

# **Consultation on Restricting the Marketing and Use of Short Chain Chlorinated Paraffins (SCCPs) in Scotland**

September 2003  
Paper 2003/22

Scottish Executive Environment Group

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Use of Short Chain Chlorinated Paraffins  
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## EXECUTIVE SUMMARY

This consultation paper addresses how the Scottish Executive intends to introduce controls on marketing and use of Short Chain Chlorinated Paraffins (SCCPs) in Scotland. The consultation is aimed at manufacturers and users of SCCPs, as well as organisations and individuals who have an interest in affected industries or environmental protection.

The consultation paper explains the rationale for introducing controls on SCCPs and the proposed method of implementing such controls through regulations. It also includes a draft regulatory impact assessment (RIA) that sets out the Executive's view of the impact of these regulations on business. The consultation paper invites comments on the draft regulations at Annex I and draft RIA at Annex III.

The purpose of the proposed regulations is to enhance protection for the environment, by restricting the marketing and use of a group of chemicals that has been shown to create unacceptable risks when used in certain applications.

European Commission Directive 2002/45/EC<sup>1</sup> requires Member States to introduce controls on SCCPs in metalworking fluids and leather finishing. The controls must come into effect by 6 January 2004 at the latest. As the purpose of the controls is to enhance protection for the environment, the responsibility for transposing the Directive in Scotland falls to the Scottish Ministers. The Executive proposes that this be done by means of the Regulations which are attached at Annex I. The regulations will be made under section 2(2) of the European Communities Act 1972.

This consultation paper and the proposed regulations cover Scotland only. The Department for Environment Food and Rural Affairs (Defra) and the Department for the Environment of Northern Ireland will be conducting separate consultations in their regions and will be introducing their own Regulations to transpose the Directive.

Responses to this consultation paper should be sent by **1 December 2003** to:

Bob Cuthbertson  
SEPA Sponsorship and Waste Unit  
Area 1-J (N)  
Scottish Executive  
Victoria Quay  
Edinburgh EH6 6QQ

e-mail: **[SEPATeam@scotland.gsi.gov.uk](mailto:SEPATeam@scotland.gsi.gov.uk)**

Tel: 0131 244 0236

Fax: 0131 244 0245

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<sup>1</sup> The text of the directive can be found at [http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l\\_177/l\\_17720020706en00210022.pdf](http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l_177/l_17720020706en00210022.pdf)

Consultees should note that it may not be possible to consider responses which arrive after the deadline. The Scottish Executive may wish to publish responses to this consultation in due course or to deposit them in their libraries where they will be available for public examination. If this is done, all responses received will be so published or deposited, unless a respondent specifically asks for his or her response to be treated as confidential. Confidential responses will, nevertheless, be included in any statistical summary of comments received or views expressed.

Following the completion of the consultation exercise, responses will be analysed and policy options assessed before Regulations are laid in the Scottish Parliament. It is the Executive's intention to make the regulations as soon as possible after the end of the consultation period.

## **Chapter 1: Background**

- 1.1 The UK took responsibility under the European Community Existing Substances Regulation (ESR) (EEC 793/93) to assess the risks associated with the use of SCCPs. On the basis of the UK assessment, Member State technical experts agreed that the use of SCCPs in metal working and leather processing posed a risk to the aquatic environment. No significant risks to human health were identified. The UK commissioned Risk and Policy Analysts Ltd to prepare a risk reduction strategy to address the issues raised in the risk assessment.
  
- 1.2 The UK risk reduction strategy formed the basis for a European Commission proposal to harmonise controls on SCCPs across the European Union under the Marketing and Use Directive (76/769/EEC). European Commission Directive 2002/45/EC was adopted in June 2002. It requires Member States to introduce controls on SCCPs in metalworking fluids and leather finishing. The controls must come into effect by 6 January 2004 at the latest.

## **Chapter 2: Approach to Introducing Controls on SCCPs**

- 2.1 A number of options were examined for introducing controls on SCCPs to reduce risks to the environment. This included consideration of voluntary controls and other methods that would have the effect of reducing the impact of SCCPs on the environment. However, the effective operation of the single market in Europe requires that controls on marketing and use of products be harmonised as far as possible. The UK therefore supported the European Commission in proposing a directive that would harmonise controls on SCCPs under the Marketing and Use Directive (76/769/EC).
- 2.2 EC Directives require that Member States transpose applicable requirements into national law within a set period. The Executive proposes that this be done for Directive 2002/45/EC by Regulations made under section 2(2) of the European Communities Act 1972.
- 2.3 In 1995, the Oslo and Paris Commission (OSPAR) issued Decision 95/1 aimed at phasing out the use of SCCPs as a plasticiser in paints and coatings; as a plasticiser in sealants; in metalworking fluids; and as a flame retardant in rubber, plastics and textiles. The UK maintained a reserve on Decision 95/1. The Executive has given careful consideration to including restrictions on additional applications in the proposed Regulations. However, it is noted that OSPAR 95/1 was considered in drawing up the EC Directive (2002/45/EC) that requires controls on SCCPs to be introduced. The approach agreed at EU level was to commission a review of all remaining uses of SCCPs with a view to deciding at a later date whether further compulsory restrictions are required. The Executive believes that introducing further compulsory restrictions on a unilateral basis at this stage could cut across the single market approach currently being pursued. The regulations will therefore be limited to restricting the marketing and use of SCCPs in metalworking and leather finishing. The draft regulations are attached at Annex I.

**Do consultees have any comments on the approach to introducing controls on SCCPs or the draft regulations at Annex I?**

## **Chapter 3: Summary of Regulatory Impact Assessment (RIA)**

- 3.1 A partial Regulatory Impact Assessment (RIA) was commissioned by the UK Government to assess the impact of the EC proposals on business in the UK. This is attached at Annex III.
- 3.2 Risk benefit analysis (carried out by the UK Government on behalf of the EU) concluded that a ban on the use of SCCPs in all metal working fluids is expected to impact on 26,000 establishments in the UK which may incur additional annual costs of approximately £4m from increased fluid prices – although some of this may be absorbed by the formulators – but spread across a very diverse industry. The impacts on the leather industry will be minor. In the UK only one tanner using SCCPs has been identified and the economic impacts of a ban will be less than £2,000 across the industry as a whole.
- 3.3 Since Directive 2002/45/EC was adopted, it is believed the metalworking sector has continued to move away from using SCCPs. Our conclusion is therefore that the costs of a ban in metalworking may be significantly lower than the RIA estimate of approximately £4m for the UK. One factor that may confound this assumption is if metalworking companies have chosen to use Medium Chain Chlorinated Paraffins (MCCPs) as a substitute for SCCPs. MCCPs are also being considered for risk reduction action at EU level and have been identified as chemicals of concern by the UK Chemical Stakeholder Forum. Although there is currently no compulsory requirement to move away from the use of MCCPs, businesses may incur additional costs by moving to chlorine-free solvents as a voluntary measure or in anticipation of possible statutory restrictions on MCCPs.
- 3.4 The RIA looks at impacts on a UK basis. The Executive does not believe there is a significant variation in the pattern of use of SCCPs across the UK. The costs of introducing restrictions in Scotland are therefore likely to be a fraction of those for the UK as a whole. If it is assumed that the Scottish metalworking industry accounts for approximately 10% of the UK industry, this means the industry in Scotland may incur additional annual costs of up to £400,000 from increased fluid prices. Impacts on the leather industry in Scotland will be negligible, as they are for the UK industry as a whole.

**Do consultees have any comments on the range of costs identified by the draft RIA?**

**Do consultees believe that the Executive's assumption that costs to the metalworking industry in Scotland will be approximately 10% of those for the UK as a whole is correct? If not, what do consultees believe would be a more accurate assessment of the regulatory impact in Scotland?**

## Annex I: Draft Regulations

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### SCOTTISH STATUTORY INSTRUMENTS

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2003 No.

#### ENVIRONMENTAL PROTECTION

The Environmental Protection (Controls on Short Chain Chlorinated Paraffins) (Scotland) Regulations 2003

<i>Made</i>	2003
<i>Laid before the Scottish Parliament</i>	2003
<i>Coming into force</i>	6th January 2004

The Scottish Ministers in exercise of the powers conferred by section 2(2) of the European Communities Act 1972<sup>(2)</sup>, and of all other powers enabling them in that behalf, hereby make the following Regulations:—

#### Citation, commencement and extent

1.—(1) These Regulations may be cited as the Environmental Protection (Controls on Short Chain Chlorinated Paraffins) (Scotland) Regulations 2003 and shall come into force on 6th January 2004.

(2) These Regulations extend to Scotland only.

#### Interpretation

2. Expressions used in these Regulations which are also used in Council Directive 76/769/EC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations<sup>(3)</sup>, as last amended by European Parliament and Council Directive 2002/45/EC<sup>(4)</sup> shall have the meaning they bear in that Directive.

#### Prohibition on the placing on the market of short chain chlorinated paraffins

3. No person shall place short chain chlorinated paraffins on the market for use as substances, or as constituents of other substances or preparations, in concentrations higher than 1% either in metalworking or for fat liquoring of leather.

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<sup>(2)</sup> 1972 c.68.

<sup>(3)</sup> O.J. No. L 262, 27.9.1976, p.201.

<sup>(4)</sup> O.J. No. L 177, 6.7.2002, p.21.

## Offences and penalties

4.—(1) Any person who contravenes regulation 3, or causes or permits another person to contravene that regulation, shall be guilty of an offence.

(2) Any person guilty of an offence under paragraph (1) shall be liable, on summary conviction, to a fine not exceeding level 5 on the standard scale and, on conviction on indictment, to a fine.

(3) Where an offence under regulation 3 committed by a body corporate is proved—

- (a) to have been committed with the consent or connivance of an officer, or
- (b) to be attributable to any neglect on that officer's part,

that officer as well as the body corporate shall be guilty of that offence and liable to be proceeded against and punished accordingly.

(4) In paragraph (3) “officer”, in relation to a body corporate, means a director, manager, secretary or other similar officer of the body, or a person purporting to act in any such capacity.

(5) If the affairs of a body corporate are managed by its members, paragraph (3) shall apply in relation to the acts or defaults of a member in connection with that member's functions of management as if the member was a director of the body corporate.

(6) Where an offence under regulation 3 committed by a partnership in Scotland is proved—

- (a) to have been committed with the consent or connivance of a partner, or
- (b) to be attributable to any neglect on that partner's part,

that partner as well as the partnership shall be guilty of that offence and liable to be proceeded against and punished accordingly.

(7) In paragraph (6) “partner” includes a person purporting to act as a partner.

St Andrew's House,  
Edinburgh  
2003

Authorised to sign by the Scottish Ministers

## **EXPLANATORY NOTE**

*(This note is not part of the Regulations)*

These Regulations, which extend to Scotland only, give effect to European Parliament and Council Directive 2002/45/EC which amended for the twentieth time Council Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations.

Regulation 3 prohibits the placing on the market from 6th January 2004 of short chain chlorinated paraffins in concentrations greater than 1% for use in metalworking or for fat liquoring of leather.

Regulation 4 makes it a criminal offence to contravene regulation 3 and specifies the penalties for such an offence.

## **Annex II: Consultation List**

Aluminium Federation Ltd.  
Aluminium Finishing Association  
Association of Bronze and Brass  
Association of Light Alloy Refiners Ltd  
Association of Metal Sprayers  
Association of UK Oil Independents  
British Castings Research and Trade Association  
British Coatings Federation  
British Chemical Distributors & Traders Association Ltd  
British Leather Confederation  
British Lubricates Federation  
British Non-Ferrous Metals Federation  
British Iron and Steel Producers Association  
British Plastics Federation  
British Secondary Metals Association  
Cast Metals Federation  
Boiler & Radiator Manufacturers Assoc. Ltd  
Mechanical & Metal Trades Confederation  
Royal Environmental Health Institute of Scotland (REHIS)  
Chemical Industries Association  
Chemical and Oil Recovery Association  
Confederation of British Industry (Scotland)  
Federation of Small Businesses  
Institute of Metal Finishing  
Institute of Waste Management  
Institute of Sheet Metal Engineering  
Metal Finishing Association  
Oil and Colour Chemists Association  
Scottish Chamber of Commerce  
Scottish Environmental Services Association  
Society of Chemical Industry  
United Kingdom Petroleum Industry Association  
Enviros Aspinwall Ltd  
BP Chemicals Ltd  
Nexfor Ltd  
Egger (Barony) Ltd  
Castrol UK Ltd  
Da Stuart Oil Co.Ltd  
Esso Petroleum Co.Ltd  
Mobil Oil Ltd  
Prof Colin Reid  
Professor of Environmental Law  
University of Dundee  
Association for Protection of Rural Scotland  
Going for Green (Scotland)  
Department of Environmental Health  
University of Strathclyde  
Director – Caledonian Environment Centre  
Glasgow Caledonian University  
Scottish Centre for Infection and Environmental Health (SCIEH)  
Scottish Natural Heritage  
Scottish Environment Protection Agency  
Friends of the Earth (Scotland)  
Greenpeace UK  
Scottish Environment Link  
WWF Scotland

## **Annex III: Regulatory Impact Assessment (RIA)**

### **Regulatory Impact Assessment for Controls on the Marketing and Use of Short Chain Length Chlorinated Paraffins (SCCPs)**

#### **1. Purpose and intended effect of the measure.**

##### Issue

To introduce Europe-wide restriction on the marketing and use of short chain chlorinated paraffins (SCCP) in metal working and leather finishing.

##### Objective

The Directive and proposed regulations are intended to protect the environment from SCCPs which have been shown to be toxic to the aquatic environment and are persistent and bioaccumulative.

##### Implementation

These proposed regulations will apply to Scotland only. England & Wales, and Northern Ireland will be introducing their own regulations, as will other member states in the EU.

#### **2. Options**

During the consideration of the need for risk reduction action for SCCPs at EU level, a number of options were assessed. Please see below the five options that were identified.

1. A Voluntary Agreement
2. Classification and Labelling
3. Marketing and Use Restrictions
4. The Limit Value Option
5. Do Nothing

**Option 1:** Due to the diversity of use of SCCPs a voluntary agreement was considered likely to result in a random and unpredictable removal of SCCPs from the marketplace and all uses would not be eliminated.

**Option 2:** The labelling of products which contain SCCPs as “Dangerous For The Environment”. This could lead to more responsible handling and disposal of the oils by industry. A preference for products which do not display ‘hazardous’ labelling may cause a switch away from the use of products which use SCCPs. However, no companies would stop manufacturing their product on the basis of labelling alone. Most larger companies would continue to use SCCPs and seek to take additional precautions, while most smaller companies would make no changes to their working practices.

**Option 3:** Restrictions on the marketing and/or use of SCCP based fluids in metal working and leather finishing under the EC Marketing and Use Directive 76/769/EEC. SCCPs would be totally or partially phased out and their concentration within some or all products restricted. Marketing and use restrictions based on a total phase out of SCCPs in metalworking and leatherworking would guarantee that the aquatic risks associated with their use and disposal are eliminated.

**Option 4:** Limit value on emissions. This option is aimed at directly limiting the discharge to water. The benefit would be to reduce emissions to the water environment to such a level that concentrations are below the lowest level of concern. However, there is no consensus on an appropriate level at which harm to the environment would be eliminated. The environmental impacts of this option would vary in accordance with varying discharge consents.

**Option 5:** Do nothing. This option has been discounted, as failure to transpose the Directive would result in legal action by the EC against the UK.

**The adoption of Directive 2002/45/EC means that the Executive is now pursuing measures in line with option 3. The remainder of the RIA concentrates on implementing this option.**

### **3. Benefits**

There is no international consensus on the valuation of environmental effects and it has therefore not been possible to quantify, in monetary terms, the increased environmental benefits of implementing risk reduction options to enable comparison with anticipated costs to users. In the case of SCCPs it can be clearly established that a failure to address the risk will result in local aquatic ecosystems being jeopardised. The risk assessment identified that SCCPs bioconcentrate to a large extent in fish and molluscs and low concentrations of SCCPs were found to significantly increase mortality rates in aquatic species. There are also some international concerns that they have the potential to be mobile in the environment and transport over a wide area from the source of release. If left unabated, wider populations would be at risk. The proposed restrictions on marketing and use of SCCPs in the metalworking and leather processing industries will contribute to a reduction in these environmental risks. The environmental benefits of substituting SCCPs with Medium Chain Chlorinated Paraffins (MCCPs) may be limited as they have also been identified as chemicals of concern. Most benefit is likely to be derived where substitution is by chlorine-free fluids with lower environmental risks.

### **4. Compliance costs for Business**

#### **i) Business Sectors affected**

- SCCP producers
- formulators/blenders
- agents/retailers
- customers or users (metalworking and leather finishing companies)

There are around 50,000 companies using metalworking fluids in the UK. This figure is based on a compliance cost assessment performed for the UK Government.

## **ii) Compliance costs for a typical business**

In terms of a “typical” metalworking company, the only reliable cost data with which to estimate the impacts of the proposed Regulation are those relating to increased fluid prices. In order to estimate the costs of the Marketing and Use restrictions to a typical company, it is assumed that:

- a typical metalworking company is medium sized;
- metalworking companies currently using neat oils will move to MCCP based neat oils in the short term;
- metalworking companies currently using emulsions will move to chlorine free emulsions; and
- a metalworking company will use either emulsions or neat oils.

On this basis, the cost to a medium sized user of neat oils is estimated at £1,500 per annum (estimated to be in the order of 0.2% of the annual turnover) while that to an emulsion user is estimated at £450 per annum. These figures are based on a compliance cost assessment prepared for the UK Government.

## **iii) Total Compliance Costs**

The risk benefit analysis concluded that a ban on the use of SCCPs in all metal working fluids is expected to impact on 26,000 facilities in the UK which may incur additional annual costs of approximately £4m from increased fluid prices - although some of this may be absorbed by the formulators - but spread across a very diverse industry. The impacts on the leather industry will be minor. Costs to producers, formulators and retailers are also expected to be negligible as metalworking businesses will pursue substitution, meaning that reduction in sales of SCCPs will be matched by growth in the use of safer alternatives. In the UK only one tanner using SCCPs has been identified and the economic impacts of a ban will probably be less than £2K across the UK industry as a whole.

## **5. Impact on Small Firms**

A significant proportion of small (and other sized) companies claimed not to know the make-up of the fluids they were using. In addition, no turnover figures were available relating to components produced using SCCP based or other fluids. The Compliance Cost Assessment that forms the basis for the figures used in this RIA is based on the findings from the companies questioned.

The estimated cost per business of £450 to £1500 is based on a medium sized enterprise. Small and micro businesses are considered unlikely to be using the most sophisticated metalworking processes where higher costs may be incurred.

## **6. Monitoring and Enforcement**

The new regulations make it an offence to place short chain chlorinated paraffins on the market for use as substances, or as constituents of other substances or preparations, in concentrations higher than 1% either in metalworking or for fat liquoring of leather.

The Executive is working with Defra to develop regulations that will set out the monitoring and enforcement responsibilities of various authorities in relation to the full range of marketing and use controls. This will not affect compliance costs.

## **7. Summary**

The attached table summarises the costs and benefits associated with introducing marketing and use controls, as measured against the baseline of a “do nothing” option.

In summary, the costs to UK industry have been estimated at approximately £4m. These costs are likely to have reduced since the RIA was conducted as businesses have taken action to phase out use of SCCPs in light of the forthcoming restrictions. The impact in Scotland is estimated to be proportionate to that in the rest of the UK – the cost of restrictions in Scotland is therefore estimated at approximately £400,000. The vast majority of costs will fall on the metalworking industry. The metalworking industry may incur higher costs to avoid using MCCPs as a substitute for SCCPs based on voluntary action or in anticipation of controls being introduced on this substance.

<b>Summary of Risks and Benefits of Marketing and Use Restrictions</b>		
<b>Effects</b>	<b>Benefits</b>	<b>Costs and Risks</b>
Producers and Formulators	<p>If SCCPs are banned, there will be benefits to those formulators which have already developed effective SCCP-free fluids.</p> <p>A total ban on SCCP-based cutting fluids may drive R&amp;D towards process modifications, whereby different tool materials may be used to render cutting fluids obsolete. This would benefit the companies involved in this R&amp;D as costs could be passed onto (ex-)cutting fluid users.</p>	<p>Formulators will be driven to find alternative products and will incur associated R&amp;D costs. The R&amp;D costs for MCCP-based fluids are less than those for chlorine-free products. Although there are problems with differences in the chlorination/viscosity relationship for SCCPs and MCCPs, on the whole re-formulation costs for MCCPs would be minor. Replacement with chlorine-free additives is more complex. No one compound can replace SCCPs and many more, process-specific cutting fluids will probably need to be developed. Each will require identification of the best base-oil and associated additives.</p> <p>Evidence suggests that the favoured alternative for neat oils is MCCPs, while those for emulsions are chlorine free additives, especially sulphur and phosphorus. Users of neat oils may choose to avoid substitution using MCCPs in support of voluntary action or in anticipation of possible future legislative controls. In the short term, costs to those specialising in emulsion concentrates may be greater than for other formulators. Companies with larger R&amp;D budgets and more flexible profit margins may be more able to provide suitable products. Thus, it may be the smaller, more specialised formulating companies which find the transition from SCCPs most costly.</p>
Purchasing Costs		<p>In moving to MCCP-based fluids an increase in fluid costs of around 5% could be expected (i.e. to around £1.85 per litre). Where chlorine-free fluids are available, purchase costs could</p>

		<p>be expected to increase by around £0.50 per litre (i.e. to around £2.25 per litre). It is estimated that around 25,000 UK metalworking companies would be affected by a total ban on the use of SCCPs.</p> <p>For a medium sized user of neat oils moving to MCCPs, increases in fluid price could cost around £1,500 per annum (of the order of 0.2% of annual turnover). The costs to the UK as a whole are estimated to be around £2 million per annum for a move to MCCPs in neat oils. Costs could double if only 20% of neat oils users moved to chlorine free fluids. For a medium sized user of emulsions moving to chlorine-free fluids, increases in fluid price could cost around £450 per annum (of the order of 0.05% of annual turnover). The costs to the UK as a whole are estimated to be around £2 million per annum for a move to chlorine-free EP additives in emulsions. UK costs for a ban on the use of SCCPs could be twice those for Germany and France together (for increased fluid costs alone).</p>
Disposal	A move to chlorine-free fluids (but not to MCCPs) could result in reductions in disposal costs.	Sulphur-based products are reported to be highly odoured and difficult to dispose of.
Use and Production Aspects	A total ban on the use of SCCPs in metalworking fluids may drive R&D into the development of new fluids, processes or tools which may reduce production costs in the longer term.	<p>Some replacements for SCCP-based products may be less efficacious. For MCCP-based fluids, this may be due to an inability to use highly chlorinated products (at 63% chlorination MCCPs become so solid as to be unusable).</p> <p>For processes where no efficacious products are available, costs to metalworkers will be associated with increased tooling management costs and reduced production.</p>

		<p>Management costs for tools at the top of the price range (e.g. broaching tools costing of the order of £5,000), are likely to be significant. For example, the costs of a 5% reduction in tool life are an order of magnitude higher than those associated with increased fluid costs (for all bar a move to chlorine-free neat oils where costs are three times greater). For emulsions, an across the board reduction in tool life of 5% could equal £2 million for the UK as a whole.</p> <p>The costs arising from reduced production could dwarf those associated with tool management. For example, one company undertaking drawing operations suffered reduced productivity of 75% in moving to a chlorine-free product. This resulted from forced reductions in metalworking speeds.</p> <p>The most severe processes, involving highly alloyed materials and requiring highly polished finishes could suffer most from a ban on the use of SCCPs. Where quality criteria cannot be met (in terms of surface smoothness for example), then business will be lost.</p> <p>Nine processes have been identified as having the potential to suffer greatly from a ban on the use of SCCPs: broaching, deep hole drilling and clearance, deformation, gear cutting, grinding processes, milling, reaming, rubbing and threadcutting.</p>
Aquatic Environment	Banning the use of SCCPs will remove the risks to the aquatic environment associated with the use of this substance. A ban on use in neat oils alone should result in greater benefits than a ban in the use of emulsions alone.	MCCPs are more prolific in the aquatic environment than SCCPs and the consequences of increasing the MCCP load are currently unknown.

	<p>MCCPs are less bioaccumulative than SCCPs but there is also concern about their properties and other alternatives are likely to offer more benefit for the environment.</p> <p>Most sulphur-based products identified as alternative EP agents are slightly less toxic than SCCPs. Thus, movement to these products could result in slight reductions in aquatic risk. However, due to potential costs, it is safest to say that there is no net benefit to the aquatic environment associated with the use of sulphur. Movement to phosphorus may either reduce or increase risks to the aquatic environment, depending on the receiving waters.</p>	<p>Some sulphur-based formulations appear to be more toxic than SCCPs. Movement to phosphorus may either reduce or increase risks to the aquatic environment, depending on the receiving waters.</p>
Human Health	<p>There is contention over whether SCCPs or MCCPs are better for human health.</p> <p>Where chlorine-free fluids are used, sulphur and phosphorus may reduce human health risks. Overall, however, the change in benefits associated with a move to sulphur and phosphorus are unclear.</p> <p>In addition, where a total ban on the use of SCCPs drives the development of new process technologies, exposure to fluids may reduce in the longer term.</p>	<p>Movement to MCCP-based fluids may result in increases in the degree of chlorination in order to maintain the lubricating qualities of the fluid (where such increases are possible). The concentration of the MCCP-based additive may also increase. These alterations may have the potential to increase the health risks to metalworkers although there is scientific uncertainty over which agents in cutting fluids cause health problems.</p> <p>Where chlorine-free fluids are used, sulphur and phosphorus may worsen human health risks. In addition, chlorine-free fluids may require additional biocides and other additives which may have the potential to increase incidents of dermatitis and/or mutagenic and carcinogenic risks.</p>

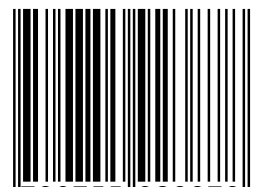


Small changes in the way we perform everyday tasks can have huge impacts on Scotland's environment.

Walking short distances rather than using the car, or being careful not to overfill the kettle are just two positive steps we can all take.

This butterfly represents the beauty and fragility of Scotland's environment. The motif will be utilised extensively by the Scottish Executive and its partners in their efforts to persuade people they can do a little to change a lot.

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