

# SCHER preliminary opinion on "The environmental risks and indirect health effects of mercury from dental amalgam (update)"

<b>YOUR IDENTITY</b>	
1. Do you write as an individual or on behalf of an organization? -single choice reply-( <b>compulsory</b> )	Organisation
If you write on behalf of an organisation, please specify the following: -single choice reply-( <b>compulsory</b> )	Business
2. Your name or the name of your organization: -open reply-( <b>optional</b> )	EUREAU
3. Your email address: -open reply-( <b>compulsory</b> )	carla.chiaretti@eureau.org
<p><b>Question 1: Are mercury releases caused by the use of dental amalgam a risk to the environment? The fate of mercury released from dental clinics as well as the fate of mercury released to air, water and soil from fillings placed in patients should be taken into account</b></p>	
4. YOUR COMMENTS: Do you agree with the observations made by the Scientific Committees? -single choice reply-( <b>compulsory</b> )	Disagree
Explain why: -single choice reply-( <b>compulsory</b> )	Other
Please specify -open reply-( <b>optional</b> )	
Disagreement with the interpretation of the existing scientific and other data AND Relevant scientific and other information missing from the analysis	
5. Please provide the evidence to improve the overall report (with complete references): -open reply-( <b>compulsory</b> )	
<p>1. Underestimated Hg releases from daily erosion of amalgam fillings in the teeth of the population to the wastewater treatment plants          The daily erosion of mercury from amalgam fillings are not estimated at all. The losses of Hg to the wastewaters of Stockholm from more than one million inhabitants due the daily erosion of existing amalgam dental fillings in teeth and related losses, is by far the main source of Hg to waste water treatment plants. The daily erosion from amalgam teeth is 60-80% of the total emission from dental care in Sweden. EUREAU is uncertain if this investigation has been done in other cities or member states, but nevertheless the investigation is most probably valid for many more European cities than Stockholm. More than 90% of mercury in the urban waste water in Stockholm originates from amalgam. Sources: Stockholm Water Company 2003. -Mercury Sources - an estimation from the Stockholm Water Company (2003) -Arch Environ Health. 2002 Jul-Aug;57(4):366-70. Mercury in saliva and the risk of exceeding limits for sewage in relation to exposure to amalgam fillings. Leistevuo J, Leistevuo T, Helenius H, Pyy L, Huovinen P, Tenovuo J. National Public Health Institute, Antimicrobial Research Laboratory, Turku, Finland. -Skare I. Mass Balance and Systemic Uptake of Mercury Released from Dental Amalgam Fillings. Water, Air Soil Pollut. 80(1-4):59-67 (1995) -Study on the potential for reducing mercury pollution from dental amalgam and batteries, Final report European Commission – DG ENV 11 July 2012, (figure 12, page 153, erosion of Hg from amalgam fillings) 2. Overestimated control technology reductions of dental mercury release pathways. From the European perspective, only 14 member states require installation of amalgam separators, according to BIOIS (p.158). Assumptions on percent of clinics and removal capability is overstated. The estimate that 75% of dental offices have installed, properly operate/maintain separators is highly questionable given range of uncertainties. For example, Member States' data in Annex H shows that in some cases amalgam separators are confused with chair side traps. Without maintenance, studies show that performance and effectiveness of separators is questionable. The amalgam separators are not maintained as expected (see ref Lagerkvist). Therefore, Hg releases are much greater to water from the use of dental amalgam than stated in the SCHER opinion. Extract from the opinion: "Based on future developments, especially in the</p>	

percentage separators, the concentration in surface water is expected to reduce by about a factor of 50.” An expected reduction of the Hg concentration in surface water “by about a factor of 50” after installation of more amalgam separators has no scientific evidence what so ever. Firstly, it is not possible to reduce the Hg content of surface waters to any larger degree with amalgam separators but rather the output of amalgam from dental clinics. Secondly, a factor 50 is an extremely large reduction, which could only be achieved by much more sophisticated methods than amalgam separators. Such a large reduction would demand filtering the surface water with micro pore filters or interventions to cause the Hg bond to colloids and organic matter to precipitate. Thirdly, SCHER do not at all consider that Hg precipitated in waste water tubes from historic uses of dental amalgam will act as a source of Hg slowly being released into the water with time due to bacterial activity and intermittent occasions of extreme flushing events in the waste water tubes, re-suspending settled Hg. Sources: - Lagerkvist, RAB. 2012. Stockholm Vatten, Sweden. Personal communication. 3. Underestimated average amount of mercury in people and Hg releases to air. Underestimates Hg releases from cremation. In light of the available evidence and research reports (2011 OSPAR report).The estimation is not a reasonable interpretation of available information

## Question 2: Is it scientifically justified to conclude that mercury in dental amalgam could cause serious effects on human health due to mercury releases into the environment?

6. YOUR COMMENTS: Do you agree with the observations made by the Scientific Committees? -single choice reply-(compulsory)	Uncertain
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7. Please provide the evidence to improve the overall report (with complete references) -open reply-(compulsory)

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## Question 3: Comparison of environmental risk from the use of mercury in dental amalgam and the use of alternatives without mercury

8. YOUR COMMENTS: Do you agree with the observations made by the Scientific Committees? -single choice reply-(compulsory)	Disagree
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Explain why: -single choice reply-(compulsory)	Other
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Please specify -open reply-(compulsory)

Disagreement with the interpretation of the existing scientific and other data AND Relevant scientific and other information missing from the analysis

9. Please provide the evidence with the overall report (with complete references) -open reply-(compulsory)

“Environmental toxicity data for the alternatives are scarce, but as far as we know none of the substances in composite material are on any list for priority substances, or have been subject to any alerts from waste water organisations. On the contrary, mercury is listed as a priority hazardous substance e.g. within the Water Framework Directive. Mercury is also one of few chemicals that have been acknowledged as a global environmental problem, based on the comprehensive scientific evidence presented in the Global Mercury Assessment Report (UNEP 2002)” Sources: Consultation on SCHER preliminary report on “The environmental risk and indirect health effects of mercury in dental amalgam”. Response from Swedish Chemicals Agency (2008)