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SHIP OBSERVATIONS TEAM

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**VOSP-V
ISSUES FOR THE VOS**

European Unions' Restriction on the use and Transportation of Mercury

(Submitted by Ms Sarah North, Chairperson of the JCOMM Task Team on the VOSCLIM Project)

Summary and purpose of document

This document contains information on proposals by the European Union to ban mercury exports and the marketing of mercury in certain types of thermometers.

ACTION PROPOSED

The Ship Observations Team is invited to:

- (a) Consider the implications for the future use of mercury in thermometers used on voluntary observing ships and provide guidance, as appropriate;
- (b) Consider the need to make recommendations, as discussed in Paragraph 9 of this document.

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- Appendices:**
- A. Commission Proposes Ban on EU Mercury Exports
 - B. Commission Proposes to Ban Mercury in Fever Thermometers

DISCUSSION

1. Mercury is a potent neurotoxin that can affect the brain, spinal cord, kidneys and liver. It can also affect ecosystems and wildlife. Mercury is persistent and can change in the environment into methylmercury which is its most toxic form.
2. With a view to reducing the risks of exposure to Mercury, the European Commission has proposed legislation to ban all European Union exports of mercury from 2011. Details regarding such legislation are provided in Appendix A to this document.
3. In order to reduce the industrial demand for mercury and to speed up its substitution, the European Commission has also proposed a ban on the marketing of mercury in new fever thermometers, room thermometers and barometers. Further details regarding this issue are provided in **Appendix B** to this document.
4. These proposals by the EU are part of a global effort to reduce the global supply and demand for mercury. International programmes and frameworks for reducing the use, release, trade and risks related to mercury are also being developed by the United Nations Environment Programme (UNEP). Inevitably, such initiatives will increasingly impact on NMSs and VOS operators, and some European VOS operators have already ceased the supply of mercury thermometry to their ships.
5. Examination of the latest metadata given in WMO Publication Number 47 suggests that over 3200 VOS may be equipped with mercury thermometers (although it is recognised that some entries in Pub 47 have not been updated by the VOS operators for a considerable time and, at the time of writing (data available at <http://www.wmo.ch/web/www/ois/pub47/pub47-home.htm>) has not been updated since June 2006).
6. In the coming years, the proposed restrictions on mercury are therefore likely present a growing problem for operators of manually reporting VOS. For instance, in the United Kingdom, wet/dry mercury thermometers fitted in marine screens are used on all manually reporting VOS. Alternative whirling psychrometers with alcohol spirit thermometers may have to be used instead. However, alcohol thermometers have larger expansion co-efficients than those of mercury, and are also subject to other effects such as adhesion to glass, and slow changes in liquid volume due to impurities or dyes. Therefore, they tend to be less accurate than mercury thermometers of similar cost.
7. To comply with Health and Safety obligations in the United Kingdom, arrangements were put in place two years ago to roll out simple foam pad mercury collectors to all UK VOS. More sophisticated spillage kits, together with flowers of sulphur, are also provided for dealing with potential mercury spillages in the Port Meteorological Offices, where larger numbers of mercury thermometers are likely to be stored.
8. Disposal of old or broken thermometers collected from VOS is another issue that needs to be addressed by VOS operators, as are the costs involved in arranging for the safe disposal of toxic residues that are hazardous to health can now be considerable. However, whilst developed countries many have procedures in place for dealing with the safe disposal of mercury, the same may not be true for less developed countries where ships often end up going for scrap.

9. SOT Members are invited to consider the implications of the above restrictions on the use of mercury, and Members based outside the European Union are invited to advise whether similar restrictions apply in their countries. The Meeting is invited to:
- Consider the need to make recommendations to VOS operators aimed at phasing out the future supply of mercury thermometers to observing ships;
 - Consider the need to make recommendations concerning the provision of mercury spillage kits on ships where mercury remains in use.

Appendices: 2

APPENDIX A

COMMISSION PROPOSES BAN ON EU MERCURY EXPORTS

Environment: Commission proposes ban on EU mercury exports

Reference: IP/06/1481 Date: 26/10/2006

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IP/06/1481

Brussels, 26 October 2006

Environment: Commission proposes ban on EU mercury exports

The European Commission today proposed legislation to ban all European Union exports of mercury from 2011. The ban forms a key part of the EU's strategy for reducing global exposure to mercury, which is highly toxic to both humans and the environment. The export ban will significantly reduce global supply and thereby also emissions of the heavy metal into the environment. The proposed Regulation requires mercury that is no longer used in the chlor-alkali industry or that is produced in certain other industrial operations to be put into safe storage once the export prohibition takes effect in July 2011. The Commission is organising an international mercury conference on 26-27 October in Brussels to promote global action, including the possible development of a legally binding international agreement, to reduce human and environmental exposure.

Environment Commissioner Stavros Dimas said: "This proposal underlines the Commission's determination to protect people and the environment from exposure to this highly toxic metal. In banning exports of mercury and requiring its safe storage, the EU will be setting an example for global action to reduce emissions. I urge other countries to support moves towards a worldwide agreement."

Dangers of mercury exposure

Mercury and its compounds are highly toxic to humans, animals and ecosystems. High doses can be fatal to humans, but even relatively low doses can seriously affect the nervous system and have been linked with possible harmful effects on the cardiovascular, immune and reproductive systems. Mercury persists in the environment, where it can change into methylmercury, its most toxic form. Methylmercury readily passes through both the placenta and the blood-brain barrier, so exposure of women of child-bearing age and of children is of greatest concern.

Mercury use and exports

Mercury use is declining both in the EU and globally. Global demand is around 3,400 tonnes per year, with the EU-15 accounting for 440 tonnes in 2005.

Globally, the main uses of mercury are in small-scale gold mining, the chlor-alkali industry and production of vinyl-chloride monomer, the basis of PVC plastic. In the EU only the chlor-alkali industry remains a significant user, and it is progressively phasing out the use of mercury-containing cells in its production of chlorine. The next most significant use in the EU is in dental amalgam.

A main global supplier of mercury is the Spanish state-owned firm MAYASA, which supplies around 1,000 tonnes per year.

MAYASA re-sells mercury that it buys from the EU chlor-alkali industry as mercury cells are phased out. It is estimated that between now and 2020 some 12,000 tonnes of mercury will become available due to this phase-out.

The proposal

To contribute to a global reduction in mercury exposure, the proposed Regulation^[1] would ban mercury exports from the EU from 1 July 2011. From the same date, mercury no longer used in the chlor-alkali industry as well as mercury gained from the purification of natural gas or production of non-ferrous metals would have to be safely stored^[2].

The Commission has consulted widely on its proposal and MAYASA, the Spanish government and the European chlor-alkali industry – the stakeholders most directly affected – have agreed to the ban from the date proposed. The Commission has taken note that Cefic, the European chemical industry organisation, has given a voluntary commitment to ensure safe storage of mercury from the chlor-alkali industry from 1 July 2011.

The proposed Regulation now goes to the European Parliament and the Council of Ministers for approval under the co-decision procedure.

International mercury conference

Reducing mercury exposure worldwide requires action at international level to complement the EU's own measures. The EU has already raised the need for a legally binding global instrument on mercury at the Governing Council of the UN Environment Program (UNEP).

The international conference on mercury organised by the Commission on 26-27 October in Brussels will focus on reducing supply and demand and should make it possible to identify options for global action. The conference comes just four months before the next meeting of the UNEP Governing Council in February 2007, where the issue of a binding global instrument will again be discussed.

The conference aims to increase international awareness of mercury issues and to facilitate contacts between producing/exporting countries and consuming nations. Participants are expected from more than 30 non-EU countries including China, Russia, India, Brazil, the United States and Canada.

Background

The EU mercury strategy, launched by the Commission in January 2005, is a comprehensive plan addressing mercury pollution both in the EU and globally. It contains 20 measures to reduce mercury emissions, cut supply and demand and protect against exposure, especially to methylmercury found in fish. The export ban and safe storage of surplus supplies are major aspects of the strategy.

See also: <http://ec.europa.eu/environment/chemicals/mercury/index.htm>

APPENDIX B

COMMISSION PROPOSES TO BAN MERCURY IN FEVER THERMOMETERS

Commission proposes to ban mercury in fever thermometers

Reference: IP/06/193 Date: 21/02/2006

IP/06/193

Brussels, 21 February 2006

Commission proposes to ban mercury in fever thermometers

Mercury and its compounds are highly toxic to humans, ecosystems and wildlife. When entering the waste stream, mercury-using products can change into methylmercury, its most toxic form. Methylmercury mainly concentrates in food, in particular the aquatic food chain, making people with high intake of fish and seafood particularly vulnerable (especially in the coastal areas of the Mediterranean). This why the European Commission has proposed today to ban the marketing of mercury in new fever and room thermometers, barometers, blood pressure gauges and manometers and sphygmomanometers. The aim of today's initiative is to reduce the industrial demand for mercury and to speed up its substitution. This will have a beneficial effect for the health of EU citizens and the environment. The Commission expects that a ban of mercury in thermometers will lead to a significant reduction of mercury emissions. The proposal will also establish uniform rules for marketing of measuring devices containing mercury on the internal market, as the rules in the Member States differ.

Commission Vice President Günter Verheugen responsible for enterprise and industry policy said: "This measure will reduce the amount of toxic mercury entering the waste stream. This is good for our citizen's health and the environment. At the same time we create a more coherent and stable legal framework for industry which will be encouraged to develop suitable alternatives."

The Commission estimates that **33 tons of mercury** are used for measuring and control devices per year in the EU (from which **25-30 tons in thermometers** alone).

Many fever thermometers and similar products currently end up being landfilled with the potential for slow but long term leaching, even if the levels of emissions of mercury to the environment have decreased. An increasing share of the equipment is collected and the mercury is recovered, but nevertheless emissions are still significant.

It is estimated that 80-90% of all mercury contained in measuring devices is used in medical and other thermometers for household use. Specialist applications, in particular measuring devices for medical uses, are excluded from the scope of this proposal, because adequate substitutes are not always available yet.

The proposal is part of the of the EU mercury strategy adopted by the Commission at the beginning of 2005. It will now go to the European Parliament and the Council and Ministers for adoption.

All the interested parties have been consulted through a very wide consultation process in the course of preparing the Mercury Strategy, including an open public consultation on the internet. For further information on the proposal:

http://europa.eu.int/comm/enterprise/chemicals/legislation/markrestr/index_en.htm

The Commission's mercury strategy:

<http://europa.eu.int/comm/environment/chemicals/mercury>

