



SHIP SAFETY BULLETIN

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Ship Safety Bulletins provide safety-related information to the marine community.

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Subject: Potential Mercury and Asbestos Exposure

Various groups have expressed their concern over the possible presence of mercury, asbestos and material containing asbestos and the potential exposure of ship's crew working on Canadian registered vessels. This SSB reinforces SSB 07/1998 on the subject of Mercury (Hg) contamination.

Mercury is a silvery-white, heavy, mobile metal that easily vapourises at a relatively low temperature and is a liquid at ordinary room temperature and pressure. It is being used as a component in thermometers, gauges and switches, many of which are used aboard ships. A hazard to the crew only exists upon exposure to the release of mercury from its containing vessel. Mercury contained within the instrument, where all parts are sealed to open atmosphere, pose no health concerns.

The main routes of entry to the body are ingestion by mouth and inhalation through the lungs. Its effects are dependent on the route of entry into the body and the level and duration of exposure. The presence of mercury can usually be detected by sight or by a vapour test conducted by a marine chemist. The limits of exposure are prescribed by the *Marine Occupational Safety and Health Regulations*, made pursuant to the *Canada Labour Code* Part II. The threshold limit value (TLV) for mercury is 0.025mg/m³. Summarized information regarding the properties and safety precaution requirements for mercury are included in the Material Safety Data Sheet (MSDS) found on board each vessel with mercury present in the work environment.

Asbestos is the name given to a group of naturally occurring minerals used in certain products to resist heat and corrosion. Asbestos includes chrysotile (mined in Quebec), amosite, crocidolite, tremolite, anthophyllite, actinote and any of these materials that have been chemically treated and or altered. Asbestos has been used in a wide range of products, both ashore and afloat such as electrical panels, some cement pipes, caulking, sealing and roofing compounds, asphalt or vinyl floor tiles, insulating cements, sprayed insulation, insulating blocks and textiles.

The inhalation of asbestos fibers, the most common route of entry into the body, can cause serious diseases of the lungs and other organs that may not appear until many years after the exposure has occurred. The TLV for asbestos is 0.1 fibre per cubic centimeter (f/cc) of air.

Keywords:

1. Mercury
2. Asbestos
3. Exposure

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Most ship owners have already dealt with these issues through total removal or encapsulation with a maintenance management plan on vessels in their fleet. However, there continues to be an ongoing concern about some older, mostly pre 1980 Canadian ships. Transport Canada in conjunction with Human Resources and Skills Development Canada (HRSDC-Labour) have already begun a random monitoring program for mercury and asbestos onboard Canadian registered vessels to assess the current situation in the marine industry. The authority for the random monitoring is derived from Part II of the *Canada Labour Code* and the *Marine Occupational Safety and Health Regulations*. These inspections will ensure that:

1. Employees are not exposed to mercury or asbestos in excess of the Threshold Limit Values (TLV)
2. Ship owners have effective mercury and asbestos management plans in place to prevent exposure to these substances, and
3. Policy Committees (if required) and/or Workplace Committees (if required) have been established or Health and Safety Representatives (HSR) selected and appointed as required by Sections 134, 135, 135.1 and 136 of *Canada Labour Code* Part II.

The random monitoring program will continue and be expanded nation wide, to determine if the above criteria have been met.

Ship owners, operators and seafarers are reminded of the need to be extra vigilant where there is a possibility of exposure to either substance. While limited exposure to either substance is unlikely to lead to immediate health concerns, the prolonged exposure to mercury or asbestos has been proven to lead to serious health problems.