatile, with an ability to readily biodegrade and therefore not bioaccumulate and/or travel far in waterways.

## Section 4

### Conclusion

In conclusion, we believe that MCCPs do not meet the threshold for the POPs criteria. Furthermore, their use is controlled within the UK and Europe and there is a well-established recycling sector for PVC cable sheathing in general. An addition to the POPs regulation list would harm the circularity of cable sheathing by limiting the ability to recycle it. The US Environmental Protection Agency also concluded in 2019 that MCCPs (as well as LCCPs) do not pose a risk of injury to health or the environment in their current applications. We have highlighted the socio-economic benefits from a product efficacy aspect (e.g. the fire retardant properties it lends to products that could be used in building, defence, automotive & aerospace sectors) to the job creation from recycling cable sheathing at its end of life. We hope DEFRA will consider these points and the evidence supplied by those utilising MCCPs, and we are happy to provide further information where possible.

Adding MCCPs as a POP will have a hugely negative impact on the circular economy, and the burden of disposing of flexible PVC will be huge in terms of CO2 emissions. We believe MCCPs should be regulated through national legislations e.g., UK REACH.





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